Bill Kapralos, BSc (Hons.), MSc, Ph.D

Game Development and Interactive Media program, maxSIMhealth Group, Ontario Tech University,
2000 Simcoe Street North, Oshawa, Ontario, Canada. L1H 7K4.
Phone: (905) 721-8668 x2882
Fax: (905) 721-3167
Email: bill.kapralos@ontariotechu.ca
Website: http://www.profkapralos.com

EDUCATION

- **Doctor of Philosophy in Computer Science**. *The Sonel Mapping Acoustical Modeling Method.* Department of Engineering and Computer Science, York University. Toronto, Ontario, Canada. September 2006. Supervisor: Dr. Michael Jenkin. Co-supervisor: Dr. Evangelos Milios.
- **Master of Science in Computer Science**. *Eyes 'n Ears: A System for Attentive Teleconferencing.* Department of Engineering and Computer Science, York University. Toronto, Ontario, Canada. April 2001. Supervisor: Dr. Michael Jenkin. Co-supervisor: Dr. Evangelos Milios.
- **Bachelor of Science in Computer Science** *(graduated with honours and first class with distinction)*. Department of Engineering and Computer Science, York University. Toronto, Ontario, Canada. May 1999.
- **Electronics Engineering Technician Diploma**. Humber College of Applied Arts and Technology. Etobicoke, Ontario, Canada (two more courses required).
- **Electronics Basics Program** *(graduated with honours)*. Humber College of Applied Arts and Technology. Etobicoke, Ontario, Canada. June 1994.

EMPLOYMENT HISTORY

- **Associate Professor (July 2011 - present); Program Director (July 2015 – June 2016, July 2018 – June 2019).** Game Development and Interactive Media program, Faculty of Business and Information Technology, Ontario Tech University. Oshawa, Ontario, Canada.
- **Technical Lead (April 2018 – present).** Collaborative Human Immersive Interaction Laboratory (CHISIL), Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada.
- **Assistant Professor (August 2006 – June 2011).** Game Development and Interactive Media program, Software Informatics Research Centre, Oshawa, Ontario, Canada.
- **Honorable Guest Professor (April 2014 – present).** Graduate School of Informatics, Shizuoka University, Hamamatsu, Japan.
- **Adjunct Professor (May 2007 - present).** Faculty of Graduate Studies, Department of Engineering and Computer Science, York University. Toronto, Ontario, Canada.
- **Course Director (Contract Faculty, January 2001 – August 2006)**. Department of Engineering and Computer Science, York University. Toronto, Ontario, Canada.
- **Course Director (Contract Faculty, April 2005 – August 2005)**. Department of Computer Science, University of Toronto. Toronto, Ontario, Canada.
- **Course Director (Contract Faculty, January 2005 – May 2006)**. School of Applied Technology, Humber College of Applied Arts and Technology. Etobicoke, Ontario, Canada.
- **Teaching Assistant (January 1999 – August 2006).** Department of Computer Science and Engineering, York University. Toronto, Ontario, Canada.
- **Research Assistant (May 1996 – April 1999).** Department of Computer Science and Engineering, York University. Toronto, Ontario, Canada.
- **Pinball and Video Game Technician (May 1993 – August 1996).** Seven Star Amusements. Toronto, Ontario, Canada.

ACADEMIC HONORS AND AWARDS

- *2024 Ontario Tech University Research Excellence Award – Established Researcher Category*, July 2024.
- *Research Excellence Award, Established Researchers Category*, Faculty of Business and Information Technology, Ontario Tech University, April, 2024.
- *Ontario Tech University, 2021 Research Excellence Chair*, July 1, 2022 – June 30, 2024.

- *Research Excellence Award, Senior Research Category*, Faculty of Business and Information Technology, Ontario Tech University, March, 2020.
- *Greek Diaspora Fellowship 2019* (funded by a grant from the Stavros Niarchos Foundation (SNF) to the Institute of International Education (IIE)), to conduct research in Greece. November 2019.
- *Australian Government 2018 Endeavour Executive Fellowship* to conduct research in Australia.
- At the invitation of the Federal Republic of Germany, I took part in the week-long *Electronic Start-Up: Industry 4.0 in Germany, Country of Innovation, Visitors Programme*, Germany. August 2016.
- *Natural Sciences and Engineering Research Council of Canada* (NSERC) and *Japan Society for the Promotion of Science* (JSPS) *Fellowship for Research in Japan*. May 2014.
- *Google Faculty Research Award* (co-recipient). July 2010.
- *IBM Center for Advanced Studies* (CAS) Faculty Award. June 2009.
- *Joseph Liu Thesis Award*, Engineering and Computer Science, York University. June 2007.
- *York University President's Dissertation Scholarship*. September 2004 – August 2005.
- *Ontario Graduate Scholarships in Science and Technology* (OGSST). May 2003 – April 2004.
- *Institute for Robotics and Intelligent Systems (IRIS) Student Fellowship*. June 2003.
- *Gold (first place) poster*. 12th Annual Canadian Conference on Intelligent Systems, Calgary, Alberta, Canada. May 29 - June 1, 2002.
- *Natural Sciences and Engineering Research Council of Canada (NSERC), Post Graduate Scholarship* (PGS B). May 2001 – April 2003.
- *Ontario Graduate Student Scholarship* (OGS). April 2001 (declined in favor of NSERC).
- *Joseph Liu Thesis Award*, Engineering Computer Science, York University. June 2001.
- *Center for Research in Earth and Space Technology, Graduate Student Award*. May 2001.
- *Center for Research in Earth and Space Technology, Graduate Student Award*. October 2001.
- *Allen S. Berg Award* (in memory of Nancy Waisbord) for consistently demonstrating excellence in Computer Science. Dept. of Computer Science and Engineering. York University. June 1999.
- *Natural Sciences and Engineering Research Council of Canada (NSERC), Post Graduate Scholarship* (PGS A). May 1999 – April 2001.
- *Ontario Graduate Student Scholarship* (OGS). April 1999 (declined in favor of NSERC).
- *York University Continuing Student Scholarship*. September 1998.
- *York University Science Undergraduate Research Award*. May 1998 – August 1998.
- *York University Science Undergraduate Research Award*. May 1997 – August 1997.
- *York University Continuing Student Scholarship*. September 1996.
- *York University Continuing Student Scholarship*. April 1996.

RESEARCH
Past and Current Research Grants and Funding (External Funding Sources: Non-UOIT)

Description	Year	Amount
C. McKay, McCormick-Brighton, K. Bradstock, A. LeSage, B. Kapralos, T. Eickmeier, and J. Hunter. Transforming early years, educator efficacy through immersive training and simulation. *Natural Sciences and Enignering Research Council of Canada (NSERC), College and Community Social Innovation Fund (CCSIF)*.	Sep 2025 – Aug 2028	$359,004
B. Kapralos. Development of an authoring platform to create inclusive immersive virtual learning environments for cognitive and psychomotor skills development. *Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Development Grant*.	Apr 2025 – Mar 2027	$44,000
B. Kapralos, T. Aoki, H. Inokawa, A. Dubrowski, M. Jenkin, K. Kanev, KC Collins, A. Quevedo, C. DaSilva, E. Peisachovich, and F. Alam. Virtual psychomotor-based skills development using pseudo-haptics. *Research Center for Biomedical Engineering, Shizuoka University, Collaboration Grant*.	Apr 2024 – Mar 2025	$3,000
C. da Silva, B. Kapralos, A. Dubrowski, A. Quevedo, E. Peisachovich, C. Anyinam, M. Dasterjerdi, T. Shute, S. Coffey, L. Graham, and L. Endersby. International educated NurseXcel: Virtual serious games. *Social Sciences and Humanities Research Council of Canada (SSHRC), Insight Grants*.	Mar 2024 – Feb 2029	$201,342
B. Kapralos and A. Dubrowski. Designing a serious gaming authoring platform:	Mar. 2024 –	$7,000

Determining educator requirements. *Social Sciences and Humanities Research Council of Canada (SSHRC), Small Grants (SSG) Program – Explore Grant.*	Feb 2025	
B. Kapralos with Ontario Shores Centre for Mental Health Sciences (industry partner). VR-SIM Carers authoring platform (VR-CAP). *MITACS Accelerate.*	Mar. 2024 – Feb. 2025	$90,000
J. Arcand, J. Hughes, B. Kapralos, A. LeSage, W. Lou, E. Vogel. Efficacy of a digital school-based nutrition education intervention to improve healthy eating knowledge, attitudes and behaviours. *Canadian Institutes for Health Research (CIHR), Operating Grant.*	Apr. 2023 – Mar. 2026	$481,950
S. Dogra, D. Bouchard, J. Copeland, D. Dunstan, D. Heyland, S. Horton, and B. Kapralos. Co-creation and feasibility assessment of a staircase approach to reduce sedentary time and increase physical activity in older adults. *Canadian Institutes of Health Research (CIHR), Project Grant - Priority Announcement, Aging.*	Apr. 2023 – Mar. 2024	$100,000
W. H. Gage, C. da Silva, B. Kapralos, A. Dubrowski, S. Coffey, C. Anyinam, L. Graham, E. Peisachovich, A. Torres, F. Singh. Palliative care in long-term care: A virtual serious game. *eCampus Ontario - Virtual Learning Strategy - Digital Content.*	Jul 2022 – Jan 2023	$70,348
A. Burhan, M. Smith, T. Raji, J. Sadovoy, A. Dubrowski, B. Kapralos, A. Shnall, I. Rubinstein, R. Beleno. Dementia caregivers skills training through virtual reality simulation (VR-SIM CARERS). *National Research Council's Aging in Place Challenge Program and Canadian Institutes of Health Research Institute of Aging.*	Apr 2022 – Mar 2025	$400,000
B. Gamble, A. Dubrowski, S. Felder, M. A. Rostek. Exploring and describing the life experiences of Canadian female Veterans during, pre and post military service. *Social Sciences and Humanities Research Council of Canada (SSHRC), Insight Grants.*	Apr 2022 – Mar 2025	$176,385
W. Sun, A. Quevedo, A. Dubrowski, N. Rodrigues, R. Ingino, P. Coppin, B. Gamble, M. Lemonde, B. Kapralos, and Ontario Shores Center for Mental Health Sciences. Examining the physical, social and educational benefits of CLEAN exergame for persons with dementia to promote hand hygiene and influenza vaccine uptake: A feasibility study. *Social Sciences and Humanities Research Council of Canada. Insight Grant.*	Apr 2022 – Mar. 2024	$99,965
B. Kapralos, H. Inokawa, A. Dubrowski, M. Jenkin, K. Kanev, KC Collins, A. Quevedo, C. DaSilva, E. Peisachovich, and F. Alam. Virtual psychomotor-based skills development using pseudo-haptics. *Research Center for Biomedical Engineering, Shizuoka University, Collaboration Grant.*	Apr. 2022 – Mar. 2023	$6,000
B, Gamble, B. Kapralos, A. Dubrowski, L. Bourne, and E. Moreau. Micro-credential badges: Virtual interprofessional education for medical laboratory (ML) learners. *Ontario Ministry of Colleges and Universities, and Ministry of Labour, Training and Skills Development.*	Jan. 2022 – May 2022	$217,716
Development of micro-credential in dementia care to support capacity building in long-term care using GEM-TECH (Gamified Educational Multimodal Technology Platform).	Jan. 2022 – May 2022	$300,000
E. Peisachovich, A. Dubrowski, C. Da Silva, B. Kapralos, D. Sinclair, R. Jokel, L. Appel, D. Mahdieh, and G. Maheux-Pelletier. AREduX augmented reality experience and experiential education medium to teach empathy to healthcare providers and caregivers of persons living with dementia. *Social Sciences and Humanities Research Council of Canada (SSHRC), Insight Grants.*	Apr 2021 – Mar 2024	$277,866
C. Da Silva, B. Kapralos, A. Dubrowski, A. Torres, S. Coffey, C. Anyinam, L. Graham, and E. Peisachovich. International educated nurse-centered virtual serious game. *eCampus Virtual Learning Strategy,*	Mar 2021 – Feb 2022	$90,000
B. Kapralos et al. Examining the effect of sound on haptic fidelity perception in virtual environments. *2021 Cooperative Research at Research Center of Biomedical Engineering, Research Institute of Electronics (RIE), Shizuoka University, Japan.*	Mar 2021 – Feb 2022	$2,000
A. Dubrowski, B. Kapralos, and A. Torres. Enhancing educators' experience with a collaborative learning management system (GEN-LMS). *Social Sciences and Humanities Research Council of Canada Small Grants Program 2021.*	Mar 2021 – Mar 2022	$6,914.00
L. Robertson, B. Muirehead, and B. Kapralos. Ready, Teacher One. *Social Sciences and Humanities Research Council of Canada (SSHRC), Partnership Engage Grants.*	Dec 2020 – Nov 2021	$24,811

A. Dubrowski, B. Kapralos, P. Mutombo, and A. Torres. Using an innovative tool to teach and test cultural competencies to enhance age-friendly communities. *Teaching City Grant, City of Oshawa*.	Aug 2020 – Jul 2021	$20,000
B. Kapralos et al. Examining the effect of sound on haptic fidelity perception in virtual environments. *2020 Cooperative Research at Research Center of Biomedical Engineering, Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan*.	Jun 2020 – Mar 2021	$2,200
W. Tavares, F. Alam, C. Matava, B. Kapralos, A. Dubrowski, and R. Brydges. Exploring the validity of virtual clinical performance assessments. *The Medical Council of Canada, Research in Clinical Assessment Grant Competition*.	Jun 2020 – May 2021	$37,444
J. Goodwin, M. Williams-Bell, B. Murphy, B. Kapralos, A. Hogue, and C. McGregor. Enriching firefighter training through the development of a novel virtual reality training simulation for personalized, precision skill and resilience training. *Natural Sciences and Engineering Research Council of Canada, College Community Social Innovation Fund*.	Dec. 2019 – Nov. 2022	$358,920
W. Sun, M. Lemonde, A. Quevedo, R. Liscano, B. Kapralos, A. Tokuhiro, and E. Bartfay. Advancing reminiscence therapy through virtual reality application to promote social connectedness of persons with dementia. *Ontario Shores-Ontario Tech University Joint Call for Proposals in Dementia Care 2019*.	Oct 2019 – Dec 2020	$25,000
C. Da Silva, C. Anyinam, B. Kapralos, E. Peisachovich, R. Gal, S. Coffey, and T. Shute. Person-centered serious games for mental health education. *Social Sciences and Humanities Research Council of Canada (SSHRC), Insight Development Grants*.	Jun 2019 – May 2021	$46,144
B. Kapralos et al. Examining the effect of sound on haptic fidelity perception in virtual environments. *2019 Cooperative Research at Research Center of Biomedical Engineering, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	Jun 2019 – Mar 2020	$2,200
B. Kapralos. Effective immersive environments; multi-modal interactions, and user interface customization. *Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant.*	Apr 2019 – Mar 2024	$170,000
B. Kapralos and A. Quevedo. Usability testing of a gamified educational network. *Social Sciences and Humanities Research Council of Canada Small Grants Program 2018.*	Jun 2018 – Mar 2019	$2,000
B. Kapralos et al. Examining the effect of sound on haptic fidelity perception in virtual environments. *2018 Cooperative Research at Research Center of Biomedical Engineering, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	Jun 2018 – Mar 2019	$2,300
B. Pérez, A. J. Uribe Quevedo, N. Jaimes, B. Kapralos, and D. Rojas. Diseño y desarrollo de un prototipo de simulador con realidad virtual para el tratamiento de infarto de miocardio fase I. *Universidad Militar Nueva Granada (UMMG), Bogota, Colombia*.	Feb 2018 – Jan 2019	$35,000
J. Hughes, C. Collins, J. Arcand, M. DiGiuseppe, S. Dogra, A. Hogue, B. Kapralos, R. Kay, J. Laffier, A. Lesage, A. Mamolo, D. Petrarca, N. Wattie, G. Gadanidis, and I. K. Namukasa. There's an app for that: Designing, developing, researching educational apps. *Ontario Research Fund* (ORF).	Aug. 2017 – Jul 2022	$1,175,000
B. Kapralos et al. Examining the effect of sound on haptic fidelity perception in virtual environments. *2017 Cooperative Research at Research Center of Biomedical Engineering, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	Jun 2017 – Mar 2018	$2,300
A. J. Uribe Quevedo, B. Kapralos, D. Rojas, B. Pérez, and L. Peñuela. Development of a multimodal tool for cardiac auscultation training phase I. *Universidad Militar Nueva Granada, Bogota, Colombia*.	Feb 2017 – Jan 2018	$21,000
A. J. Uribe Quevedo, B. Kapralos, D. Rojas, and B. Pérez. Development of a monitoring posture exergame prototype based on occupational health exercises for maintenance workers phase I. *Universidad Militar Nueva Granada (UMMG), Bogota, Colombia*.	Feb 2017 – Jan 2018	$21,000
B. Kapralos et al. Cardiac auscultation skills development through medical simulation-based training. *2016 Cooperative Research at Research Center of Biomedical Engineering, Research Institute of Electronics (RIE), Shizuoka University, Japan*.	Jun 2016 – Mar 2017	$2,600

B. Kapralos et al. Development of a novel tabletop and mobile imaging device based system to facilitate learner-centric education. *2015 Cooperative Research Project, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	Apr 2015 – Mar 2016	$3,000
A. Whitehead, R. Biddle, S. Chiasson, L. Frankel, A. Girouard, N. Graham, C. Herdman, B. Kapralos, and A. Ramirez. Collaborative learning of usability experiences (CLUE). *Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Training Experience Program (Industrial Stream).*	May 2015 – Apr 2021	1,650,000
S. Dunn, S. Bhatia, O. Bhattacharyya, A. Chan, E. Feuerstein, B. Kapralos, and L. McCarthy. Development and pilot evaluation of an interactive mobile app (M-app) to support decision-making for emergency contraception. *Alternative Funding Plans for Academic Health Science Centres, Innovation Fund*.	Jan 2015 – Feb 2016	$13,850
K. Collins, R. Dockwray, and B. Kapralos. Understanding and improving musical user-generated content in video games. *Social Sciences and Humanities Research Council of Canada (SSHRC) Insight Grants.*	May 2014 – Apr 2018	$224,820
B. Kapralos. Spatial sound generation and perceptual-based rendering for virtual environments and serious games. *Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant.*	May 2014 – Apr 2019	$100,000
B. Kapralos (with industrial partner Spincore Inc.). An engaging vision-based exergame for exercise and rehabilitation. *Natural Sciences and Engineering Research Council of Canada (NSERC) Engage Grants*.	May 2014 – Nov 2014	$24,509
B. Kapralos, A. Dubrowski, M. Hogan, N. Randall, L. Brudnoy, K. Collins, A. Sheppard, and F. Haji. A serious game for medical-based cultural competence education and training. *Ontario Simulation Network, Simulation Research & Innovation Grant*.	May 2014 – Apr 2015	$24,915
L. Grierson, A. Dubrowski, B. Kapralos, R. Brydges, C. Bernard, and D. Musson. Observational practice and educational networking: extending the simulation-based education beyond the simulation laboratory. *Ontario Simulation Network (Sim-One), Simulation Research & Innovation Grant*.	Apr 2014 – Mar 2015	$25,000
B. Kapralos et al. Collaborative interprofessional education for critical care teams with augmented e-learning environments engaging advanced imaging devices. *2014 Cooperative Research Project, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	Apr 2014- Mar 2015	$3,200
B. Kapralos et al. Promoting collaborative interprofessional education for pediatric critical care teams with a table-top computer-based virtual e-learning environment. *2013 Cooperative Research Project, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	May 2013- Apr 2014	$7,000
L. Dempster, E. Lam, K. Burgess, J. Posluns, J. Fiege, A. Hayes, A. Dubrowski, J. Cheung, B. Kapralos, and L. McKay. Communication skills training: An integrated on-line and classroom design using standardized patients and peer role playing. *Faculty of Dentistry, University of Toronto, 2013 Deans Endowment Enrichment Fund*.	2013	$10,192
L. Harris, M. Jenkin, R. Allison, L. Wilcox, W. Gage, A. Hogue, B. Kapralos, and J. Campos. Full field vision and spatial orientation. *Canada Foundation for Innovation (CFI), Leading Edge Fund (2012)*.	2012	$790,891
C. Whitehead, A. Dubrowski, L. McCarthy, H. Carnahan, B. Kapralos, J. Cheung. Assessing the interest, acceptability and usability of social networking to support a primary care patient-centred model for vulnerable older adults. *Ontario Health Science Centre (AHSC) Alternative Funding Plan (AFP) Innovation Fund*.	Dec 2012 – May 2014	$30,000
J. Friedlan, A. Hogue, and B. Kapralos. Interactive accounting game and evaluation engine -- Stage 2. *Ontario Partnership for Innovation and Commercialization, Proof of Principle Fund Stage 2*.	Jul 2012 – Jun 2013	$25,000
N. Randall, A. Arya, C. Joslin, D. Wershler, J. Carette, C. Milburn, B. Kapralos, K. Collins, C. Dimarco, G. Graffam, M. Hancock, K. Harrigan, F. S. Lian, S. Scott. IMMERSe: The interactive & multi-modal experience research syndicate. *Social Sciences and Humanities Research Council of Canada (SSHRC) Partnership Grants*.	May 2012 – Apr 2018	$2,549,960

B. Kapralos et al. Multimodal interactive interfaces for table-top computers in collaborative e-Learning environments. *2012 Cooperative Research Project, Research Institute of Electronics (RIE), Shizuoka University, Hamamatsu, Japan*.	May 2012 – Apr 2013	$11,000
A. Hogue, B. Murphy, B. Kapralos. Development of a serious game to promote safer lifting techniques in the fire service. *Workplace Safety and Insurance Board Solutions for Workplace Change.*	Dec 2011 – Dec 2012	$29,978
B. Murphy, S. Passmore, A. Hogue, B. Kapralos, J. Triano, S. Mior, T. McLellan, and A. Dubrowski. Serious games to decrease injury in the fire service by training safer movement patterns and decision making skills: Development and piloting. *Workers Compensation Board of Manitoba, Research and Workplace Innovation Program*.	May 2012 – May 2014	$199,167
J. Friedlan, A. Hogue, and B. Kapralos. Interactive accounting game and evaluation engine. *Ontario Partnership for Innovation and Commercialization, Proof of Principle Fund*.	July 2011	$10,000
S. Cristancho, B. Kiaii, A. Dubrowski, F. Moussa, and B. Kapralos. Usability testing of virtual and physical simulation resources for training off-pump coronary artery bypass surgery. *J. P. Bickell Foundation*.	May 2011 – Apr 2012	$28,820
K. Collins, A. Hogue, B. Kapralos, N. Randall, S. Stacey. Exploring interactivity and immersion with multi-platform games. *Social Sciences and Humanities Research Council of Canada (SSHRC), Standard Research Grants*.	Apr 2011 – Mar 2014	$157,650
B. Kapralos (with industrial partner Enviroquest Inc.). Incidence response serious game. *Federal Economic Development Agency for Southern Ontario (FedDev Ontario)*.	Apr 2011 – Mar 2012	$50,000
B. Kapralos, K. Collins, A. Hogue, and M. Green. *Interactive games Ontario 3D (iGO3D). Ontario Centres of Excellence, Industry Academia Collaboration Program Technical Problem Solving (TPS).*	Apr 2011-Oct 2012	$24,975
Hogue, B. Kapralos, K. Collins, M. Owen, M. Green, R. Allison, W. Stuerzlinger, S. Mataija, and M. Katchabaw. *Interactive games Ontario 3D (iGO3D). Ontario Media Development Corporation, Entertainment & Creative Cluster Partnership Funds*.	Apr 2011–Oct 2012	$260,000
A. Hogue, B. Kapralos, and J. Friedlan. An interactive case-study simulation engine framework for business and accounting education. *Ontario Centres of Excellence, Industry Academia Collaboration Program Technical Problem Solving (TPS).*	Oct 2010-Jun 2011	$25,000
K. Collins, B. Kapralos, A. Hogue, and J-M. Trivi. Experimenting with distributed audio applications on mobile phones. *Google Faculty Research Award.*	Jul 2010– Jul 2011	$47,000
A. Hogue, J, Friedlan, and B. Kapralos. Development of an interactive accounting game. *Certified General Accountants of Ontario (CGAO).*	Jun 2010– Jun 2011	$66,500
A. Dubrowski, J. Pirie, B. Kapralos, L. Grierson, and H. Carnahan. Testing the effectiveness of an Internet mediated, video based, educational networking instrument in preparing trainees for simulation-based teaching of fundamental technical skills: A randomized control study. *The* Royal College of Physicians and Surgeons of Canada.	Apr 2010– Apr 2011	$23,882
H. Taki, H. Nonaka, J. Vassileva, M. Jenkin, M. Todorova, K. Collins, B. Kapralos, A. Hogue, S. Sakai, H. Inokawa, and K. Kanev. Multimedia interaction interfaces in collaborative e-Learning environments. *Cooperative Research Project at Research Institute of Electronics (RIE), Shizuoka University, Japan*.	Mar 2010– Mar 2011	$12,000
C. Conati, J. Jensen, R. Biddle, E. Lank, L. Hughes, A. Antle, B. Kapralos, and R. Wakkary. Digital games for learning and training. A project in the $23M *Networks of Centres of Excellence, Graphics Animation and New Media Network (GRAND)* research project.	Jan 2010–Dec 2015	$90,000 to B.Kapralos
B. Kapralos, A. Dubrowski, M. Hogan, C. Mallette, A. Hogue, W. Shi, S. Goldsworthy. Development of a virtual learning environment for interprofessional education in critical care. *Inukshuk Wireless Content Development Projects.*	Nov 2009 – Aug 2011	$132,727
K. Collins, and B. Kapralos. Sound on smart tables: An pilot study of methods in sonic interaction design. *Social Sciences and Humanities Research Council of Canada, Research Development Initiative.*	Jul 2009 – Jul 2011	$37,162
M. Jenkin, L. Harris, R. Herpers, R. Allison, and B. Kapralos. The perception of self-motion in virtual environments. *Alexander von Humboldt Foundation (Transcoop Program, Canada-Germany)*.	Jul 2009 – Jul 2012	$54,967 EUR

B. Kapralos. Streaming knowledge, sharing, and advanced interfaces. *IBM Center for Advanced Studies (CAS) Faculty Award*.	Jun 2009 – Jun 2010	$10,000
N. Matsuda, T. Hirashima, J. Vassileva, B. Kapralos, K. Collins, M. Yoneya, K. Kanev, and H. Inokawa. Multimedia interaction interfaces in collaborative e-Learning environments. *Cooperative Research Project, Research Institute of Electronics, Shizuoka University, Japan.*	Mar 2009 – Mar 2010	$11,962
B. Kapralos, M. Hogan, B. Muirhead, and A. Dubrowski. Interactive community simulation environment for public health curriculums. *Social Sciences and Humanities Research Council of Canada (SSHRC) Image, Text, Sound, and Technology (ITST).*	Feb 2009 – Feb 2010	$47,404
A. Dubrowski, M. Barry, H. Carnahan, B. Kapralos, J. MacDonald-Jenkins, D. Rose, O. Safir, and D. Backstein. Effectiveness of an internet mediated, networked learning instrument in simulation based training of clinical tasks. *The Network of Excellence in Simulation for Clinical Teaching and Learning, Innovations and Evaluation Projects*.	Feb 2009-Feb 2010	$37,128
B. Kapralos. Computational acoustics for virtual environments. *National Science and Engineering Research Council (NSERC) Discovery Grant*.	May 2008 – Apr 2013	$79,500

Past and Current Research Grants and Funding (Internal (UOIT) Funding Sources)

Description	Year	Amount
B. Kapralos. A gamified educational network to foster collaborative learning. *UOIT Teaching Innovation Fund*.	Apr 2015 – Mar 2016	$8,000
M. DiGiuseppe, R. Simpson, and B. Kapralos. A serious game for phlebotomy training. *UOIT Teaching Innovation Fund*.	Apr 2015 – Mar 2016	$8,000
L. Nacke, B. Kapralos, and A. Hogue. *Tele-Doolio:* A gamified online to-do list system for project-based teaching and learning. *UOIT Teaching Innovation Fund*.	Apr 2013 – Mar 2014	$7,460
A. Hogue, B. Kapralos, and N. Nacke. Interactive learning objects for linear algebra and physics. *UOIT Teaching Innovation Fund*.	Apr 2012 – Mar 2013	$6,993
B. Kapralos, A. Hogue, and W. Shi. WildMagic+: A high-quality industry-standard open-source game engine framework. *UOIT Teaching Innovation Fund.*	Apr 2009- Mar 2010	$7,100
Hogue, B. Kapralos, and W. Shi. Generalized framework for interactive learning objects with application to linear algebra and physics. *UOIT Teaching Innovation Fund*.	Apr 2009- Mar 2010	$7,100
M. Vargas-Martin, and B. Kapralos. Using sonification to enhance teaching and learning of network intrusion detection. *UOIT Teaching Innovation Fund*.	Apr 2009- Mar 2010	$7,100
B. Kapralos, and M. Hogan. Interactive community simulation environment for public health curriculums. *UOIT Teaching Innovation Fund*.	Apr 2008- Mar 2009	$7,000
A. Hogue, B. Kapralos, and J. Friedlan. Interactive simulation environment for accounting education. *UOIT Teaching Innovation Fund*.	Apr 2008- Mar 2009	$7,000

PUBLICATIONS (Names in bold denote students, underlined names denote post-doctoral fellows)

Citation Conventions: I always place students before me in any authored work even if they have not contributed to the writing of the paper. I strictly follow this approach even if I have taken the leading role in writing of the paper. Generally, a publication where my name appears after students denotes work that I have led even if I am not the last author (non-student authors will appear after me).

Edited Books
1 J.-J. Rousseau, and B. Kapralos (Eds.). Pattern Recognition, Computer Vision, and Image Processing. ICPR 2022 International Workshops and Challenges, *Lecture Notes in Computer Science* (LNCS), Springer, 2023, Volume 13643 (705 pages), Volume 13644 (713 pages), Volume 13645 (629 pages), and Volume 13646 (179 pages).
2 A. Brooks, S. Branham, B. Kapralos, A. Nakajima, J. Tyerman, and l. Jain (Eds.). *Recent Advances in Technologies for Inclusive Well-Being: Virtual patients, gamification and simulation*. Springer-Verlag, Springer Series: Studies in Computational Intelligence, Springer, Heidelberg, Germany, 2021, 541 pages.
3 A. Brook, S. Brahnam, B. Kapralos, and L. Jain (Eds.). *Recent Advances in Technologies for Inclusive Well-Being: From Worn to Off-body Sensing, Virtual Worlds, and Games for Serious Applications.* Springer Series: Studies in Computational Intelligence, Springer, Heidelberg, Germany, 2017, 383 pages.

4   K. Collins, B. Kapralos, and H. Tessler (Eds.). *The Oxford Handbook of Interactive Audio.* Oxford University Press Inc., New York, NY, USA, 2014, 624 pages.

5   J. Anacleto, S. Fels, N. Graham, B. Kapralos, M. S. El-Nasr, and K. Stanley (Eds.). *Entertainment Computing - ICEC 2011: 10th International Conference, ICEC 2011 Proceedings*, Springer, 2011, 493 pages.

Refereed Journal Publications

1   K. Parkington, M. Rouleau-Tang, A. Bhat, J. Martin, A. Rueda, B. Teferra, Y. Liu, M. Ivanov, B. Darnell, L. Beavers, D. Campbell, A. Torres, W. Lou, A. Nazarov, A. Ashbaugh, B. T. Litz, R. Jetly, G. Strudwick, A. Dubrowski, B. Kapralos, S. Krishnan, and V. Bhat. Working under pressure: How virtual reality and psychoeducation shape stress and moral distress responses in nurses. *Digital Health*, to appear 2026 (2024 IF: 3.3)

2   M. Chiu, S. C. Pistritto, K. M. Clarke, A. Torres, C. Craven, A. Dubrowski, B. Kapralos, E. O'Hare, J. Sadavoy, A. Shnall, M. Smith, N. Choudhury, and A. M. Burhan. Supporting unpaid caregivers of persons living with dementia: Protocol for pilot study to explore caregiver outcomes and impact of a co-designed simulation-based psychoeducation program in virtual reality. *JMIR Research Protocols*. (To appear: 2026). (2024 IF: 1.5)

3   B. Kapralos, and B. Rai. From theory to practice: Serious game education in Singapore and Canada. *Cureus Journal of Medical Science*, 17(12): e99358. doi:10.7759/cureus.99358. (2024 IF: 1.3).

4   K. Katsoulis, M. C. Tan, S. Horton, S. Sinha, B. Kapralos, S. Dogra, D. Dunstan, D. Bouchard, and J. Copeland. "It's good. It's really good.": Perspectives of older adults, exercise/recreation professionals, and primary care providers on designing a movement behaviour intervention using the Staircase Approach. *Journal of Aging and Physical Activity*, 2:1-9, 2025. (2024 IF: 1.4)

5   A. Fleet, L. Kaustov, E. Belfiore, B. Kapralos, C. Matava, J. Wiegelmann, P. Giacobbe, and F. Alam. Immersive Reality in Anesthesia: A Narrative Review of Current Educational and Clinical Uses. *Journal of Medical Internet Research* (JMIR), 27: e62785, 2025, doi: 10.2196/62785 (2024 IF: 5.8)

6   J. M. Brown, S. Tahir, B. Franco-Arellano, A. LeSage, J. Hughes, B. Kapralos, W. Lou, E. Vogel, M. Farkouh, C. Tugault-Lafleur, and J. Arcand. Efficacy of the Foodbot Factory digital curriculum-based nutrition education Intervention in improving children's nutrition knowledge, attitudes and behaviours in elementary school classrooms: Protocol for a cluster randomised controlled trial. *BMJ Open,* 15(1):e092426, 2025. (2024 IF: 2.4)

7   E. Battegazzorre, B. Gino, F. Strada, B. Kapralos, A. Dubrowski, F. Lamberti, and A. Bottino. Enhancing difficult airway management training: The role of virtual reality and adaptive learning. *Virtual Reality,* 29(Article 22), 2025. doi:10.1007/s10055-025-01105-4 (2024 IF: 5.0)

8   K. Katsoulis, M. C. Tan, S. Horton, S. Sinha, B. Kapralos, S. Dogra, D. Dunstan, D. Bouchard, and J. Copeland. Using the Staircase Approach to increase movement: A systematic search and review to inform a novel sedentary behaviour intervention for older adults. *Health Promotion and Chronic Disease Prevention in Canada Journal*, 45(2), 2025. doi: oi.org/10.24095/hpcdp.45.2.01 (2024 IF: 4.8)

9   B. Kapralos. Immersive virtual learning environments for healthcare education: State-of-art, and open problems. *Cureus Journal of Medical Science*, 16(9):e68483. doi:10.7759/cureus.68483, 2024. (2024 IF: 1.1)

10   K. M. Kokorelias, M. Chiu, S.Paul, L. Zhu, N. Choudhury, C. G. Craven, A. Dubrowski, T. Redublo, B. Kapralos, M. Smith, A. Shnall, J. Sadavoy, and A. Burhan. Use of virtual reality and augmented reality technologies to support resilience and skills-building in caregivers of persons with dementia: A scoping review. *Cureus Journal of Medical Science,* 16(7):e64082. (2024 IF: 1.1)

11   S. Abdo, B. Kapralos, KC Collins, and A. Dubrowski. A review of recent literature on audio-based pseudo-haptics. *Applied Sciences*, Special Issue on *Applied Audio Interaction,* 14(14):6020, 1-19, 2024 (2024 IF: 2.5)

12   R. Savaglio, J. Brown, B. Kapralos, B. Franco Arellano, A. LeSage, and J. Arcand. An accessible version of the Foodbot Factory serious game for nutrition education. *IEEE Transactions on Games*. 17(1):181-195, 2025 (2024 IF: 2.3)

13   S. Meshkat, M. Edalatkhah, C. Di Luciano, J. Martin, G. Kaur, G. Hee Lee, H. Park, A. Torres, A. Mazalek, B. Kapralos, A. Dubrowski, and V. Bhat. Virtual reality and stress management: A systematic review. *Cureus Journal of Medical Science*, 16(7): e64573. doi:10.7759/cureus.64573 (2024 IF: 1.3)

14   J. Martin, A. Rueda, G. H. Lee, V. K. Tassone, H. Park, M. Ivanov, B. Darnell, L. Beavers, D. M. Campbell, B. Nguyen, A. Torres, H. Jung, W. Lou, A. Nazarov, A. Ashbaugh, B. Kapralos, B. Litz, R. Jetly, A. Dubrowski, G. Strudwick, S. Krishnan, and V. Bhat. Digital interventions to understand and mitigate stress response: Protocol for process & content evaluation of a cohort study. *JMIR Research Protocols*, 13:e54180, 2024. (2024 IF: 1.5)

15   A. Torres, B. Kapralos, and A. Dubrowski. Examining the usability of the Moirai serious game authoring platform. *IEEE Transactions on Games*, 17(1):235 − 241, 2024. (2024 IF: 2.8)

16   **A. Torres, B. Nguyen**, B. Kapralos, S. Krishnan, D. M. Campbell, L. Beavers, A. Dubrowski, and V. Bhat. Development and implementation of a stress monitoring paradigm using virtual reality simulation during the COVID-19 pandemic. *Cureus Journal of Medical Science*, 16(2):e53450, doi: 10.7759/cureus.53450. (**2024 IF: 1.3**)

17   **B. Franco-Arellano, J. Marie Brown, Q. Daggett, C. Lockhart**, B. Kapralos, A. LeSage, and J. Arcand. Updating the Foodbot Factory serious game with new interactive engaging features and enhanced educational content. *Applied Physiology, Nutrition, and Metabolism*, 49(1):52-63, 2023. (**2024 IF: 2.8**).

18   **G. Hollaender**, E. Peisachovich, B. Kapralos, **C. Culver**, C. Da Silva, and A. Dubrowski. Augmented Reality Education Experience (AREduX): An augmented reality experience and experiential education medium to teach empathy to healthcare providers and caregivers of persons living with dementia. *Cureus Journal of Medical Science*, 5(11):e48384. doi:10.7759/cureus.48384 (**2024 IF: 1.3**)

19   **B. Nguyen, A. Torres, C. Espinola**, W. Sim, D. Kenny, D. M. Campbell, W. Lou, B. Kapralos, L. Elizabeth Peter, A. Dubrowski, S. Krishnan, and V. Bhat. Development of a data-driven digital phenotype profile of distress experience of healthcare workers during COVID-19 pandemic. *Computer Methods and Programs in Biomedicine*, 240:1-12, 2023. (**2024 IF: 4.8**).

20   **G. Ning, B. Grant**, B. Kapralos, A. Quevedo, K. Collins, K. Kanev, A. Dubrowski. Understanding virtual drilling perception using sound, and kinesthetic cues obtained with a mouse and keyboard. *Journal on Multimodal User Interfaces*, 17(1):151–163, 2023. (**2024 IF: 2.1**)

21   N. Guérard-Poirier, L. Meloche-Dumas, M. Beniey, **A. Torres**, B. Kapralos, M. Dhane, F. Mercier, R. Younan, A. Dubrowski, E. Patocskai. The exploration of remote simulation strategies for the acquisition of psychomotor skills in surgery: A pilot randomized controlled trial. *Discover Education,* 2:Article No. 19, 2023. https://doi.org/10.1007/s44217-023-00041-2

22   E. Patocskai, F. Pelletier, **A. Torres**, L. Meloche-Dumas, N. Guérard-Poirier, A. Kaviani, B. Kapralos, F. Mercier, and A. Dubrowski. The role of collaborative observational practice and feedback-discourse to promote remote acquisition of technical surgical skills. *Journal of Surgical Research*, 288:372-382, 2023. (**2024 IF: 1.8**)

23   V. Blouin, F. Bénard, F. Pelletier **S. Abdo**, L. Meloche-Dumas, B. Kapralos, A. Dubrowski, and E. Patocskai. Optimizing the learner's role in feedback: development of a feedback-preparedness online application for medical students in the clinical setting. *Cureus Journal of Medical Science*, 288:372-382, 2023. (**2024 IF: 1.3**).

24   F. Bénard, L. Meloche-Dumas, S. Bérubé, D. Cadoret, A. Arutiunian, Y. Papas, **A. Torres**, B. Kapralos, F. Mercier, A. Dubrowski, E. Patocskai. Hand sewn anastomosis skill acquisition and in vivo transfer using 3D-printed small bowel simulator. *Journal of Surgical Research,* 288:225-232. (**2024 IF: 1.8**).

25   **C. W. Espinol, B. Nguyen, A. Torres,** W. Sim, A. Rueda, D. Kenny, D. M. Campbell, L. Beavers, H. Jung, W. Lou, B. Kapralos, E. Peter, A. Dubrowski, S. Krishnan and V. Bhat. Digital interventions for stress among frontline health care providers: Results from a pilot feasibility cohort trial. *JMIR Serious Games*, 11(2), 2022, doi: 10.2196/32240. (**2024 IF: 2.8**)

26   **A. Torres**, B. Kapralos, C. Da Silva, E. Peisachovich, and A. Dubrowski. Moirai: A no-code virtual serious game authoring platform. *Virtual Worlds*, 1(2):147-171, 2022.

27   **M. Sivanathan**, C. W. Espinola, A. Uribe Quevedo, B. Kapralos, S. Krishnan, V. Bhat, and A. Dubrowski. Development of content for a virtual reality simulation to understand and mitigate moral distress in healthcare workers: Design thinking and Delphi methodology. *Cureus Journal of Medical Science*. 14(11):e31240, 2022. doi:10.7759/cureus.31240. (**2024 IF: 1.3**).

28   E. Peisachovich, B. Kapralos, C. Da Silva, A. Dubrowski, N. L. Graham, R. Jokel. Focus group findings to support the preliminary development of the augmented reality education experience (AREduX). *Cureus Journal of Medical Science*, 14(6):e26304, 2022. doi:10.7759/cureus.26304. (**2024 IF: 1.3**).

29   B. Kapralos, A. Quevedo, C. DaSilva, E. H. Peisachovich, KC. Collins, K. Kanev, M. Jenkin, and A. Dubrowski. Revisiting pseudo-haptics for psychomotor skills development in online teaching. *Cureus Journal of Medical Science*, 14(3): e23664, 2022. doi:10.7759/cureus.23664. (**2024 IF: 1.3**).

30   **B. Nguyen, A. Torres**, W. Sim, D. Kenny, L. Beavers, D. Campbell, W. Lou, B. Kapralos, E. Peter, A. Dubrowski, S. Krishnan , and V. Bhat. Digital interventions to reduce distress among health care providers at the frontline: Protocol for a feasibility trial*. JMIR Research Protocols*, 11(2):e32240, 2022. (**2024 IF: 1.4**)

31   **M. Mnaymneh,** R. van Oostveen, B. Kapralos, and Adam Dubrowski. Effective collaboration through activity theory and knotworking in clinical settings. *Cureus Journal of Medical Science*, 13(11): e19860. doi:10.7759/cureus.19860. (**2022 IF: 1.2**).

32   **M. Chan**, A. Uribe-Quevedo, M. Jenkin, B. Kapralos, N. Jaimes, and K. Kanev. Virtual and augmented reality direct ophthalmoscopy tool: A usability, task workload, and task difficulty comparison. *Multimodal Technologies and Interaction*, 5(11):66, 2021. doi.org/10.3390/mti5110066. (**2024 IF: 2.4**).

33   M. A. Garcia-Ruiz, B. Kapralos, G. Rebolledo-Mendez. An overview of olfactory displays in education and training. *Multimodal Technologies and Interaction*, 5(10):64, 2021, doi.org/10.3390/mti5100064. (**2024 IF: 2.4**).

34 M. Habti, F. Bénard, A. Arutiunian, S. Bérubé, D. Cadoret, L. Meloche-Dumas, A. Torres, B. Kapralos, F. Mercier, A. Dubrowski, and E. Patocskai. Development and learner-based assessment of a novel, customized, 3D printed small bowel simulator for hand-sewn anastomosis training. *Cureus Journal of Medical Science*, 13(12): e20536. doi:10.7759/cureus.20536, 2021. (**2024 IF: 1.3**).

35 E. H. Peisachovich, A. Dubrowski, C. Da Silva, B. Kapralos, J. E. Klein, and Z. Rahmanov. Using simulation-based methods to support demonstration of competencies required by micro-credential courses. *Cureus Journal of Medical Science*, s 13(8): e16908. doi:10.7759/cureus.16908. (**2024 IF: 1.3**).

36 B. Kapralos. Learning about serious game design and development at the K-12 level. *International Journal of Information and Learning Technology*, 38(3):316-327, 2021.

37 **B. Cowan**, B. Kapralos, and K. Collins. Does improved sound rendering increase player performance? A Graph-based spatial sound framework. *IEEE Transactions on Games*, 13(3): 263-274, 2021. doi: 10.1109/TG.2020.3000261. (**2024 IF: 2.3**)

38 A. Dubrowski, B. Kapralos, E. Peisachovich, C. Da Silva, and **A. Torres**. A model for an online learning management system for simulation-based acquisition of psychomotor skills in health professions education, *Cureus Journal of Medical Science*, 13(3):e14055, 2021. doi:10.7759/cureus.14055. (**2024 IF: 1.3**).

39 **J. Moo-Young**, **T. M. Weber**, B. Kapralos, A. Quevedo, and F. Alam. Development of "Unity Simulator for Epidural Insertion Training" (USEIT) for replacing current lumbar puncture simulators, *Cureus Journal of Medical Science*, 13(2):e13409, 2021. doi 10.7759/cureus.13409. (**2024 IF: 1.3**).

40 **H. M. Froome**, C. Towson, S. Rhodes, **B. Franco-Arellano**, A. LeSage, **R. Savaglio**, **J. Brown**, J. Hughes, B. Kapralos, and J. Arcand. Effectiveness of the Foodbot Factory mobile serious game on increasing nutrition knowledge in children. *Nutrients* 12, 3413, 2020; doi:10.3390/nu12113413. (**2024 IF: 4.8**).

41 **K. Wilcocks**, B. Kapralos, A. Uribe-Quevedo, F. Alam, and A. Dubrowski. The anesthesia crisis scenario builder for authoring anesthesia crisis-based simulations. *IEEE Transactions on Games*, 12(4):361-366, 2020. (**2024 IF: 2.3**)

42 **J. M. Brown, R. Savaglio, G. Watson**, A. Kaplansky, A. LeSage, J. Hughes, B. Kapralos, and J. Arcand. Optimizing child nutrition education with the Foodbot Factory mobile health app: Formative evaluation and analysis. *Journal of Medical Internet Research (JMIR) Formative Research,* 4(4): 15534, 2020. doi:10.2196/15534 (**2024 IF: 2.0**).

43 B. Kapralos, A. Uribe-Quevedo, K. Collins, and A. Dubrowski. Intelligent avatars and emotion in medical-based virtual environments. *Intelligent Decision Technologies*, 13(4):407-416, 2020. (**2024 IF: 0.8**).

44 **B. L. Grant**, P. C. Yielder, T. A. Patrick, B. Kapralos, M. Williams-Bell, B. A. Murphy. Audiohaptic feedback enhances motor performance in a low-fidelity simulated drilling task. *Brain Sciences*, Special Issue on *The Role of Body in Brain Plasticity*, 10(1):1-14, 2020. (**2024 IF: 2.8**)

45 **K. M. Clarke**, B. Kapralos, A. Quevedo, and A. Dubrowski. Constructing a multidisciplinary network that relies on disruptive technologies to design, test, and implement simulation training. *Cureus Journal of Medical Science,* 12(4):e7548, 2020. doi:10.7759/cureus.7548 (Editorial) (**2024 IF: 1.3**).

46 **M. Beig**, B. Kapralos, K. Collins, and P. Mirza-Babei. An introduction to spatial sound rendering in virtual environments and games. *The Computer Games Journal*, 8(3-4):199–214, 2019.

47 K. Collins, and B. Kapralos. Pseudo-haptics: A review of leveraging cross-modal perception in virtual environments. *The Senses and Society*, 14(3):313-329, 2019. (**2024 IF: 1.5**)

48 **Z. Khan**, and B. Kapralos. A low-fidelity serious game for medical-based cultural competence education. *Health Informatics Journal*, 25(3):632–648, 2019. (**2024 IF: 2.3**).

49 **M. Melaisi**, **D. Rojas**, B. Kapralos, A. Uribe-Quevedo, and K. Collins. Multimodal interaction of contextual and non-contextual sound and haptics in virtual simulations. *Informatics*, *5*(4), Article 43, 2018. https://doi.org/10.3390/informatics5040043. (**2024 IF: 2.8**)

50 **R. Shewaga**, <u>A. Uribe-Quevedo</u>, B. Kapralos, and F. Alam. A comparison of seated and room-scale virtual reality in a serious game for epidural preparation. *IEEE Transactions on Emerging Topics in Computing*, Special issue on *Innovation in Technologies for Educational Computing*, 8(1):218 – 232, 2020. (**2024 IF: 5.3**).

51 **M. Nguyen**, <u>A. Uribe-Quevedo</u>, B. Kapralos, M. Jenkin, K. Kanev, and N. Jaimes. An experimental training support framework for eye fundus examination skill development. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization,*7(1):26-36, 2019. (**2024 IF: 1.3**)

52 **S. Valdivia**, **R. Blanco**, A. Uribe-Quevedo, **L. Penuela**, **D. Rojas** and B. Kapralos. Development and evaluation of two posture tracking user interfaces for occupational health care. *Advances in Mechanical Engineering,* 10(6):1-12, 2018. (**2024 IF: 2.0**).

53 **R. Shewaga**, <u>A. Uribe-Quevedo</u>, B. Kapralos, K. Lee, and F. Alam. A serious game for anesthesia-based crisis resource management training. *ACM Computers in Entertainment*, Special issue on *Deep Learning, Ubiquitous and Toy Computing,* 16(2):Article 6, 2018.

54 **Z. Khan**, **D. Rojas**, B. Kapralos, L. Grierson, and A. Dubrowski. Using a social educational network to facilitate peer-feedback for a virtual simulation. *ACM Computers in Entertainment*, Special issue on *Deep Learning, Ubiquitous and Toy Computing,* 16(2):Article 5, 2018.

55 **A. Welsher**, **D. Rojas**, **Z. Khan**, L. Vanderbeek, B. Kapralos and L. E. M. Grierson. The flexible application of observational practice and educational networking across distributed medical education contexts. *Simulation in Healthcare,* 13(1):3-10, 2018. (**2024 IF: 1.7**).

56 **J. H. Cheung**, J. Koh, K. MacKinnon, C. Brett, D. J. Bägli, B. Kapralos, and A. Dubrowski. Web-based preparation reduces time to competency for simulation-based training in central venous catheterization – the role of observational practice and collaboration. *Simulation in Healthcare*, 11(5):316-322. (**2024 IF: 1.7**).

57 **M. Nguyen**, **M. Melaisi**, **B. Cowan**, <u>A. Uribe-Quevedo</u>, and B. Kapralos. Low-end haptic devices for knee bone drilling in a serious game. *World Journal of Science, Technology and Sustainable Development*, Special issue on *Gamification, Serious Games, Simulations, and Immersive Learning Environments in Knowledge Management Initiatives*, 14(2/3):241-253, 2017.

58 **M. Tawadrous**, **D. Rojas**, B. Kapralos, A. Hogue, and A. Dubrowski. The effects of stereoscopic 3D on knowledge retention within a serious gaming environment. *Multimedia Tools and Applications,* 76:7301–7319, 2017. (**2022 IF: 3.6**).

59 B. Kapralos, K. Collins, and <u>A. Uribe-Quevedo</u>. The senses and virtual environments. *The Senses and Society*, 12(1): 69–75, 2017. (**2024 IF: 1.5**)

60 R. P Barneva, K. Kanev, B. Kapralos, M. Jenkin, and B. Brimkov. Integrating technology-enhanced collaborative surfaces and gamification for the next generation classroom. *Journal of Educational Technology Systems*, 45(3):309–325, 2017.

61 **J. Lam**, B. Kapralos, K. Kanev, K. Collins, A. Hogue, and M. Jenkin. Sound localization on a horizontal surface: Virtual and real sound localization. *Virtual Reality*, Special Issue on *Spatial Sound in Virtual and Augmented Reality*, 19(3):213-222, 2015. (**2024 IF: 5.0**).

62 **B. Cowan**, **D. Rojas**, B. Kapralos, F. Moussa, and A. Dubrowski. Effects of sound on visual realism perception and task performance. *Visual Computer* 31(9): 1207-1216, 2015. (**2024 IF: 2.9**).

63 B. Kapralos, S. Fisher, J. Clarkson, and R. van Oostveen. A course on serious game design and development using an online problem-based learning approach. *Interactive Technology and Smart Education*, 12(2):116-136, 2015. (**2024 IF: 5.6**).

64 **F. M. Williams-Bell**, B. Kapralos, A. Hogue, B. Murphy, and E. J. Weckman. Using serious games and virtual simulation for training in the fire service: A review. *Fire Technology*, 51(3):553–584, 2015. (**2024 IF: 2.4**).

65 N. Gershon, S. Mann, and B. Kapralos. Games, entertainment, and media for life, health, and community. *IEEE Consumer Electronics Magazine*, July 2015, pp. 67-72. (**2024 IF: 4.1**)

66 **J. Lam**, B. Kapralos, K. Collins, A. Hogue, K. Kanev, and M. Jenkin. Sound localization on table-top computers: A comparison of two amplitude panning methods. *ACM Computers in Entertainment,* 12(2):Article 12, 2014.

67 K. Collins and B. Kapralos. Sound design for interactive media: Introducing students to sound. *Journal of Sonic Studies* 6(1), 2014.

68 **D. Rojas**, B. Kapralos, A. Hogue, K. Collins, L. Nacke, S. Cristancho, C. Conati, and A. Dubrowski. The effect of sound on visual fidelity perception in stereoscopic 3-D. *IEEE Transactions on System Man and Cybernetics part B,* 43(6): 1572 – 1583, 2015. (**2024 IF: 8.6**)

69 F. Bellotti, B. Kapralos, K. Lee, P. Moreno-Ger, and R. Berta. Assessment in and of serious games: An overview. *Advances in Human Computer Interaction*, Special Issue on *User Assessment in Serious Games and Technology-Enhanced Learning,* 2013(2013): Article ID 136864. (**2024 IF: 21.9**)

70 **M. Tawadrous**, S. Kevan, B. Kapralos, and A. Hogue. A serious game for incidence response education and training. *International Journal of Technology, Knowledge & Society,* 8(4):177-184, 2012.

71 L. R. Harris, R. Herpers, M. Jenkin, R. S. Allison, H. Jenkin, B. Kapralos, D. Scherfgen, and S. Felsner. The relative contributions of radial and laminar optic flow to the perception of linear self-motion. *Journal of Vision,* 12(10):Article 7, 2012. (**2024 IF: 2.3**)

72 L. E. M. Grierson, M. Barry, B. Kapralos, H. Carnahan, and A. Dubrowski. The role of collaborative interactivity in the observational practice of clinical skills. *Medical Education,* 46(4):409-416, 2012. (**2024 IF: 4.9**)

73 **B. Cowan**, and B. Kapralos. A real-time, GPU-based method to approximate acoustical reverberation effects. *Journal of Graphics, GPU, and Game Tools*, 15(4):210-215, 2011.

74 B. Kapralos, C. Johnston, K. Finney, and A. Dubrowski. A serious game for training health care providers in interprofessional care of critically-ill and chronic care patients. *International Journal of Emerging Trends in Web Intelligence*, Special Issue on *Ubiquitous and Collaborative Computing*, 39(4):273-281, 2011.

75 B. Kapralos, M. Hogan, A. Pribetic, and A. Dubrowski. Virtual simulations and serious games in a laptop-based university: Gauging faculty and student perceptions. *Interactive Technology and Smart Education*, 8(2):106-120, 2011.

76   A. Hogue, B. Kapralos, and F. Desjardins. The role of problem-based learning in IT. *Interactive Technology and Smart Education*, 8(2):120-134, 2011, 2011.

77   M. Hogan, B. Kapralos, S. Cristancho, K. Finney, and A. Dubrowski. Bringing community health nursing to life with serious games. *International Journal of Nursing Education Scholarship,* 8(1), Article 8, 2011. (**2024 IF: 1.1**)

78   **B. Cowan**, **H. Sabri**, B. Kapralos, M. Porte, D. Backstein, S. Cristancho, and A. Dubrowski. A serious game for total knee arthroplasty procedure education and training. *Journal of Cybertherapy and Rehabilitation*, 3(3):285-298, 2010.

79   K. Collins, B. Kapralos, and K. Kanev. Smart table computer interaction interfaces with integrated sound. *Journal of Three Dimensional Images*, 24(3):58-67, 2010.

80   **B. Cowan**, and B. Kapralos. GPU-based real-time acoustical occlusion modeling. *Virtual Reality*, 14(3):183-196, 2010. (**2024 IF: 5.0**)

81   **B. Cowan**, and B. Kapralos. GPU-based one-dimensional convolution for real-time spatial sound generation. *Loading… Feature Issue: FuturePlay 2008 Edition*. 3(9), 2009.

82   B. Kapralos, M. Jenkin and E. Milios. Sonel mapping: A probabilistic acoustical modeling method. *Building Acoustics*, 15(4):289-313, 2008. (**2024 IF: 2.3**)

83   B. Kapralos, M. Jenkin, and E. Milios. Virtual audio systems. *Presence: Teleoperators and Virtual Environments*, 17(6):527-549, 2008. (**2024 IF: 1.4**)

84   B. Kapralos, M. Jenkin and E. Milios. Audio-visual localization of multiple speakers in a video teleconferencing setting. *International Journal of Imaging Systems and Technology*, 13(1):95–105, 2003. (**2024 IF: 2.5**)

85   E. Milios, B. Kapralos, A. Kopinska and S. Stergiopoulos. Sonfication of range information for 3D space perception. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 11(4):416–421, 2003. (**2024 IF: 5.2**)

Refereed Book Chapters

1   **G. Bruno**, **S. Abdo**, B. Kapralos, and B. Kapralos. Telehealth: A game changer in health professions education and patient care around the world. In In C. Lim, A. Vaidya, N. Jain, M. N. Favorskaya, and L. C. Jain (Eds.), *Advances in Intelligent Healthcare Delivery and Management, Intelligent Systems Reference Library*, Springer, Cham., Ch. 3, pp. 49-67, 2024.

2   KC. Collins, and B. Kapralos. Auditory reality and virtuality: Is space the final audio frontier for games? In W. Gibbons and M. Grimshaw-Aagaard (Eds.), *Oxford Handbook of Video Game Music and Sound*, Oxford University Press, New York, NY, USA, Ch. 8, pp. 847–860, 2024.

3   **G. Gaudi**, B. Kapralos, K. Collins, and A. Quvedo. Affective computing: An introduction to the detection, measurement, and current applications. In M. Virvou, G.A. Tsihrintzis, L. Tsoukalas and L.C. Jain (Eds.), *Advances in Artificial Intelligence-based Technologies -- Selected Papers in Honour of Professor Nikolaos G. Bourbakis − Vol. 1*, pp. 25-43, 2021.

4   **M. Chan**, A. Uribe-Quevedo, B. Kapralos, M. Jenkin, K. Kanev and N. Jaimes. A review of virtual reality-based eye examination simulators. In A. L. Brooks, S. Branham, B. Kapralos, A. Nakajima, J. Tyerman, and l. Jain (Eds.). *Recent Advances in Technologies for Inclusive Well-Being: Virtual Patients, Gamification and Simulation,* vol 196. Springer-Verlag, Intelligent Systems Reference Library, Germany , pp. 83-102, 2021.

5   B. Kapralos and maxSIMhealth Group. An interconnected collective of manufacturing, design, and simulation labs to advance medical simulation training. In A. L. Brooks, S. Branham, B. Kapralos, A. Nakajima, J. Tyerman, and l. Jain (Eds.). *Recent Advances in Technologies for Inclusive Well-Being: Virtual Patients, Gamification and Simulation,* vol 196, Springer-Verlag, Intelligent Systems Reference Library, Germany, pp. 141-176, 2021.

6   **S. N. Stahlke**, **J. D. Bellyk**, **O. R. Meier**, P. Mirza-Babaei and B. Kapralos. In A. L. Brooks, S. Branham, B. Kapralos, A. Nakajima, J. Tyerman, and l. Jain (Eds.). *Recent Advances in Technologies for Inclusive Well-Being: Virtual Patients, Gamification and Simulation,* vol 196. Springer-Verlag, Intelligent Systems Reference Library, Germany, pp. 523-536, 2021.

7   **F. Da Rocha Tomé Filho**, B. Kapralos, and P. Mirza-Babaei. Exploring current board games' accessibility efforts for persons with visual impairment. In A. L. Brooks, S. Branham, B. Kapralos, A. Nakajima, J. Tyerman, and l. Jain (Eds.). Recent Advances in Technologies for Inclusive Well-Being: Virtual Patients, Gamification and Simulation. Springer-Verlag, Intelligent Systems Reference Library, Germany, pp. 487–501, 2021.

8   B. Kapralos, A. Uribe-Quevedo, and A. Dubrowski. Immersive technologies for medical education. In N. Lee (Ed.) *Encyclopedia of Computer Graphics and Games*, Springer International Publishing, 2017. DOI: https://doi.org/10.1007/978-3-319-08234-9_130-1.

9   **S. Ortiz-Padilla**, A. Uribe-Quevedo and B. Kapralos. Designing hand tracking exergames with virtual toys. In P. Hung (Ed.) *Computing in Smart Toys*, Springer International Series on Computer Entertainment and Media Technology, Ch. 4, 35-53, 2017.

10   B. Kapralos, F. Moussa, K. Collins, and A. Dubrowski. Levels of fidelity and multimodal interactions. In P. Wouters and H. van Oostendorp (Eds.) *Techniques to Improve the Effectiveness of Serious Games*, Springer Advances in Game-based Learning Book Series, Ch. 5, pp. 79-101, 2017.

11   A. Brooks, S. Branham, B. Kapralos, and L. Jain. An overview of recent advances in technologies of inclusive well-being. In A. Brooks, S. Branham, B. Kapralos, and L. Jain (Eds.) *Recent Advances in Technologies for Inclusive Well-Being: From Worn to Off-body Sensing, Virtual Worlds, and Games for Serious Applications*, Springer Intelligent Systems Series, Ch. 1, pp. 1-11, 2017.

12   **B. Cowan**, and B. Kapralos. An overview of serious game engines and frameworks. In A. Brooks, S. Branham, B. Kapralos, and L. Jain (Eds.) *Recent Advances in Technologies of Inclusive Well-Being: Wearables, Virtual Interactive Spaces (VIS)/Virtual Reality, Emotional Robots, Authoring tools, and Games (Serious/Gamification)*, Springer Intelligent Systems Reference Library Series, Ch. 2, pp. 15-38, 2017.

13   **A. Uribe-Quevedo**, and B. Kapralos. Shoulder rehabilitation exergaming. In A. Brooks, S. Branham, B. Kapralos, and L. Jain (Eds.) *Recent Advances in Technologies of Inclusive Well-Being: Wearables, Virtual Interactive Spaces (VIS)/Virtual Reality, Emotional Robots, Authoring tools, and Games (Serious/Gamification)*, Springer Intelligent Systems Reference Library Series, Ch. 6, pp. 105-125, 2017.

14   B. Kapralos, K. Kanev, and M. Jenkin. Advanced sound integration for toy-based computing. In P. C. K. Hung (Ed.) *Mobile Services for Toy Computing*, *Springer, International Series on Computer Entertainment and Media Technology,* Chapter 6, pp. 107-127, 2015.

15   K. Kanev, I. Oido, P. Hung, B. Kapralos, and M. Jenkin. Case study: Approaching the learning of kanji through augmented toys in Japan. In P. C. K. Hung (Ed.) *Mobile Services for Toy Computing*, *Springer, International Series on Computer Entertainment and Media Technology,* Chapter 9, pp. 175-192, 2015.

16   B. Kapralos, F. Moussa, and A. Dubrowski. An overview of virtual simulations and serious games for surgical education and training. In *Technologies of Inclusive Well-Being*. A. Brooks, S. Brahham, and L. Jain (Eds.), *Springer Series Studies in Computational Intelligence*, Heidelberg, Germany, Chapter 14, pp. 289-306, 2014.

17   S. de Ribaupierre, B. Kapralos, F. Haji, E. Stroulia, A. Dubrowski, and R. Eagleson. Healthcare training enhancement through virtual reality and serious games. In M. Ma, C. Lakhmi, L. Jain, and P. Anderson (Eds.), *Virtual, Augmented Reality and Serious Games for Healthcare 1*, *Springer-Verlag Berlin Heidelberg,* Chapter 2, pp. 9-27, 2014.

18   **P. Stuckless**, M. Hogan, and B. Kapralos. Virtual simulations and serious games in community health nursing education: A review of the literature. In M. Ma, C. Lakhmi, L. Jain, and P. Anderson (Eds.), *Virtual, Augmented Reality and Serious Games for Healthcare 1*, *Springer-Verlag Berlin Heidelberg,* Chapter 7, pp. 145-158, 2014.

19   M. A. Garcia-Ruiz, A. Edwards, R. Aquino-Santos, J. Tashiro, and B. Kapralos. Towards usable collaborative virtual reality environments for promoting listening comprehension. In G. Vincenti, and J. Braman (Eds.) *Multi-User Virtual environments for the Classroom: Practical Approaches to Teaching in Virtual Worlds*, Chapter 24, pp. 386-411.

20   M. A. Garcia-Ruiz, J. Tashiro, B. Kapralos, and M. Vargas Martin. Crouching tangents, hidden danger: Assessing developments of dangerous misconceptions within serious games for healthcare education. In S. Hai-Jew (Eds.) *Virtual Immersive and 3D Learning Spaces: Emerging Technologies and Trends,* Chapter 14, pp. 269-306.

Refereed Conference and Workshop Proceedings (Full and Short Papers)

1   **N. Halabi**, B. Kapralos, E. Peisachovich, P. Mirza-Babei, and A. Dubrowski. Examining audio-based pseudo-haptics for enhancing mid-air interactions in VR. In *Proceedings of 22nd International Conference on Mobile Learning* (ML 2026), March 7-9, 2025, Zagreb, Croatia, pp. 1-6.

2   **S. Jamaleddine**, B. Kapralos, and A. Dubrowski. Toward an integrated pedagogical–accessibility design framework for smartphone-based augmented reality simulations in physics mLearning: A scoping review protocol and doctoral research trajectory. In *Proceedings of 22nd International Conference on Mobile Learning* (ML 2026), March 7-9, 2025, Zagreb, Croatia, pp. 1-6.

3   B. Kapralos and "CSCI 6520 Group". A graduate course on immersive virtual learning environments and immersive technologies. In *Proceedings of the IEEE Sixteenth International Conference on Information, Intelligence, Systems and Applications* (IISA 2025), July 10-12, 2025, Lesbos, Greece, pp. 1-8.

4   R. Wahid, **C. Craven**, **D. Romanoff**, B. Kapralos, and D. Chandross. Developing 'Dr. Calm': An AI-driven chatbot for university student mental health support. In *Proceedings of the IEEE Sixteenth International Conference on Information, Intelligence, Systems and Applications* (IISA 2025), July 10-12, 2025, Lesbos, Greece, pp. 1-4.

5   B. Kapralos. An overview of a course on audio for games and interactive media. In *Proceedings of the 25th International Conference on Digital Signal Processing (DSP 2025)*, June 25-27, 2025, Messinia, Greece.

6   **A. Torres, S. Abdo**, B. Kapralos, V. Bhat, and A. Dubrowski. From gamification to virtual reality: The evolution of the gamified education networking learning management system through design-based research in simulation-based education. In *Proceedings of the International Conference on eXtended Reality* (*XR Salento*), June 17-20, 2025, Lecce, Italy, pp. 1-8.

7   **C. Craven, A. Torres**, B. Kapralos, D. Chandross, and A. Dubrowski. The development of a no-code VR authoring platform for post-secondary educators. In *Proceedings of the International Conference on eXtended Reality* (*XR Salento*), June 17-20, 2025, Lecce, Italy.

8   **S. Abdo**, B. Kapralos, KC Collins, and A. Dubrowski. Assessing the impact of visual and auditory perspectives on performance and pseudo-haptics in a virtual drilling task. In proceedings of the *4th IEEE VR 2025 Workshop on 3D Reconstruction, Digital Twinning, and Simulation for Virtual Experiences* (a workshop as part of the *IEEE VR 2025* conference), Saint-Malo, France, March 8-12, 2025, pp. 1-3.

9   **K. Wood**, L. Penuela, A. Uribe-Quevedo, S. Perera, and B. Kapralos. Physiologically-driven audiovisual changes in virtual reality radiation source location. In *Proceedings of the 12th International Conference on Serious Games and Applications for Health* (SeGAH 24), August 7-9, 2024, Madeira, Portugal, pp. 1-8.

10 **T. Gaudi**, B. Kapralos, and A. Quevedo. Structural and functional fidelity of virtual humans in immersive virtual learning environments. In *Proceedings of the IEEE Gaming, Entertainment and Media* (GEM 2024) Conference, June 5-7, 2024, Turin, Italy, pp. 1-4.

11 **G. Hollender, N. Graham, C. Culver,** E. Peisachovich, B. Kapralos, E. Sombilon, and A. Dubrowski. Testing AREduX with HCPs and caregivers of people living with dementia: A work-in-progress. In *Proceedings of the IEEE Gaming, Entertainment and Media* (GEM 2024) Conference, June 5-7, 2024, Turin, Italy, pp. 1-4.

12 E. Peisachovich, B. Kapralos, **G. Hollaender, C. Culver**, and A. Dubrowski. Teaching empathy to healthcare providers and caregivers of persons living with dementia using augmented reality. In *Proceedings of the 8th International Technology, Education and Development Conference*, March 4-6, 2024, Valencia, Spain, pp. 7781-7784

13 **C. Culver, G. Hollender, S. Karimi**, E. Peisachovich, B. Kapralos, D. Sinclair, C. Da Silva, and A. Dubrowski. AREduX augmented reality experience and experiential education medium to teach empathy to healthcare providers and caregivers of persons living with dementia. In *Proceedings of the IEEE Games Entertainment and Media (GEM) Conference*. November 19-22, 2023, Barbados, pp. 1-6.

14 C. Da Silva, **A. Torres**, B. Kapralos, E. Peisachovich, C. Anyinam, S. Coffey, L. Graham, A. Dubrowski. International educated nurses' co-design of a virtual serious game, In *Proceedings of the 15th International Conference on Education and New Learning Technologies*, July, 3-5 2023, Palma, Spain, pp. 5330-5336.

15 **R. Savaglio, J. Brown**, B. Kapralos, B. Franco Arellano, A. LeSage, and J. Arcand. Serious game design and development: Some recommendations. In *Proceedings of the Fourteenth IEEE International Conference on Information, Intelligence, Systems and Applications* (IISA 2023), July 10-12, 2023, Volos, Greece, pp. 1-8.

16 **F. Stancati, A. Riitano**, B. Kapralos, D. Button, A. Dubrowski, and F. Lamberti. Development of an intelligent chatbot for an intraosseous access serious game (WIP Paper). In *Proceedings of the Fourteenth IEEE International Conference on Information, Intelligence, Systems and Applications* (IISA 2023), July 10-12, 2023, Volos, Greece, pp. 1-4.

17 **B. Nguyen, A. Torres**, A. Rueda, W. Sim, D. M. Campbell, W. Lou, B. Kapralos, L. Beavers, E. Peter, A. Dubrowski, V. Bhat, and S. Krishnan. Digital interventions to reduce moral distress among frontline health care providers: Analysis of self-perceived stress. In *Proceedings of the 45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, July 24-28, 2023, Sydney, Australia, pp. 1-4.

18 **A. Torres, K. Clarke, M. Pereirapeixoto**, B. Kapralos, and A. Dubrowski. Mobile learning and simulation for the development of hands-on clinical skills. In *Proceedings of the 19th International Conference Mobile Learning*. March 11-13, 2023, Lisbon, Portugal.

19 **C. , G. Hollender, S Karimi**, E. Peisachovich, B. Kapralos, C. Da Silva, and A. Dubrowski. AREduX augmented reality experience and experiential education mediumto teach empathy to healthcare providers and caregivers of persons living with dementia. Proceedings of the 20th International Conference on Remote Engineering and Virtual Instrumentation (REV 2023), pp. 1-8, March1-3, 2023, Thessaloniki, Greece.

20 **A. Torres, M. Sivanathan, P. Mutombo, J. Micallef, S. Wahab, S. Abdo, V. Matheou, K. Wilcocks, L. Yanguez Franco**, B. Kapralos, and A. Dubrowski. The gamified educational network learning management system for medical education. In *Proceedings of the 20th International Conference on Remote Engineering and Virtual Instrumentation* (REV2023), pp. 1-8, March1-3, 2023, Thessaloniki, Greece.

21 C. Da Silva, **A. Torres**, B. Kapralos, E. V. Peisachovich, and A. Dubrowski. International educated nurse-centered virtual serious game. In *Proceedings of the 13th International Conference on Information, Intelligence, Systems and Applications* (IISA 2022), July 18-20, 2022, Corfu, Greece, pp. 1-4.

22   A. Quevedo, B. Kapralos, D. R. Gualdron, A. Dubrowski, S. Perera, and F. Alam. Physical and physiological data for factoring user's uniqueness in immersive VR training. In *Proceedings of the Best Practices of Serious Games Testing Workshop, IEEE/ACIS 21st International Fall Conference on Computer and Information Science*, October 13-15, 2021, Xi'an, China.

23   **F. Gelsomini**, E. Tomasuolo, M. Roccaforte, P. C. K. Hung, B. Kapralos, A. Dubrowski, A. Quevedo, K. Kanev, M. Hosoda, H. Mimura. Communicating with humans and robots: A motion tracking data glove for enhanced support of deafblind. In *Proceedings of the International Conference on System Sciences* (HICSS), Hawaii, USA, January 4-7, 2022.

24   **Q. Daggett**, B. Kapralos, C. Baker-Barill, T. Burnet-Greene, M. van Zandvoort. Remote testing and evaluation of a serious game for education about vaping. In *Proceedings of the 14th International Conference on Interactive Mobile Communication Technologies and Learning* (IMCL 2021), November 4-5, 2021, Thessaloniki, Greece.

25   **G. Ning**, **Q. Daggett**, **A. Perivolaris**, B. Kapralos, A. Quevedo, KC Collins, K. Kanev, and A. Dubrowski. Rethinking audio-haptic perceptual immersion from in-person to remote testing during COVID-19, In *Proceedings of the 14th International Conference on Interactive Mobile Communication Technologies and Learning* (IMCL 2021), November 4-5, 2021, Thessaloniki, Greece, pp. 1-9.

26   **K. Wood**, L. M. P. Calderon, A. Quevedo, B. Kapralos, and S. Perera. Virtual reality and the use of physiological measures: A literature analysis. In *Proceedings of the 23rd Symposium of Virtual and Augmented Reality* (SVR 2021), virtual conference, October 18-21, pp. 1-10, 2021.

27   M. Garcia-Ruiz, B. Kapralos, and G. Rebolledo-Mendez. Towards effective odor diffusion with fuzzy logic in an olfactory interface for a serious game. In *Proceedings of the 23rd International Conference on Human-Computer Interaction*, July 24-29, 2021, Washington, DC., USA, pp. 1-14.

28   **R. Savaglio**, **J. M. Brownz**, B. Kapralos, A. LeSage, B. F. Arellano, J. Hughes and J. Arcand. Enhancing the accessibility of serious games: A case study with Foodbot Factory. In *Proceedings of the Twelfth International Conference on Information, Intelligence, Systems and Applications* (IISA 2021), 12-14 July 2021, Crete, Greece, pp. 1-4.

29   **A. Torres**, B. Kapralos, C. Da Silva, E. Hava Peisachovich, and A. Dubrowski. A scenario editor to create and modify virtual simulations and serious games for mental health education. In *Proceedings of the Twelfth International Conference on Information, Intelligence, Systems and Applications* (IISA 2021), 12-14 July 2021, Crete, Greece, pp. 1-4.

30   A. Dubrowski, B. Kapralos, E. Patocskai, **A. Torres**, **A. Arutiunian**, **S. Wahab**, **T. Weber**, and **M. Mnaymneh**. Virtual health experiential learning platform (HELP) - utilizing gamified educational networking and three-dimensional printing for distance training. In *Proceedings of The Learner: Twenty-eighth International Conference on Learning*, July 9-11, 2021, Krakow, Poland.

31   **S. Matthews**, **K. Wood**, A. Quevedo, B. Kapralos, A. Dubrowski, N. Jaimes, F. Alam, and D. Rojas. A preliminary eye tracking and HMD orientation comparison to determine focus on a cardiac auscultation training environment. In *Proceedings of the 7th International Conference of the Immersive Learning Research Network* (iLRN 2021), May 17 – June 10, 2021, Online conference.

32   **K. Wilcocks**, **A. Perivolaris**, B. Kapralos, A. Quevedo, M. Jenkin, K. Kanev, H. Mimura, M. Hosoda, A. Fahad, and A. Dubrowski. A novel data glove for psychomotor-based virtual medical training. In *Proceedings of the IEEE Global Engineering Education Conference* (*EDUCON 2021*), April 21-23, 2021, Vienna Austria.

33   **F. Gelsomini**, P. C. K, Hung, B. Kapralos, A. Uribe-Quevedo, M. Jenkin, A. Tokuhiro, K. Kanev, M. Hosoda, H. Mimura. Specialized CNT-based sensor framework for advanced motion tracking. In *Proceedings of the Hawaii International Conference on System Sciences* (HICSS), January 5-8, 2021.

34   **T. Ortegon-Sarmiento**, **M. Vargas-Orjuela**, A. Uribe-Quevedo, D. Rojas, B. Kapralos, N. Jaimes, and B. Perez-Gutierrez. Developing stethoscope replicas for cardiac auscultation training: A comparison between virtual reality, mobile, and makerspace. In *Proceedings of the Games and Learning Alliance Conference*, December 9-10, 2020, Online Edition.

35   **J. Yang**, **M. Chan**, A. Uribe-Quevedo, B. Kapralos, N. Jaimes, and A. Dubrowski. Prototyping virtual reality interactions in medical simulation employing speech recognition. *In Proceedings of the Symposium on Virtual and Augmented Reality* (SVR), November 7-10, 2020, Porto de Galinhas, Brazil.

36   C. Cancelliere, A. Dubrowski, B. Kapralos, S. Mior, P. Côté, B. Muirhead, and R. Dubrowski. Tele-Sim MSK for musculoskeletal rehabilitation professionals. In *Proceedings of the 14th International Multi-Conference on Society, Cybernetics and Informatics* (IMSCI 2020), September 13-16, 2020 – Virtual Conference, pp.139-143.

37   **B. Cowan**, B. Kapralos and K. Collins. Realistic auditory artificial intelligence: Spatial sound modelling to provide NPCs with sound perception. In *Proceedings of the 3rd Audio Engineering Society International Conference on Audio for Virtual and Augmented Reality*, August 17-19, 2020, Redmond, WA, USA.

38   **M. Chan**, A. Uribe Quevedo, B. Kapralos, N. Jaimes, M. Jenkin and K. Kanev. A preliminary usability comparison of augmented and virtual reality user interactions for direct ophthalmoscopy. In *Proceedings of the 8th IEEE International Conference on Serious Games and Applications for Health (SEGAH) 2020*, August 12-14, Vancouver, Canada.

39 B. Perez-Gutierrez, A. Uribe Quevedo and B. Kapralos. A joint international (Colombia-Canada) graduate course on simulation, VR/AR, and serious games. In *Proceedings of the 8th IEEE International Conference on Serious Games and Applications for Health (SEGAH) 2020*, August 12-14, Vancouver, Canada.

40 S. Cinieri, B. Kapralos, A. Uribe-Quevedo, and F. Lamberti. Eye Tracking and Speech Driven Human-Avatar Emotion-Based Communication. In *Proceedings of the 8th IEEE International Conference on Serious Games and Applications for Health (SEGAH) 2020*, August 12-14, Vancouver, Canada.

41 T. Gaudi, B. Kapralos, A. Uribe-Quevedo, G. Hall, and D. Parvinchi. Autism serious game framework (ASGF) for developing games for children with autism. In *Proceedings of the 2019 International Conference on Interactive Mobile Communication, Technologies and Learning*, Oct. 31 – Nov. 1, 2019, Thessaloniki, Greece, pp. 1-10.

42 A. B. B. Torres, B. Kapralos, A. Uribe-Quevedo, E. Zea, and A. Dubrowski. A gamified educational network for collaborative learning. In *Proceedings of the 2019 International Conference on Interactive Mobile Communication, Technologies and Learning*, Oct. 31 – Nov. 1, 2019, Thessaloniki, Greece, pp. 1-10.

43 M. Beig, B. Kapralos, K. Collins, and P. Mirza-Babaei. G-SpAR: GPU-based voxel graph pathfinding for spatial audio rendering in games and VR. In *Proceedings of the IEEE Conference on Games*, August 20-23, 2019, London, UK, pp. 1-8.

44 F. da Rocha Tome Filho, P. Mirza-Babaei, B. Kapralos, and G. Moreira Mendonca Jr. Let's play together: Adaptation guidelines of board games for players with visual impairment. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems*, May 4-9, 2019, Glasgow, UK, pp. 1-5, Paper No. 631,

45 D. Acosta, D. Gu, A. Uribe-Quevedo, K. Kanev, M. Jenkin, B. Kapralos, and N. Jaimes. Mobile e-Training tools for augmented reality eye fundus examination. In *Proceedings of the 12th International Conference on Interactive Mobile and Communication Technologies and Learning*, October 11-12, 2018, Hamilton, Canada, pp. 83-92.

46 L. Micelli, D. Acosta, A. Uribe-Quevedo, F. Lamberti, and B. Kapralos. Extending upper limb user interactions in AR, VR and MR headsets employing a custom-made wearable device. In *Proceedings of the International Conference on Information, Intelligence, Systems and Applications* (IISA 2018), July 23-25, Zakynthos, Greece, pp. 1-4. (Best Student Paper award).

47 S. Valdivia, R. Blanco, A. J. Uribe-Quevedo, L. M. P. Calderon, D. Rojas, and B. Kapralos. A spinal column exergame for occupational health purposes. In *Proceedings of the 2017 Games and Learning Alliance (GALA) International Conference*, December 5-7, 2017, Lisbon, Portugal.

48 T. Ortegon, M. Vargas, A. Uribe-Quevedo, B. Perez-Gutierrez, D. Rojas, and B. Kapralos. Development of a 3D printed stethoscope for virtual cardiac auscultation examination training. In *Proceedings of the IEEE NIH 2017 Special Topics Conference on Healthcare Innovations and Point-of-Care Technologies*. November 6-8, 2017, Bethesda, MD, USA.

49 F. Gelsomini, K. Kanev, P. Hung, B. Kapralos, M. Jenkin, R. Barneva, and M. Vienna. BYOD collaborative kanji learning in tangible augmented reality settings. *16th International Conference on Global Research and Education,* September 25-28, 2017, Iasi, Romania. Appears in *Recent Advances in Technology Research and Education,* Chapter 39*, Springer Lecture Notes in Computer Science,* 2018, pp. 315-325*.

50 S. Valdivia, R. Blanco. A. Uribe-Quevedo, L. Penuela, D. Rojas, B. Kapralos. Mobile app prototype to showcase proper lumbar-spine exercising. In Proceedings of the IEEE 6th Global Conference on Consumer Electronics (GCCE), October 24-27, 2017, Nagoya, Japan, pp. 1-4.

51 K. Wilcocks, N. Halabi, P. Kartick, A. Uribe-Quevedo, C. Chow, and B. Kapralos. A virtual cardiac catheterization laboratory for patient education: The angiogram procedure. In *Proceedings of the 8th IEEE International Conference on Information, Intelligence, Systems and Applications* (IISA), August 28-30, 2017, Larnaca, Cyprus, pp. 1-4.

52 D. Moreno, M. Melaisi, S. MacDonald, A. Uribe-Quevedo, B. Kapralos, and M. V. Martin. Examining the effects of sound on a haptic-based virtual drilling scenario with a brain computer interface. In *Proceedings of the 8th IEEE International Conference on Information, Intelligence, Systems and Applications* (IISA), August 28-30, 2017, Larnaca, Cyprus, pp. 1-4.

53 M. Melaisi, M. Nguyen, A. Uribe-Quevedo, and B. Kapralos. The effect of sound on haptic fidelity perception. In *Proceedings of the IEEE Global Engineering Education Conference* (EDUCON) 2017, April 25-28, 2017, Athens, Greece, pp. 709-712.

54 S. Prada, A. Uribe-Quevedo, N. Jaimes, and B. Kapralos. Development of a cardiac auscultation serious game app. In *Proceedings of the 11th Annual International Technology, Education and Development Conference* (INTED2017), March 6-8, 2017, Valencia, Spain, pp. 7334-7340.

55 D. Acosta, A. Uribe-Quevedo, N. Jaimes, and B. Kapralos. Development of a smartphone augmented reality eye examination tool. In *Proceedings of the 11th Annual International Technology, Education and Development Conference* (INTED2017), March 6-8, 2017, Valencia, Spain, pp. 7347-7351.

56 N. Moustakas, A. Floros, and B. Kapralos. An augmented reality audio live network for live electroacoustic music concerts. In *Proceedings of the Audio Engineering Society International Conference on Audio for Virtual and Augmented Reality*, Los Angeles, CA, USA, September 30 – October 1, 2016, pp. 1-7.

57   A. Uribe-Quevedo, D. Rojas, and B. Kapralos. Customization of a low-end haptic device to add rotational DOF for virtual cardiac auscultation training In *Proceedings of Information, Intelligence, Systems and Applications* (IISA 2016), Chalkidiki, Greece, July 13-15, 2016, pp. 1-6.

58   B. Cullen, K. Collins, A. Hogue, and B. Kapralos. Sound and stereoscopic 3D: Examining the effects of sound on depth perception in stereoscopic 3D. In *Proceedings of Information, Intelligence, Systems and Applications* (IISA 2016), Chalkidiki, Greece, July 13-15, 2016, pp. 1-6. **Best student paper award**.

59   A. Uribe-Quevedo, S. Ortiz, D. Rojas, and B. Kapralos Hand tracking as a tool to quantify carpal tunnel syndrome preventive exercises. In *Proceedings of Information, Intelligence, Systems and Applications* (IISA 2016), Chalkidiki, Greece, July 13-15, 2016, pp. 1-5.

60   D. Rojas, M. Vargas Martin, and B. Kapralos. Evaluating a sound-enhanced intrusion detection system to identify network congestion. In *Proceedings of the 24th IEEE Mediterranean Conference on Control and Automation*, Athens, Greece, June 21-24, 2016, pp. 1325-1330.

61   R. Codd-Downey, R. Shewaga, A. Uribe-Quevedo, B. Kapralos, K. Kanev, and M. Jenkin. A novel tabletop and tablet-based display system to support learner-centric ophthalmic anatomy education. *3rd International Conference on Augmented Reality, Virtual Reality and Computer Graphics* (SALENTO AVR 2016), Otranto, Lecce, Italy, June 15-18, 2016, Appears in *Lecture Notes in Computer Science*, 9769:3-12.

62   D. Rojas, B. Kapralos, and A. Dubrowski. Improving the acquisition of basic technical surgical skills with VR-based simulation coupled with computer-based video instruction. Medicine Meets Virtual Reality, Los Angeles, CA, USA, April 7-9, 2016. Appears in *Studies in Health Technology and Informatics*, 220:323-328, 2016.

63   D. Rojas, B. Kapralos, and A. Dubrowski. The role of game elements in online learning within health professions education. *Medicine Meets Virtual Reality*, Los Angeles, CA, USA, April 7-9, 2016. Appears in *Studies in Health Technology and Informatics*, 220:329-334, 2016.

64   C. Soto, M. Vargas, A. Uribe Quevedo, and B. Kapralos. AR Stereoscopic 3D examination app. *9th IEEE International Conference on Interactive Mobile and Communication Technologies and Learning 2015*, Thessaloniki, Greece, November 19-20, 2015, pp. 1-2.

65   D. Pajwani, B. J. Drenikow, E. Cioca, C. M. Chodan, T. Fong, S. Li, B. Kapralos, and S. Dunn. A mobile app for emergency contraception awareness and education. *9th IEEE International Conference on Interactive Mobile and Communication Technologies and Learning 2015*, Thessaloniki, Greece, November 19-20, 2015, pp. 66-68.

66   R. Shewaga, D. Rojas, B. Kapralos, and J. Brennan. Alpha testing of the Rapid Recovery kayaking-based exergame. In *Proceedings of the IEEE Games Entertainment and Media (GEM) 2015 Conference*, Toronto, Canada, October 14-16, 2015, pp. 1-4.

67   B. Cowan, S. Khattak, A. Hogue, and B. Kapralos. Screen space point sampled shadows. In *Proceedings of the IEEE Games Entertainment and Media (GEM) 2015 Conference*, Toronto, Canada, October 14-16, 2015, pp. 1-7.

68   B. Cowan, B. Kapralos, F. Moussa, and A. Dubrowski. The serious gaming surgical cognitive education and training framework and the SKY Script language. In *Proceedings of the Workshop on VRtools for Education/Training* (VRtoolsEd 2015), *Eighth EAI International Conference on Simulation Tools and Techniques*, Athens, Greece, August 24-26, 2015, pp. 308-310.

69   A. Dubrowski, B. Kapralos, K. Kanev, and M. Jenkin. Interprofessional critical care training: Interactive virtual learning environments and simulations. In *Proceedings of The Sixth International Conference on Information, Intelligence, Systems and Applications* (IISA 2015), Corfu, Greece, July 6-8, 2015, pp. 1-5.

70   B. Cowan, and B. Kapralos. Interactive rate acoustical occlusion/diffraction modeling for 2D virtual environments and games. In *Proceedings of The Sixth International Conference on Information, Intelligence, Systems and Applications* (IISA 2015), Corfu, Greece, July 6-8, 2015, pp. 1-6.

71   Z. Khan, K. Maddeaux, and B. Kapralos. FYDLYTY: A low fidelity serious game for medical-based cultural competence education. In *Proceedings of the 7th International Conference on Intelligent Technologies for Interactive Entertainment*, June 10-12, 2015, Torino, Italy, pp. 195-199.

72   D. Rojas, B. Cowan, B. Kapralos, K. Collins, and A. Dubrowski. The effect of sound on visual quality perception and task completion time in a cel-shaded serious gaming virtual environment. In *Proceedings of the 7th IEEE International Workshop on Quality of Multimedia Experience*, Messenia, Greece, May 26-29 2015, pp. 1-6.

73   K. Collins, A. Hodge, B. Kapralos and R. Dockwray. Veemix: Integration of Musical User-Generated Content in Games. In *Proceedings of the Audio Engineering Society (AES) Audio for Games 2015*, London, UK, February 11-13 2015.

74   B. Schroeder, M. Kunanec, B. Kroese, O. Pollard, O. Sadoon, B. Kapralos, J. Brennan, E. Leach and J. Jenson. Rapid recovery: A kayaking-based exergame for shoulder rehabilitation and physical fitness. In *Proceedings of the IEEE Games Entertainment and Media (GEM) 2014*, Toronto, Ontario, Canada, October 22-24, 2014, pp. 1-4.

75   B. Cowan, and B. Kapralos. A survey of engines for serious games development. *The 14th IEEE International Conference on Advanced Learning Technologies (ICALT2014)*, Athens, Greece, July 7-10, 2014, pp. 662-664.

76   B. Kapralos, **R. Shewaga**, and **G. Ng**. Serious games and virtual simulations: Customizing the audio-visual interface. *Well-Being, Rehabilitation, and Healthcare: Serious Games, Alternative Realities, and Play Therapy* Parallel Session at the *6th International Conference on Virtual, Augmented and Mixed Reality, HCI International 2014*, Crete, Greece, June 22-27, 201. Appears in *Lecture Notes in Computer Science*, 8526:190-199. **Invited paper and presentation**.

77   **D. Rojas**, **B. Cowan**, B. Kapralos, K. Collins, and A. Dubrowski. The effect of contextual sound cues on visual fidelity perception*. Medicine Meets Virtual Reality* 2014, Manhattan Beach, CA, USA, February 20-22, 2014. Appears in *Studies in Health Technology and Informatics*,196:346-352, 2014.

78   **D. Rojas**, F. Haji, **R. Shewaga**, B. Kapralos, and A. Dubrowski. The impact of secondary-task type on the sensitivity of reaction-time based measurement of cognitive load for novices learning surgical skills using simulation. *Medicine Meets Virtual Reality* 2014, Manhattan Beach, CA, USA, February 20-22, 2014. Appears in *Studies in Health Technology and Informatics*,196:353-359, 2014.

79   **D. Rojas**, B. Kapralos, and A. Dubrowski. The missing piece in the gamification puzzle In *Proceedings of the First International Conference on Gameful Design, Research, and Applications (Gamification 2013)*, Stratford, Canada, October 2-4, 2013, pp. 135-138.

80   B. Kapralos, F. Haji, and A. Dubrowski. A crash course on serious games design and assessment: A case study. In *Proceedings of the IEEE Games Innovation Conference (IGIC) 2013*, Vancouver, Canada, September 23-25, 2013, pp. 105-109.

81   **B. Cowan**, and B. Kapralos. Spatial sound rendering for dynamic virtual environments. In *Proceedings of the 18th IEEE International Conference on Digital Signal Processing* (*DSP 2013*). Santorini, Greece, July 1-3, 2013, pp. 1-6.

82   **B. Cowan**, **D. Rojas**, B. Kapralos, K. Collins, and A. Dubrowski. Spatial sound and its effect on visual quality perception and task performance within a virtual environment. In *Proceedings of the 21st International Congress on Acoustics*, Montreal, Canada, June 2-7, 2013, pp. 1-7. **Invited paper**.

83   **J. H. Cheung**, J. Koh, K. Mackinnon, C. Brett, B. Kapralos, A. Dubrowski. The use of web-based learning for simulation-based training of central venous catheterization in novice learners. *Medicine Meets Virtual Reality 2013,* February 20-23, 2013, San Diego, CA, USA. Appears in *Studies in Health Technology and Informatics*, 174:71-74, 2013.

84   **B. Stanfield**, **C. Zerebecki, M. Tawadrous,** A. Hogue, B. Kapralos, and K. Collins. Impact of floating windows on the accuracy of depth perception in games. In *Proceedings of Stereoscopic Displays and Applications XXIV*, February 3-7, 2013, San Francisco, CA, USA, pp. 1-8.

85   **M. Tawadrous**, A. Hogue, B. Kapralos, and K. Collins. An interactive in-game approach to user adjustment of stereoscopic 3D settings. In *Proceedings of Stereoscopic Displays and Applications XXIV*, February 3-7, 2013, San Francisco, CA, USA, pp. 1-6.

86   **C. Zerebecki**, **B. Stanfield**, A. Hogue, B. Kapralos, and K. Collins. S3D depth-axis interaction for video games: performance and engagement. In *Proceedings of Stereoscopic Displays and Applications XXIV*, February 3-7, 2013, San Francisco, CA, USA, pp. 1-8.

87   **B. Cullen**, **D. Galperin**, K. Collins, A. Hogue, and B. Kapralos. The effects of 5.1 sound presentations on the perception of stereoscopic imagery in video games. In *Proceedings of Stereoscopic Displays and Applications XXIV*, February 3-7, 2013, San Francisco, CA, USA, pp. 1-13.

88   **B. Cullen**, **D. Galperin**, K. Collins, B. Kapralos, and A. Hogue. The effects of audio on depth perception in S3D games. *Audio Mostly* 2012, Corfu, Greece, September 26-28, 2012, pp. 32-39.

89   B. Kapralos. A course on the design and development of serious games and virtual simulations. In *Proceedings of the IEEE International Games Innovation Conference*. Rochester, NY, USA, September 7-9, 2012, pp. 83-86.

90   **A. DeChamplain**, **E. Rosendale**, **I. McCabe**, **M. Stephan**, **V. Cole**, and B. Kapralos. Blaze: A serious game for improving household fire safety awareness. In *Proceedings of the IEEE International Games Innovation Conference*. Rochester, USA, September 7-9, 2012, pp. 43-46.

91   K. Collins, and B. Kapralos. Beyond the screen: What we can learn about game design from audio-based games. In *Proceedings of the Computer Games Multimedia and Allied Technology (CGAT 2012) Conference*, Bali, Indonesia, May 7-8, 2012.

92   **D. Nakano**, **J. Lam**, B. Kapralos, K. Kanev, K. Collins, A. Hogue, and M. Jenkin. A framework for sound localization experiments and automation. In *Proceedings of the ACM Joint International Conference on Human-Centered Computer Environments (HCCE 2012)*. Hamamatsu, Japan, March 8-13, 2012, pp. 137-144.

93   **D. Rojas**, B. Kapralos, S. Cristancho, K. Collins, A. Hogue, C. Conati, and A. Dubrowski. Developing effective serious games: The effect of background sound on visual fidelity perception with varying texture resolution. *Medicine Meets Virtual Reality 19*, Newport Beach, CA, USA, February 9-11, 2012. Appears in *Studies in Health Technology and Informatics*,173:386-392, 2012.

94   **D. Rojas**, **J. H. Cheung**, B. Weber, B. Kapralos, H. Carnahan, and A. Dubrowski. An online practice and educational networking system for technical skills: learning experience in expert facilitated vs. independent learning communities.

Medicine Meets Virtual Reality 19, Newport Beach, CA, USA, February 9-11, 2012. Appears in *Studies in Health Technology and Informatics*, 173:393-397, 2012.

95 **J. H. Cheung**, **D. Rojas**, B. Weber, B. Kapralos, H. Carnahan, and A. Dubrowski. Evaluation of tensiometric assessment as a measure of skill degradation. *Medicine Meets Virtual Reality 19*, Newport Beach, CA, USA, February 9-11, 2012. Appears in *Studies in Health Technology and Informatics*, 173:97-101, 2012.

96 **C. Zerebecki**, **M. Tawadrous**, **B. Stanfield, D. Buckstein**, A. Hogue, and B. Kapralos. Interactive floating windows: a new technique for stereoscopic video games. In *Proceedings of the Stereoscopic Displays and Applications XXIII*, Burlingame, CA, USA, January 22-26, 2012, pp. 82882L-82882L-8.

97 A. Hogue, B. Kapralos, **C. Zerebecki**, **M. Tawadrous**, **B. Stanfield**, and U. Hogue. Stereoscopic 3D video games and their effects on engagement. In *Proceedings of the Stereoscopic Displays and Applications XXIII*, Burlingame, CA, USA, January 22-26, 2012, pp. 828816-828816-7.

98 P. Taillon, K. Collins, and B. Kapralos. Experimenting with a framework for networked mobile audio arrays. In *Proceedings of the Audio Engineering Society 44th Conference on Audio Networking*. San Diego, CA, USA, November 18-20, 2011, pp.1-9.

99 **B. Cowan**, **H. Sabri**, B. Kapralos, S. Cristancho, F. Moussa, and A. Dubrowski. SCETF: Serious game surgical cognitive education and training framework. In *Proceedings of the 3rd IEEE International Games Innovation Conference*, City of Orange, CA, USA, November 2-4, 2011, pp. 130-133.

100 **B. Cowan**, and B. Kapralos. GPU-based acoustical occlusion modeling with acoustical texture maps. In *Proceedings of ACM Audio Mostly*. Coimbra, Portugal, September 7-9, 2011, pp. 55-61.

101 B. Kapralos, S. Cristancho, M. Porte, D. Backstein, A. Monclou and A. Dubrowski. Serious games in the classroom: Gauging student perceptions. *Medicine Meets Virtual Reality 18,* Newport Beach, CA, USA, February 8-12, 2011. Appears in *Studies in Health Technology and Informatics*, 163:254-260, 2011.

102 **B. Cowan**, **H. Sabri**, B. Kapralos, F. Moussa, S. Cristancho, and A. Dubrowski. A serious game for off-pump coronary artery bypass surgery procedure training. *Medicine Meets Virtual Reality 18*, Newport Beach, CA, USA, February 8-12, 2011. Appears in *Studies in Health Technology and Informatics*, 163:147-149, 2011.

103 **B. Cowan**, and B. Kapralos. GPU-based acoustical diffraction modeling for complex virtual reality and gaming environments. In *Proceedings of the Audio Engineering Society 41st International Conference: Audio for Games*. London, UK, February 2-4, 2011.

104 K. Collins, B. Kapralos, **A. Hodge**, and A. Hogue. Audio air hockey: A pilot study in using audio-based games for the measurement of loudspeaker placement preferences for smart tables. In *Proceedings of the Audio Engineering Society 41st International Conference: Audio for Games*. London, UK, February 2-4, 2011, pp. 1-5.

105 A. Hogue, B. Kapralos, and T. Pierce. A serious game for collaborative intercultural business communication. In *Proceedings of the 13th ACM International Conference on Humans and Computers (HC 2010)*. Hamamatsu, Japan, December 8-10, 2010, pp. 15-21.

106 K. Collins, K. Kanev, and B. Kapralos. Not just a Game: Using games as methods of evaluation of usability and user experience in human-computer interaction design. In *Proceedings of the 13th ACM International Conference on Humans and Computers (HC 2010)*. Hamamatsu, Japan, December 8-10, 2010, pp. 5-10.

107 B. Kapralos, M. Hogan, C. Mallette, A. Wood, K. Finney, A. Hogue, and A. Dubrowski. Serious games for Interprofessional education for critical care response teams. In *Proceedings of the Group Awareness in Online Work, Learning, and Games Workshop* at *HCI 2010*. Abertay, Dundee, Scotland September 7, 2010, pp. 10-13.

108 **H. Sabri**, **B. Cowan**, B. Kapralos, F. Moussa, S. Cristancho, and A. Dubrowski. Off-pump coronary artery bypass surgery procedure training meets serious games. In *Proceedings of the International Symposium on Haptic Audio-Visual Environments and Games*. Phoenix, AZ. USA, October 16-17, 2010, pp. 123-127.

109 **J. Lam**, B. Kapralos, K. Collins, A. Hogue, and K. Kanev. Amplitude panning-based sound system for a horizontal surface computer: A user-based study. In *Proceedings of the International Symposium on Haptic Audio-Visual Environments and Games*. Phoenix, AZ. USA, October 16-17, 2010, pp. 1-5.

110 M. A. Garcia-Ruiz, M. Vargas Martin, B. Kapralos, J. Tashiro, and R. Acosta-Diaz. Best practices for applying sonification to support teaching and learning of network intrusion detection. In *Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA 2010).* Toronto, Canada, June 28 – July 2, 2010, pp. 752-757.

111 W. Shi, G. Lee, **J. Hinchley**, J. Corriveau, B. Kapralos, and A. Hogue. Using a virtual learning environment with highly interactive elements in Second Life to engage millennial students. *In Proceedings of the 2010 International Conference on e-Education, e-Business, e-Management and e-Learning (IC4E 2010)*. Sanya, China, January 22-24, 2010, pp. 255-259.

112 J. Macgregor, S. Meng, B. Kapralos, H. Carnahan, and A. Dubrowski. Internet mediated, peer-to-peer feedback for learning of patient transfer skills: Prototype development and testing. *World Conference on Educational Sciences*

(WCES) 2010. Istanbul, Turkey, February 4-8, 2010. Appears in *Procedia - Social and Behavioral Sciences* 2(2):1670-1674.

113 **H. Sabri**, **B. Cowan**, B. Kapralos, M. Porte, D. Backstein, and A. Dubrowski. Serious games for knee replacement surgery procedure education and training. In *Proceedings of the World Conference on Educational Sciences (WCES) 2010*. Istanbul, Turkey, February 4-8, 2010. Appears in *Procedia - Social and Behavioral Sciences* 2(2):3483-3488.

114 **C. Albuquerque**, **T. Brown**, B. Kapralos, M. Hogan, and A. Dubrowski. The use of virtual simulations in a laptop-based university. In *World Conference on Educational Sciences (WCES) 2010*. Istanbul, Turkey, February 4-8, 2010. Appears in *Procedia - Social and Behavioral Sciences* 2(2):1694-1698.

115 **A. Brown**, M. Vargas Martin, B. Kapralos, M. A. Garcia-Ruiz, and M. Green. Using sonification to enhance teaching and learning of network intrusion detection. In *Proceedings of the 12th International Conference on Humans and Computers (HC 2009)*. Hamamatsu, Japan, December 9-10, 2009, pp. 39-44.

116 K. Collins, B. Kapralos, and K. Kanev. Sound interface design for smart table computer interaction. In *Proceedings of the 12th International Conference on Humans and Computers (HC 2009)*. Hamamatsu, Japan, December 9-10, 2009, pp. 19-25.

117 **B. Cowan**, and B. Kapralos. Real-time acoustical diffraction and first order specular reflection modeling using the GPU. In *Proceedings of the 10th Western Pacific Acoustics Conference.* Beijing, China, September 21-23, 2009.

118 B. Kapralos, A. Hogue, A. Kopinska, and **S. Khattak**. The interaction of visual and auditory cues to linear self-motion perception. In *Proceedings of the 10th Western Pacific Acoustics Conference.* Beijing, China. September 21-23, 2009.

119 B. Kapralos, N. Mekuz, A. Kopinska, and **S. Khattak**. Dimensionality reduced HRTFs: A comparative study. In *Proceedings of the ACM Advancements in Computer Entertainment (ACE) 2008*. Yokohama, Japan, December 3-5, 2008, pp 59-62.

120 **Y. Gahi**, **M. Lamrani**, **A. Zoglat**, M. Guennoun, B. Kapralos, and K. El-Khatib. Biometric identification system based on electrocardiogram data. In *Proceedings of the 2nd IEEE International Conference on New Technologies, Mobility and Security (NMTS 2008).* Tangier, Morocco, November 5-7, 2008, pp 1-5.

121 **B. Cowan**, and B. Kapralos. Spatial sound for video games and virtual environments utilizing real-time GPU-based convolution. In *Proceedings of the ACM FuturePlay 2008 International Conference on the Future of Game Design and Technology*. Toronto, Ontario, Canada, November 3-5, 2008, pp 166-172.

122 **M. Guennoun**, **S. Khattak**, B. Kapralos, and K. El-Khatib. Augmented reality-based audio/visual surveillance system. In *Proceedings of the 2008 IEEE International Workshop on Haptic Audio Visual Environments and their Applications (HAVE 2008)*. Ottawa, Ontario, Canada, October 18-19, 2008, pp 70-74.

123 **L. Qi**, M. Vargas Martin, B. Kapralos, M. Garcia-Ruiz, and M. Green. Toward sound-assisted intrusion detection systems. *2nd International Symposium on Information Security (IS '07)*. Vilamoura, Algarve, Portugal, November 26-27, 2007, pp 1634-1645. Appears in *Lecture Notes in Computer Science,* 4804:1634-1645.

124 M. Hogan, **H. Sabri**, and B. Kapralos. Interactive community simulation environment for community health nursing. In *Proceedings of the ACM FuturePlay 2007 Academic Games Conference*. Toronto, Ontario, Canada, November 15-17, 2007, pp. 237-240.

125 B. Kapralos, D. Zikovitz, and **S. Khattak**. Auditory motion perception threshold. In *Proceedings of the 2007 IEEE International Workshop on Haptic Audio Visual Environments and their Applications (HAVE 2007)*. Ottawa, Canada, October 12-14, 2007, pp. 1-4.

126 **H. Sabri**, **S. Khattak**, B. Kapralos, K. El-Khatib, and M. Guennoun. Virtual reality-based interface for the control of multiple surveillance cameras. In *Proceedings of the 2007 IEEE International Workshop on Haptic Audio Visual Environments and their Applications (HAVE 2007)*. Ottawa, Canada, October 12-14, 2007, pp. 76-79.

127 B. Kapralos, M. Jenkin, and E. Milios. Acoustical modeling with sonel mapping. In *Proceedings of the 19th International Congress on Acoustics (ICA 2007)*. Madrid, Spain, September 2-7, 2007.

128 D. C. Zikovitz, and B. Kapralos. Decruitment of the perception of changing sound intensity for simulated self-motion. In *Proceedings of the 13th International Conference on Auditory Display (ICAD 2007)*. Montreal, Canada, June 26-29, 2007, pp. 120-125.

129 B. Kapralos, A. Hogue, and **H. Sabri**. Automatic recognition of hand raising gestures for a remote learning application. In *Proceedings of the 8th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS 2007)*. Santorini, Greece, June 6-8, 2007, pp. 38-41.

130 M. A. Garcia-Ruiz, M. Vargas Martin, and B. Kapralos. Toward multimodal human-computer interfaces for network intrusion detection: A sonification prototype. In *Proceedings of the 122nd Convention of the Audio Engineering Society*. Vienna, Austria, May 5-8, 2007, preprint no: 7066.

131 **A. Shupo**, B. Kapralos and, M. Vargas Martin. Statistical-based skin classifier for omni-directional images. In *Proceedings of the 2nd International Conference on Computer Vision Theory and Applications (VISAPP 2007)*. Barcelona, Spain, March 8-11, 2007, pp. 11-17.

132 B. Kapralos, M. Jenkin, and E. Milios. Acoustical diffraction modeling for interactive virtual environments. In *Proceedings of the 2nd International Conference on Computer Graphics Theory and Applications (GRAPP 2007)*. Barcelona, Spain, March 8-11, 2007, pp. 241-248.

133 B. Kapralos, M. Jenkin, and E. Milios. Sonel mapping: A stochastic acoustical modeling system. In *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing* (ICASSP 2006). Toulouse, France, May 14-19, 2006, pp. V421-V24.

134 B. Kapralos, M. Jenkin, and E. Milios. Acoustical modeling using a Russian roulette strategy. In *Proceedings of the 118th Convention of the Audio Engineering Society*. Barcelona, Spain. May 28-31, 2005, preprint no: 6497.

135 B. Kapralos, M. Jenkin, and E. Milios. Acoustical diffraction modeling utilizing the Huygens-Fresnel principle. In *Proceedings of the 2005 IEEE International Workshop on Haptics Audio Visual Environments and their Applications (HAVE 2005)*. Ottawa, Ontario, Canada. October 1-2, 2005, pp. 39-44.

136 B. Kapralos, M. Jenkin, and E. Milios. Sonel mapping: Acoustical modeling with an acoustical version of photon mapping. In *Proceedings of the 2004 IEEE International Workshop on Haptics Audio Visual Environments and their Applications (HAVE 2004)*. Ottawa, Ontario, Canada. October 2-3, 2004, pp. 1-6.

137 B. Kapralos, D. Zikovitz, M. Jenkin and L. R. Harris. Auditory cues in the perception of self-motion. In *Proceedings of the 116th Convention of the Audio Engineering Society*. Berlin, Germany. May 8-11, 2004, preprint no: 6078.

138 B. Kapralos, A. Barth, J. Ma and M. Jenkin. A system for synchronous distance learning. In *Proceedings of the 16th International Conference on Vision Interface (VI 2003)*. Halifax, Nova Scotia, Canada, June 11-13, 2003, pp. 134-140.

139 B. Kapralos, M. Jenkin, E. Milios and J. Tsotsos. Eyes 'n ears face detection. In *Proceedings of the IEEE International Conference on Image Processing (ICIP 2001).* Thessaloniki, Greece. October 7 - 10, 2001, pp. 66-69.

140 B. Kapralos, M. Jenkin, E. Milios and J. Tsotsos. Eyes' n ears: face detection utilizing audio and video cues. In *Proceedings of the 2nd International Workshop on Recognition, Analysis and Tracking of Faces and Gestures in Real-time Systems (RATFG-RTS 2001), in conjunction with ICCV 2001)*. Vancouver, Canada, July 13, 2001, pp. 106-112.

141 E. Milios, B. Kapralos, S. Stergiopoulos: Sonification of range information for 3D space perception. In *Proceedings of the International Conference on Auditory Displays (ICAD)* - Joint ICAD/ASA/EAA Workshop on Auditory Display. Berlin, Germany. March 20, 1999.

Refereed Conference and Workshop Proceedings (Extended Abstracts)

142 G. Liu, B. Kapralos, and D. Chandross. Work-in-Progress– A serious game for psychedelic psychotherapy training for mental health professionals. In *Proceedings of the 12th International Conference of the Immersive Learning Research Network* (iLRN2026), June 27-30, 2026, Athens, Greece, pp. 1-7).

143 S. Abdo, B. Kapralos, K. Kamen, M. Jenkin, and A. Dubrowski. Enhancing embodiment and performance in immersive virtual learning environments using autostereoscopic 3D displays. In *Proceedings of the 10th International Symposium on Biomedical Engineering* (*ISBE2025*), October 30-31, 2025, Higashihiroshima, Japan, pp. 1-2.

144 B. Ko, D. Montero, D. Rojas, B. Kapralos, and A. Uribe-Quevedo. User experience impact of various user interfaces on VR laparoscopy tasks: A preliminary study. In *Proceedings of IEEE VR 2025*, March 8-12, Saint-Malo, France, pp. 1-2.

145 S. Abdo, B. Kapralos, K. Kanev, and A. Dubrowski. The effect of retention period in a psychomotor-based learning task that couples embodiment and pseudo-haptics. In *Proceedings of the 8th International Symposium on Biomedical Engineering* (ISBE 2023). November 21-22, 2023, Hiroshima, Japan, pp. 1-2.

146 A. Perivolaris, B, Kapralos, E. Peisachovich, and A. Dubrowski. A chatbot for an AR-based virtual simulation. In *Proceedings of the IEEE Games Entertainment and Media (GEM) Conference*. November 19-22, 2023, Barbados, pp. 1-2.

147 S. Abdo, C. J. Sese, C. Jensen, B. Kapralos, A. Uribe-Quevedo, KC Collins, K. Kanev, and A. Dubrowski. Developing effective virtual learning environments: Examining the effect of embodiment on pseudo-haptics. In *Proceedings of the 7th International Symposium on Biomedical Engineering* (ISBE 2022). November 25, 2022, Tokyo, Japan, pp. 1-2.

148 B. Kapralos, A. Quevedo, KC Collins, C. Da Silva, E. Peisachovich, K. Kanev, M. Jenkin, A. Dubrowski, and F. Alam. Pseudo-haptics to facilitate virtual psychomotor-based skills development. In *Proceedings of the IEEE CTSoc International Conference on Games, Entertainment & Media* (GEM), November 27-30, Barbados, pp. 1-2.

149 G. Ning, B. Grant, B. Kapralos, A. Quevedo, KC. Collins, K. Kanev, and A. Dubrowski. Simulating a drilling task using audio, video, and simple kinesthetic cues. In *Proceedings of the 6th International Symposium on Biomedical Engineering* (ISBE2021), December 2-3, 2021, pp. 1-2.

150 C. da Silva, A. Torres, B. Kapralos, E. Peisachovich, A. Dubrowski, V. Baltazar, B. Qureshi and N. Caraballo. Person-centered virtual serious games: Mental health education. In *Proceedings of the IEEE Signature Conference on Computers, Software, and Applications, Symposia on Computing Education and Learning Technologies* (CELT), July 12-16, 2021, virtual conference.

151 P. Mutombo, A. Torres, B. Kapralos, B. Gamble, C. Adams, L. Lawson and A. Dubrowski. An innovative virtual learning environment to enhance age-friendly cultural competencies. In *Proceedings of the IEEE Signature Conference on Computers, Software, and Applications, Symposia on Computing Education and Learning Technologies* (CELT), July 12-16, 2021, virtual conference.

152 G. Ning, B, Kapralos, A. U. Quevedo, and K. Collins. Examining the perception of drilling depth Using auditory cues. In *Proceedings of the IEEE Signature Conference on Computers, Software, and Applications*, July 12-16, 2021, pp. 1948-1949, virtual conference.

153 K. Wilcocks, B. Kapralos, A. Kalpin, D. Chandross, and A. Abbass. A dialogue intervention simulation framework to facilitate psychotherapy training. In *Proceedings of the 23rd Annual IEEE International Symposium on Consumer Technologies* (ISCT 2019), June 19-21, 2019, Ancona, Italy, pp. 1-2.

154 K. Wilcocks, A. B. B. Torres, A. Uribe-Quevedo, B. Kapralos S. Hunt, K. Slade, and G. Cullen. Increasing working at heights safety awareness with a virtual reality serious game. In *Proceedings of the 23rd Annual IEEE International Symposium on Consumer Technologies* (ISCT 2019), June 19-21, 2019, Ancona, Italy.

155 B. Kapralos, K. Kanev, M. Jenkin, and B. Kapralos. Immersive technologies and multimodal interactions in medical simulations and training. In *Proceedings of the 5th International Symposium toward the Future of Advanced Researches*, March 6, 2019, Shizuoka, Japan.

156 D. Zhao, S. MacDonald, T. Gaudi, A. Uribe-Quevedo, M. V. Martin, and B. Kapralos. Facial expression detection employing a brain computer interface. In *Proceedings of the International Conference on Information, Intelligence, Systems and Applications* (IISA 2018), July 23-25, Zakynthos, Greece.

157 T. O. Sarmiento, M. Vargas, A. Uribe-Quevedo, D. Rojas, B. Kapralos and B. Perez. Non-immersive virtual cardiac auscultation interactions employing a 3D printed stethoscope. In *Proceedings of the International Conference on Information, Intelligence, Systems and Applications* (IISA 2018), July 23-25, Zakynthos, Greece.

158 M. A. V. Orjuela, A. J. U. Quevedo, D. Rojas, B. Kapralos and B. Perez-Gutierrez. A VR cardiac auscultation examination game, In *Proceedings of the 2017 Games and Learning Alliance (GALA) International Conference*, December 5-7, 2017, Lisbon, Portugal.

159 S. Valdivia-Trujillo, R. Blanco, A. Uribe-Quevedo, L. Penuela, D. Rojas, and B. Kapralos. Manikin 3DUI to demo spinal column flexion. In *Proceedings of the 12th Colombian Conference on Computing*, September 19-22, 2017, Cali, Colombia.

160 B. Cowan, B. Kapralos, and K. Collins. Spatial audio modelling used to provide artificially intelligent characters with realistic sound perception. *GameSoundCon 2016*, Los Angeles, CA, September 27-28, 2016, pp. 1-3.

161 A. Uribe-Quevedo, M. Nguyen, R. Shewaga, B. Kapralos, and M. Jenkin. Off-the-shelf room-scale and mobile virtual reality for medical training. *2nd Workshop on Engineering in Medical Applications*, September 14-15, 2016, Bogota Colombia.

162 A. Uribe-Quevedo, B. Kapralos, A. Hogue, K. Kanev, M. Jenkin, and R. P. Barneva. A multi-user tabletop display with enhanced mobile visuals for teaching and collaborative training. *Consortium for Computing Sciences in Colleges — Northeastern Region 2016 Conference*, Clinton, NY, USA, April 29 – 30, 2016. Appears in *Journal of Computing Sciences in Colleges*, 31(6):60-62, 2016.

163 A. Uribe-Quevedo, D. Rojas, M. Usman, B. Kapralos, F. Moussa, A. Dubrowski, and N. Jaimes. Cardiac auscultation serious game approach. In *Proceedings of the 4th International Conference on Serious Games and Applications for Health*, Orlando, FL, USA, May 11-13, 2016, pp. 1-2.

164 S. Oritz, A. Uribe Quevedo, and B. Kapralos. Hand VR exergame for occupational health care. *Medicine Meets Virtual Reality*. Los Angeles, CA, USA, April 7-9, 2016 Appears in *Studies in Health Technology and Informatics*, 220:281-284, 2016.

165 D. Rojas, B. Cowan, B. Kapralos, and A. Dubrowski. Gamification and health professions education. In *Proceedings of the IEEE Games Entertainment and Media (GEM) 2014*, Toronto, Ontario, Canada, October 22-24, 2014, pp. 1-2.

166 Z. Khan and B. Kapralos. A scenario and dialogue editor for a cultural competence serious game. In *Proceedings of the IEEE Games Entertainment and Media (GEM) 2014*, Toronto, Ontario, Canada, October 22-24, 2014, pp. 1-2.

167 H. Andrews, M. Brumar, L. Lupinski, and B. Kapralos. A serious game for interview preparation. In *Proceedings of the IEEE Games, Entertainment, and Media 2014 Conference*, Toronto, Ontario, Canada, October 22-24, 2014, pp. 1-2.

168 M. Beig, A. Mayer, C. Chan, B. Kapralos, and A. Dubrowski. A serious game for medical-based cultural competence education and training. *The 14th IEEE International Conference on Advanced Learning Technologies (ICALT2014)*, Athens, Greece, July 7-10, 2014, pp. 211-212.

169 D. Rojas, B. Kapralos, and A. Dubrowski. Gamification, the next approach for internet-based learning in health professions education. *The 14th IEEE International Conference on Advanced Learning Technologies (ICALT2014)*, Athens, Greece, July 7-10, 2014, pp. 281-282.

170 **B. Cowan** and B. Kapralos. GPU-based acoustical occlusion modeling for virtual environments and games. In *Proceedings of the IEEE Games Innovation Conference (IGIC) 2013*, Vancouver, Canada, September 23-25, 2013, pp. 48-49.

171 R. Wehbe, D. Kappen, **D. Rojas**, M. Klauser, B. Kapralos, and N.Nacke. EEG-based assessment of video and in-game learning. Proceedings of the *ACM CHI 2013 Works-in-Progress* (*Juried*). April 27 – May 2, 2013, Paris, France, pp. 667-672.

172 B. Kapralos, M. Hogan, and A. Dubrowski. Cultural competence education and training with a serious game. In *Proceedings of the 15th International Conference on Humans and Computers*, February, 11-12, 2013, Hamamatsu, Japan.

173 A. Dubrowski, B. Kapralos, M. Jenkin, and K. Kanev. Collaborative, interactive smart-table-based simulations for interprofessional education? In *Proceedings of the 15th International Conference on Humans and Computers*, February 11-12, 2013, Hamamatsu, Japan.

174 J. Koh, **J. H. Cheung**, B. Kapralos, and A. Dubrowski. Web-based learning and computer supported collaborative learning for acquiring psychomotor skills: Perspectives of medical undergraduates. *Medicine Meets Virtual Reality 2013,* February 20-23, 2013, San Diego, CA, USA. Appears in *Studies in Health Technology and Informatics*, 174:222-224, 2013.

175 R. Martin, **D. Rojas**, **J. H. Cheung**, B. Weber, B. Kapralos, and A. Dubrowski. Perceptions of the roles of social networking in simulation augmented medical education and training. *Medicine Meets Virtual Reality 2013*, February 20-23, 2013, San Diego, CA, USA. Appears in *Studies in Health Technology and Informatics*, 174:276-278, 2013.

176 **R. Shewaga**, A. Knox, **G. Ng**, B. Kapralos, and A. Dubrowski. Z-DOC: A serious game for Z-plasty procedure training. *Medicine Meets Virtual Reality 2013*, February 20-23, 2013, San Diego, CA, USA. Appears in *Studies in Health Technology and Informatics*, 174:404-406, 2013.

177 E. Bassilious**, A. DeChamplain**, **I. McCabe**, **M. Stephan**, B. Kapralos, F. H. Mahmud, and A. Dubrowski. Power defense: A video game for improving diabetes numeracy. In *Proceedings of the ACM Human Factors in Computer Systems (CHI) - Student Games Competition*, Austin, Texas, USA, May 5-10, 2012, pp. 1327-1332.

178 **M. Tawadrous**, B. Kapralos, S. Kevan, and A. Hogue. A serious game for incident response training. *Graphics Interface 2012 Poster Presentation*, Toronto, Canada, May 28-30, 2012.

179 **B. Cowan**, B. Kapralos, S. Cristancho, F. Moussa, and A. Dubrowski. The serious game surgical cognitive education and training framework. *Graphics Interface 2012 Poster Presentation (extended abstract)*, Toronto, Ontario, Canada, May 28-30, 2012.

180 **B. Cowan**, **S. Khattak**, A. Hogue, and B. Kapralos. Screen space point sampled shadows. *Graphics Interface 2012 Poster Presentation*, Toronto, Ontario, Canada, May 28-30, 2012. **Best Poster Award**.

181 **D. Rojas, J. J. H. Cheung**, **B. Cowan**, B. Kapralos, and A. Dubrowski. Serious games and virtual simulations debriefing using a social networking tool. In *Proceedings of the Computer Games Multimedia & Allied Technology Conference*, Bali, Indonesia, May 7-8, 2012.

182 E. Bassilious, **A. DeChamplain**, **I. McCabe**, **M. Stephan**, B. Kapralos, F. Mahmud, and A. Dubrowski. Power defense: A video game for improving diabetes numeracy. In *Proceedings of the Third IEEE International Games Innovation Conference*, City of Orange, CA, USA, November 2-4, 2011, pp. 124-125.

183 **B. Cowan**, and B. Kapralos. A simplified level editor. In *Proceedings of the Third IEEE International Games Innovation Conference*, Orange, CA, USA, November 2-4, 2011, pp. 53-54.

184 K. Collins, P. Taillon, B. Kapralos, and J. M. Trivi. A framework for distributed audio smartphone games. *SIGGRAPH 2011*, (poster presentation), Vancouver, British Columbia, Canada, August 9-11, 2011.

185 **D. Rojas**, B. Kapralos, S. Cristancho, K. Collins, C. Conati, and A. Dubrowski. The effect of background sound on visual fidelity perception. In *Proceedings of ACM Audio Mostly 2011 (Extended Abstracts)*. Coimbra, Portugal, September 7-9, 2011.

186 A. Monclou, S. Cristancho, B. Kapralos and A. Dubrowski. Serious games for analog telecommunications education. In *Proceedings of the ACM FuturePlay 2010 International Conference on the Future of Game Design and Technology,* Vancouver, British Columbia, Canada, May 6-8, 2010, pp. 251-252.

187 **J. Lam**, C. Collins, B. Kapralos, A. Hogue and M. A. Garcia-Ruiz. Wiimote-controlled stereoscopic MRI visualization with sonic augmentation. In *Proceedings of the ACM FuturePlay 2010 International Conference on the Future of Game Design and Technology*. Vancouver, British Columbia, Canada, May 6-8, 2010, pp. 261-262.

188 K. Collins, B. Kapralos, A. Hogue and K. Kanev. An exploration of distributed mobile audio and games. In *Proceedings of the ACM FuturePlay 2010 International Conference on the Future of Game Design and Technology*, Vancouver, Canada, May 6-8, 2010, pp. 253-254.

189 **A. Brown**, M. Vargas Martin, B. Kapralos, Mark Green, and M. Garcia-Ruiz. Towards music assisted intrusion detection. In *Proceedings of the IEEE Symposium on Security and Privacy*. Oakland, CA. USA, May 17-20, 2009.

190 **B. Cowan**, and B. Kapralos. Real-time GPU-based convolution: A follow-up. In *Proceedings of the ACM FuturePlay @ GDC Canada 2009 International Conference on the Future of Game Design and Technology*. Vancouver, British Columbia, Canada, May 12-13, 2009, pp. 25-26.

191 **A. Milner**, A. Hogue, B. Kapralos, and J. Friedlan. Interactive accounting simulation environment for accounting education and training. In *Proceedings of the ACM FuturePlay 2008 International Conference on the Future of Game Design and Technology*, Toronto, Ontario, Canada, November 3-5, 2008, pp 258-259.

192 **B. Cowan**, **M. Shelley**, **H. Sabri**, B. Kapralos, A. Hogue, M. Hogan, M. Jenkin, S. Goldsworthy, L. Rose and A. Dubrowski. Interprofessional care simulator for critical care education. In *Proceedings of the ACM FuturePlay 2008 International Conference on the Future of Game Design and Technology*, Toronto, Ontario, Canada, November 3-5, 2008, pp. 260-261.

193 B. Kapralos, and N. Mekuz. Application of dimensionality reduction techniques to HRTFs for interactive virtual environments. In *Proceedings of ACM Int. Conference on Advances in Computer Entertainment Technology (ACE 2007)*, Salzburg, Austria, June 13-15, 2007, pp. 256-257.

Refereed Abstracts

1. B. Kapralos. Leveraging artificial intelligence to enable precision learning in immersive virtual learning environments. *Proceedings of the 19th International Conference on e-Learning & Innovative Pedagogies*, April 16-17, 2026, Rhodes, Greece.

2. **S. Jamaleddine**, B. Kapralos, and A. Dubrowski. Bridging pedagogy and accessibility: A framework for smartphone-based AR physics simulations in higher education. *2026 Conference on Teaching and Learning at Ontario Tech University*, Oshawa, Canada, March 25, 2026.

3. C. da Silva, **A. Torres**, B. Kapralos, E. Peisachovich, C. Anyinam, S. Coffey, A. Dubrowski, L. Graham. Supporting internationally educated nurses through virtual serious gaming: Enhancing academic writing and critical appraisal skills. In *Proceedings of the 18th annual International Conference of Education, Research and Innovation* (ICERI 2025), November 10-12, 2025, Seville, Spain, p. 7365.

4. **S. Abdo**, B. Kapralos, and A. Dubrowski. Exploring AI-generated audio for enhancing haptic perception in immersive virtual learning environments. In *Proceedings of the 13th Annual Sunnybrook Education Conference*, November 21, 2025, Toronto, Canada.

5. S. Dogra, D. Katsoulis, S. Horton, D. Dunstan, B. Kapralos, J. Copeland, and D. Bouchard. Introducing EngAge: Co-Creation and initial implementability of an intervention targeting sedentary behaviour in older adults using the staircase approach. In *Proceedings of ISBNPA 2025*, June 11-14, Auckland, New Zealand.

6. B. Kapralos. Developing inclusive immersive virtual learning environments (iVLEs). In *Proceedings of the 2025 International Conference on Games and Narrative*, March 3-6, 2025, Waterloo, Canada.

7. **F. Stancati**, **A. Riitano**, B. Kapralos, D. Button, A. Dubrowski, and F. Lamberti. An intelligent virtual tutor for a VR-based intraosseous access serious game. *Annual Sunnybrook Education Conference*, November 29, 2024, Toronto, Canada.

8. **G. Hollaender**, **C. Culver**, E. Peisachovich, B. Kapralos, and A. Dubrowski. XXX *Annual Sunnybrook Education Conference*, November 29, 2024, Toronto, Canada.

9. **Z. Hosseini**, **A. Torres**, D. Smeeton, B. Gamble, B. Kapralos, and A. Dubrowski. Evaluation of a 'gamified virtual pre-lab simulation (G-vSim) microtomy training' as a preparation tool for undergraduate medical laboratory students: A pilot study. In *Proceedings of Simulation Canada 2024 Sim Expo*, November 25-26, 2024, Banff, Canada.

10. **A. Torres**, M. Chiu, **C. Craven**, B. Kapralos, A. Dubrowski, M. Smith, and A. Burhan, Building a virtual reality platform for dementia caregivers simulation-based skills-training: A technology developer's perspective on lessons learned. *2024 AGE-WELL Annual Conference*, October 23-24, 2024, Edmonton, Canada.

11. **R. Al-bayati**, **K. Clarke**, M. Chiu, **A. Torres**, A. Dubrowski, B. Kapralos, M. Smith, and A. Burhan, Empowering dementia caregivers with a virtual reality (VR) simulation-based skills-building platform `VR-SIM Carers' - knowledge users' perspectives. *2024 AGE-WELL Annual Conference*, October 23-24, 2024, Edmonton, Canada.

12. **S. Abdo**, B. Kapralos, KC Collins, and A. Dubrowski. The effect of embodiment on pseudo-haptics for psychomotor skills development in immersive virtual learning environments. In *Proceedings of the 5th International Conference on Medical Education Informatics*, June 10-11, 2024, Thessaloniki, Greece.

13. **S. Abdo**, **C. Jensen**, B. Kapralos, A. Uribe-Quevedo, KC Collins, K. Kanev, and A. Dubrowski. Developing cost-effective virtual learning environments: Examining the effect of pseudo-haptics on embodiment. *Simulation Canada 2023 SIM EXPO*, December 11-12, 2023, Ottawa, Canada.

14. **S. Abdo, S. Siraj, B. Barth, P. Calverley, K. Clarke, K. Gamble,** B. Kapralos, B. Cowan, M. Short, A. Torres, B. Gamble, and A. Dubrowski. Developing virtual interprofessional education micro-credential modules for medical laboratory learners using elaboration theory. *Simulation Canada 2023 SIM EXPO*, December 11-12, 2023, Ottawa, Canada

15. F. Pelletier, **A. Torres**, L. Meloche-Dumas, N. Guérard-Poirier, A. Kaviani, B. Kapralos, F. Mercier, A. Dubrowski, and E. Patocskai. The role of collaborative feedback and remote practice in the acquisition of suturing skills by medical

students at Université de Montréal. *CASE 2022: Competence to Excellence: Canadian Conference for the Advancement of Surgical Education*, October 13–14, 2022, Appears in: *Canadian Journal of Surgery*, 24:65 (6 Suppl 1), p. S21, doi:10.1503/cjs.014622.

16. F. Bénard, M. Habti, L. Meloche-Dumas, S. Bérubé, D. Cadoret, A. Arutiunian, Y. Papas, **A. Torres**, B. Kapralos, F. Mercier, A. Dubrowski, and E. Patocskai. Efficacy testing of an affordable and realistic small bowel simulator for hand-sewn anastomosis. *CASE 2022: Competence to Excellence: Canadian Conference for the Advancement of Surgical Education*, October 13–14, 2022, Appears in: *Canadian Journal of Surgery*, 24:65, (6 Suppl 1), p. S21, doi:10.1503/cjs.014622

17. **D. F. Montero Meza**, A. J. Uribe Quevedo, **B. Ko**, B. Kapralos, and R. Windrim. Development of a novel virtual reality twin-to-twin transfusion syndrome surgical simulator. In *Proceedings of the 2022 Simulation Canada Sim Expo*. October 17-18, 2022, Toronto, Canada.

18. A. Uribe Quevedo**, J. Micallef**, **M. Mnaymneh**, **B. Gino**, **S. Alves**, **M. Novakovic**, B. Kapralos, and A. Dubrowski. Microcredential course for upskilling simulations skills with 3D printing. In *Proceedings of the 2022 Simulation Canada Sim Expo*. October 17-18, 2022, Toronto, Canada.

19. **M. Sivanathan**, A. Dubrowski, A. Quevedo, B. Kapralos, and V. Bhat. Development of a virtual reality simulation to examine and mitigate moral distress in healthcare workers: Design thinking and modified Delphi study. In *Proceedings of the 2022 Simulation Canada Sim Expo*. October 17-18, 2022, Toronto, Canada.

20. **K. Wilcocks**, B. Kapralos, A. Quevedo, A. Dubrowski, and F. Alam. The anesthesia crisis scenario builder (ACSB) for virtual anesthesia crisis-based training. In Proceedings of the 2022 Simulation Canada Sim Expo. October 17-18, 2022, Toronto, Canada.

21. N. Guérard-Poirier, M. Beniey. L. Meloche-Dumas, **A. Torres**, M. Dhane, B. Kapralos, F.Mercier, and A. Dubrowski. Virtual simulation in medical education for the acquisition of fundamental surgical skills: a randomized controlled trial. *The Royal College Simulation Summit*, Virtual, November 4-5, 2021.

22. **S. Wahab**, D. Smeeton, B. Kapralos, and A. Dubrowski. Development and testing of a virtual simulation training module to teach microtomy. In *Proceedings of the 2021 Simulation Summit*. Virtual Conference. November 4 - 5, 2021.

23. **P. Mutombo**, **A. Torres**, B. Kapralos, B. Gamble, B. Momand, C. Adams, L. Lawson, C. Da Silva, and A. Dubrowski. Seniors cultural competency virtual learning environment (SCCVLE): An innovative education tool to enhance competencies. In Proceedings of the *4th International Conference on Medical Education Informatics (MEI 2021)*. Virtual, The University of Nottingham, UK and the University of Malaya, Malaysia, July 12-15, 2021.

24. **D. Buttu**, A. Benson, B. Gino, B. Kapralos, **A. Torres**, and A. Dubrowski. Preliminary data results regarding the development of a virtual education simulation of an adult proximal tibia model for intraosseous insertion simulators to train pre-hospital healthcare providers. In *Proceedings of the 4th International Conference on Medical Education Informatics (MEI 2021)*. Virtual, The University of Nottingham, UK and the University of Malaya, Malaysia, July, 12-15, 2021.

25. C. Da Silva, **A. Torres**, B. Kapralos, E. Peisachovich, C. Anyinam, S. Coffey, L. Graham, and A. Dubrowski A. Co-designing mental health Virtual reality education. In *Proceedings of the 4th International Conference on Medical Education Informatics (MEI 2021)*. Virtual, The University of Nottingham, UK and the University of Malaya, Malaysia, July, 12-15, 2021.

26. **P. Mutombo, A. Torres**, B. Kapralos, B. Gamble, C. Adams, L. Lawson, B. Momand, C. Da Silva and A. Dubrowski. Using community-based participatory to build an innovative virtual environment to enhance age-friendly cultural competencies. In *Proceedings of the Global Conference on Ageing from the International Federation on Ageing* (IFA), November 8-12, 2021, Niagara Falls, Ontario, Canada.

27. **J. Moo-Young**, B. Kapralos, A. Uribe-Quevedo, F. Alam, C. Matava, and A. Dubrowski. Virtual reality consumer-level haptic epidural simulator. *Annual American College of Surgeons (ACS) Surgical Simulation Summit*, Chicago, IL, USA, March 11-13, 2021.

28. **S. Wahab**, **D. Smeeton**, **A. Torres**, B. Kapralos, and A. Dubrowski. Application of hierarchical task analysis to construct experiential task analysis hands-on and on-line training modules to teach microtomy: A pilot study. In *Proceedings of the 2020 Canadian Health Workforce Virtual Conference*, December 9-10, 2020.

29. W. Sun, S. Horsburgh, A. Quevedo, R. Liscano, **A. Tabafunda**, R. Akhter, M. Lemonde, B. Kapralos, A. Tokuhiro, E. Bartfay, and B. Ashtarieh. Advancing reminiscence therapy through virtual reality application to promote social connectedness of persons with Dementia. Appears in *Gerontechnology*, 19(0):1-1, 2020. https://doi.org/10.4017/gt.2020.19.s.70041

30. A. Dubrowski, **K. Clarke**, R. Dubrowski, S. Hosseini, A. Quevedo, and B. Kapralos. Constructing a multidisciplinary collaborative utilizing disruptive technologies to design, test, and implement novel simulation training. *26th Annual Meeting of the Society for Simulation in Europe* (SESAM), Milan, Italy, June 17-19, 2020.

31. **T. Weber**, B. Kapralos, A. Quevedo, R. Dubrowski, P. Kartick, and A. Dubrowski. Developing an instrument examining contextual factors that matter in the implementation of three-dimensional printing and virtual reality in simulation in nursing and medical laboratory sciences education. In *Proceedings of the International Meeting on Simulation in Healthcare (IMSH)*, San Diego, CA, USA, January 18-23, 2020.

32. **K. Clarke**, **K. Wilcocks**, **E. Moreau**, H. J. Taggart, A. Quevedo, B. Kapralos, and A. Dubrowski. Development of an instrument to evaluate readiness and fit for implementation of disruptive technologies to enhance the use of simulation in medical laboratory sciences education. In *Proceedings of the International Meeting on Simulation in Healthcare (IMSH)*, San Diego, CA, USA, January 18-23, 2020.

33. **A. Torres**, B. Kapralos, A. Uribe-Quevedo, E. Zea, and A. Dubrowski. A gamified educational network for collaborative learning. In *Proceedings of the 2019 SIM-one SIM Expo*, Montreal, Canada, October 21-22, 2019.

34. **J. Moo-Young**, B. Kapralos, A. Uribe-Quevedo, F. Alam, C. Matava, and A. Dubrowski. Development of a consumer-level haptic epidural simulator. In *Proceedings of the 2019 SIM-one SIM Expo*, Montreal, Canada, October 21-22, 2019.

35. **T. Ortegon**, A. Uribe-Quevedo, N. Jaimes, D. Rojas, B. Kapralos, and B. P. Gutierrez. A makerspace stethoscope replica for cardiac auscultation mobile practices. In *Proceedings of the 2019 SIM-one SIM Expo*, Montreal, Canada, October 21-22, 2019.

36. **J. Brown**, **R. Savaglio**, **G. Watson**, **A. Kaplansky**, A. LeSage, B. Kapralos, and J. Arcand. The making of Foodbot Factory: An evidence-based mHealth nutrition education app for children. *Canadian Nutrition Society*. Niagara Falls, Ontario, Canada. May 5 2019. *2019 George Beaton Award for Public Health Research* recipient.

37. **J. Brown**, **R. Savaglio**, **G. Watson**, B. Kapralos, and J. Arcand. Developing Foodbot Factory: A case study on the importance of iterative development and usability testing for mHealth interventions. *Canadian Obesity Summit*. Ottawa, Ontario, Canada. Apr 24 2019. *Best Graduate Student Work* award.

38. B. Kapralos. The effect of sound on haptic fidelity perception for virtual-based technical skills development. *Hellenic Canadian Academic Association (HCAAO) 2nd HCAAO Symposium*, April 21, 2018, Toronto, Canada.

39. **M. Melasi**, A. Quevedo, and B. Kapralos. The effect of sound on haptic fidelity perception for technical skills development in virtual simulations. In *Proceedings of the Realities in Medicine Conference* (#REALMX2018), April 7-8, 2018, Toronto, Canada.

40. **D. Acosta**, **D. Gu**, **M. Chan**, A. Uribe-Quevedo, B. Kapralos, M. Jenkin, N. Jaimes, and K. Kanev. An augmented and mixed reality approach to eye fundus training. In *Proceedings of the Realities in Medicine Conference* (#REALMX2018), April 7-8, 2018, Toronto, Canada.

41. **M. Vargas Orjuela**, A. Uribe-Quevedo, D. Rojas, B. Kapralos, and B. Perez-Gutierrez. Virtual cardiac auscultation: A room-scale and mobile VR approach. In *Proceedings of the 2017 Ontario Healthcare Simulation Network (SIM-one) SIM Expo, Virtual Showcase*. Nov. 30 – Dec. 1, 2017, Toronto, Canada.

42. **M. Nguyen**, **D. Acosta**, **D. Gu**, A. Uribe Quevedo, B. Kapralos, M. Jenkin, and K. Kanev. Virtual eye fundus examination. In *Proceedings of the 2017 Healthcare Simulation Network (SIM-one) SIM Expo,* Virtual Showcase. Nov. 30 – Dec. 1, 2017, Toronto, Canada.

43. **K. Wilcocks**, N. Halabi, P. Kartick, R. Savaglio, A. Uribe Quevedo, Chi-Ming Chow, and B. Kapralos. In *Proceedings of the 2017 Healthcare Simulation Network (SIM-one) SIM Expo,* Virtual Showcase. Nov. 30 – Dec. 1, 2017, Toronto, Canada.

44. **M. Vargas**, **D. Rojas**, A. Uribe-Quevedo, and B. Kapralos. Development of a virtual auscultation training tool. In *Proceedings of the Royal College of Physicians and Surgeons of Canada Simulation Summit 2017,* Virtual showcase. November 1-2, 2017, Montreal, Canada.

45. B. Kapralos. Room-scale virtual simulation for epidural procedure preparation. *First Hellenic Canadian Academic Association (HCAAO) Symposium*, April 8, 2017, Toronto, Canada.

46. B. Kapralos. Serious gaming: Fidelity and multimodal interactions. *2nd Workshop on Engineering in Medical Applications*, September 14-15, 2016, Bogota Colombia

47. **R. Shewaga**, B. Kapralos, K. Lee, and F. Faham. A serious game for advanced cardiovascular life support education and training. *2016 Sim-One Healthcare Simulation Exposition*. October 6-7, 2016, Toronto, Canada.

48. Uribe-Quevedo, **D. Rojas**, B. Kapralos, F. Moussa, A. Dubrowski, and N. Jaimes. A virtual simulation for cardiac auscultation training. *2016 Sim-One Healthcare Simulation Exposition*. October 6-7, 2016, Toronto, Canada.

49. R. Barneva, **R. Banerjee**, K. Kanev, B. Kapralos, M. Jenkin. Enhanced student engagement using cell phones and tabletop computers or smart boards. *25th Conference on Instructional Technologies (CIT 2016)*, May 31-June 3, 2016, Potsdam, NY, USA.

50. **Z. Khan**, B. Kapralos, and A. Dubrowski. Fydlyty: A low-fidelity serious game for medical-based cultural competence education. *2015 Ontario Simulation Expo*, Toronto, Canada, December 14-15, 2015.

51. **R. Shewaga**, B. Kapralos, and A. Dubrowski. A serious game for medical-based cultural competence training. *2015 Ontario Simulation Expo*, Toronto, Canada, December 14-15, 2015.

52. A. Welsher, L. E. M. Grierson, **D. Rojas**, **Z. Khan**, L. Vanderbeek, R. Brydges, B. Kapralos, and A. Dubrowski. The flexible application of observational practice and educational networking (OPEN) across a distributed medical education network. *Canadian Conference on Medical Education*, April 16-19, 2015, Montreal, Canada.

53. **Z. Khan**, and B. Kapralos. The role of graphical fidelity on learning within a virtual learning environment. *The York University Centre for Vision Research International Conference on Perceptual Organization*, Toronto, Canada, June 23-26, 2015.

54. **A. Welsher**, **Z. Kahn**, **D. Rojas**, C. Bernard, D. Musson, R. Brydges, A. Dubrowski, B. Kapralos, and L. Grierson. Observational practice and educational networking: Connecting clinical skill Learners across a distributed medical education network. *2014 Ontario Simulation Exposition*, Toronto, Canada, December 4-5 2014.

55. **R. Shewaga**, **Z. Khan**, B. Kapralos, and A. Dubrowski. A serious game for medical-based cultural competence education and training. *2014 Ontario Simulation Exposition*, Toronto, Canada, December 4-5 2014.

56. **D. Rojas**, B. Kapralos, and A. Dubrowski. Thinking outside the box: Using online learning for simulation preparation in health professions education. *International Association for Medical Education Annual Conference*. Milan, Italy, August 30 – September 3, 2014, pp. 611.

57. **J. H Cheung**, J. Koh, K. MacKinnon, C. Brett, D. J. Bägli, B. Kapralos, and A. Dubrowski. Preparing for simulation-based education and training through web-based learning: The role of observational practice and computer-supported collaborative learning. *The Hodges Education Scholarship International Symposium.* Toronto, Ontario, Canada. March 20, 2014.

58. A. Dubrowski, B. Kapralos, M. Jenkin, and K. Kanev. Interprofessional critical care training: Interactive virtual learning environments and simulations. *Humans and Computers 2013*, Hamamatsu, Japan, December 17, 2013.

59. K. Kanev, **I. Oido**, P. Hung, B. Kapralos and M. Jenkin. Augmented reality (AR) toys: Experiences and future works. *Humans and Computers 2013*, Hamamatsu, Japan, December 17, 2013.

60. **M.W.C. Chan**, **S. Truong**, **J. H. Cheung**, S. Hum, B. Kapralos, C. Whitehead, and A. Dubrowski. Technical and design requirements for integrating social networking into a primary patient-centred care model for the 80+. 2013 *North American Primary Care Research Group (NAPCRG) Annual Meeting*, Ottawa, Canada, November 9-13, 2013.

61. B. Kapralos. Perceptual-based rendering and virtual environments: Increasing the perception of visual fidelity with customizable sound. *Cognitively Based Music Informatics Research (CogMIR 2013)*, Toronto, Canada, August 7, 2013.

62. L. R. Harris, R. Herpers, M. Jenkin, R. S. Allison, H. Jenkin, B. Kapralos, D. Scherfgen, and S. Felsner. Optic flow and self-motion perception: The contribution of different parts of the field. *Neuroscience 2012*, October 13-17, 2012, New Orleans, LA, USA.

63. **J. H. Cheung**, J. Koh, K. Mackinnon, C. Brett, D. Bägli, B. Kapralos, and A. Dubrowski . The use of Web-based observational practice and educational networking improves simulation-based education and training of central venous catheterization: A pilot study. *The Richard K. Reznick Wilson Centre Research Day* 2012. Toronto, Canada, October 12, 2012.

64. **J. H. Cheung**, J. Koh, K. Mackinnon, C. Brett, D. Bägli, B. Kapralos, and A. Dubrowski .Training of central venous catheterization in novice learners. *The Richard K. Reznick Wilson Centre Research Day* 2012. Toronto, Canada, October 12, 2012.

65. F. Haji, **R. Shegawa**, R. Khan R. Martin, B. Kapralos, and A. Dubrowski. Quantifying cognitive load during surgical knot-tying using subjective ratings and dual-task performance. *The Richard K. Reznick Wilson Centre Research Day* 2012. Toronto, Canada, October 12, 2012.

66. L. Grierson, M. Barry, S. Meng, B. Kapralos, H. Carnahan, and A. Dubrowski. Collaborative internet environments and video-based observational practice facilitates retention of motor skills. *North American Society for the Psychology of Sport and Physical Activity Conference*, Honolulu, HI, USA, June 7-9, 2012.

67. **M. Tawadrous**, S. Kevan, B. Kapralos, and A. Hogue. A serious game for incidence response education and training. *Eighth International Conference on Technology, Knowledge, and Society*. Los Angeles, CA., USA, January 16-18, 2012.

68. K. Collins and B. Kapralos. Multichannel sound on a horizontal surface. *Living Stereo: History, Culture, Multichannel Sound*. Ottawa, Canada, March 9-11, 2011.

69. **B. Cullen**, K. Collins, A. Hogue, and B. Kapralos. The effects of multi-channel audio on the perception of stereoscopic 3D. *Living Stereo: History, Culture, Multichannel Sound*. Ottawa, Canada, March 9-11, 2011.

70. S. Cristancho, F. Moussa, A. Monclou, B. Kapralos, A. Figueredo, and A. Dubrowski. Fostering simulation-based surgical training in developing countries: A pilot study. *Association in Medical Education in Europe* (AMEE). Vienna, Austria, August 27-28, 2011.

71. **B. Cowan**, **H. Sabri**, B. Kapralos, F. Moussa, S. Cristancho, and A. Dubrowski. Serious Games: 2D vs 3D? *11th Annual International Meeting on Simulation in Healthcare.* New Orleans, LA., USA, January 21-26, 2011.

72. L. E. M. Grierson, M. Barry, Y. Hui, S. Meng, B. Kapralos, H. Carnahan, and A. Dubrowski. A health professions' education application of collaborative internet environments: Video-based observational practice and educational networking, *11th Annual International Meeting on Simulation in Healthcare.* New Orleans, LA., USA, January 21-26, 2011.

73. T. Pierce, A. Hogue, and B. Kapralos. Getting serious about knowledge and learning in Second Life: Moving intercultural business communication beyond 'bow, kiss, & shake'. *Building Bridges: 96th National Communication Association National Convention*. San Francisco, CA., USA, November 17, 2010.

74. B. Kapralos, S. Cristancho, M. Porte, D. Backstein, A. Monclou, and A. Dubrowski. Serious games in the classroom: Gauging student perceptions. *The Richard K. Reznick Wilson Centre Research Day* 2010. Toronto, Canada, October 22, 2010.

75. **H. Sabri**, **B. Cowan**, B. Kapralos, M. Porte, D. Backstein, S. Cristancho, and A. Dubrowski. A serious game for total knee arthroplasty procedure education and training. *The Richard K. Reznick Wilson Centre Research Day* 2010. Toronto, Canada, October 22, 2010.

76. **B. Cowan**, **H. Sabri**, B. Kapralos, F. Moussa, S. Cristancho, and A. Dubrowski. A serious game for off-pump coronary artery bypass surgery procedure training. *The Richard K. Reznick Wilson Centre Research Day* 2010. Toronto, Canada, October 22, 2010.

77. L. E. M. Grierson, M. Barry, H. Carnahan, B. Kapralos, and A. Dubrowski. Effectiveness of an internet mediated educational networking instrument in the simulation-based training of clinical tasks. *The Royal College 2010 Simulation Summit*. Toronto, Ontario, September 27-29, 2010.

78. A. Dubrowski, B. Kapralos, S. Cristancho, A. Kotsakis, E. Ng, J. Pirie, S. Reeves, M. Barwick, B. Fleming-Carroll, A. Cheng, G. Bird, D. Quintero, A. Monclou, and A. Hogue. Interactive serious game simulation for critical care response team education. *3rd International Paediatric Simulation Symposium and Workshops (IPSSW) 2010*. Madrid, Spain, September 29-30, 2010.

79. L. R. Harris, R. Herpers, M. Jenkin, R. Allison, H. Jenkin, B. Kapralos, D. Scherfgen, and S. Boronas. The perception of linear self motion induced by a virtual reality display while viewing eccentrically. *11th International Multisensory Research Forum*. Liverpool, UK, June 16-19, 2010.

80. B. Kapralos, M. Hogan, K. Finney, and A. Dubrowski. Modular synthetic training research evaluation and extrapolation tool (mSTREET). *2nd Annual HETRU Conference on What really Works: Strategies to Improve Teaching and Learning*. Oshawa, Canada, November 21-22, 2009.

81. M. Hogan, B. Kapralos, B. Muirhead, and A. Dubrowski. Community health nursing comes to life. *Third Annual Conference of the Canadian Game Studies Association*. Ottawa, Canada, May 23-24, 2009.

82. M. Hogan, B. Kapralos, B. Muirhead, and A. Dubrowski. Bringing community health nursing education to life. *Health Professionals Education (HPE)–Global Best Practices in Simulation 2009*. Toronto, Ontario, Canada, May 21-23, 2009.

83. M. Hogan, and B. Kapralos. The use of simulations in community health nursing curriculums. *26th Annual International Nursing Computer and Technology Conference*. Las Vegas, NV, USA. June 4-7, 2008.

84. M. Hogan, and B. Kapralos. Simulations in community health nursing. *2nd National Community Health Nurses Conference*. Toronto, Ontario, Canada, May 29-31, 2008.

85. B. Kapralos, and M. Hogan. Serious games: an overview. *2008 Canadian Conference on Medical Education*. Montreal, Quebec, Canada, May 3-7, 2008.

86. M. Hogan, **H. Sabri**, **S. Khattak**, and B. Kapralos. Interactive simulation for community health education and training. *Health Education Technology Research Unit (HETRU) Official Launch.* Oshawa, Ontario, Canada, April 7 2008.

87. B. Kapralos, M. Jenkin, E. Milios, and J. Tsotsos. Eyes 'n ears sound localization. In *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2001*. Salt Lake City, UT, USA, May 7-11, 2001.

88. B. Kapralos, M. Jenkin, E. Milios, and J. Tsotsos. Eyes 'n ears: A system for attentive teleconferencing. In *Proceedings of the 39th Meeting of the Acoustical Society of America*. Atlanta, Georgia USA, May 30-June 3, 2000. Appears in *Journal of the Acoustical Society of America*, 107(5):2790, 2000.

Keynote and Invited Presentations (given by Bill Kapralos; names in bold denote students)

1. A. Torres, A. Jagannathan, S. Abdo, B. Kapralos, and A. Dubrowski. From immersion to precision: Integrating XR, AI, and makerspace technologies into clinical skills training. *2026 Ontario Students Medical Education Research Conference* (OSMERC), Toronto, Ontario, Canada, January 18, 2025. **Invited workshop presenter.**

2. Durbowski, and B. Kapralos, S. DeSousa, and E. Wilson. AI, microlearning, and emerging technologies for precision education. A workshop held at the *13th annual Sunnybrook Education Conference*, Toronto, Ontario, Canada, November 21, 2025. **Invited workshop presenter**.

3. B. Kapralos. Immersive virtual learning environments: Open problems and future directions. *Sunnybrook Health Sciences Centre, Sunnybrook Hub for Applied Research in Education (SHARE), Simulation Research Rounds*, May 7, 2025, Toronto, Canada. **Invited Presentation**.

4. B. Kapralos. Designing immersive applications for medical education. *BN4701 Serious Games for Health*, *Department of Biomedical Engineering, National University of Singapore*, October 15, 2024. **Invited Guest Lecture**.

5. B. Kapralos. Immersive and emerging technologies for history, culture, and archeology. *Culture and Sustainable Development Seminar, Pan Messinian Kalamata University Program*, July 20, 2024, Koroni, Greece. **Invited Presentation**.

6. B. Kapralos. Immersive virtual learning environments for medical education: State-of-art, and open problems. *The Fifteenth International Conference on Information, Intelligence, Systems and Applications* (IISA 2024), July 17-19, 2024, Chania, Crete. **Invited Keynote Presentation**.

7. B. Kapralos. Immersive technologies for medical education. *25th Symposium on Virtual and Augmented Reality* (SVR 2023), November 6-9, 2023, Rio Grande, Brazil. **Invited Keynote presentation.**

8. B. Kapralos. Designing immersive applications for medical education. *BN4701 Serious Games for Health, Department of Biomedical Engineering, National University of Singapore*, September 13, 2023. **Invited Guest Lecture**.

9. E. Hava Peisachovich, B. Kapralos, C. Culver, and G. Hollaender. VR/XR Based Training & Education. *Knowledge and Experience Sharing Speaker Series*, York University, Toronto, Canada, April 28, 2023. **Invited Presentation**.

10. B. Kapralos. Immersive Technologies for knowledge and skills training for those caring for people with dementia. *Age Friendly University Speaker Series, Ontario Tech University*, Oshawa, Canada, September 14, 2022. **Invited presentation**.

11. B. Kapralos. Designing immersive applications for medical education. *BN4701 Serious Games for Health, Department of Biomedical Engineering, National University of Singapore*, September 13, 2022 (Virtual). **Invited Guest Lecture**.

12. B. Kapralos. Immersive technologies and intelligent avatars for medical education. *15th International KES Conference on Human-Centered Intelligent Systems* (KES-HCIS-22), Rhodes, Greece, June 20-22, 2022. **Invited Keynote Presentation**.

13. B. Kapralos. Immersive technologies for medical education. *SingHealth MEDSG 200*, Singapore, September 15, 2021 (Virtual). **Invited Presentation**.

14. B. Kapralos. Designing immersive technologies for medical education. BN7101 Serious Games for Health, *Department of Biomedical Engineering, National University of Singapore*, Singapore, September 14, 2021 (Virtual). **Invited Guest Lecture**.

15. B. Kapralos. Virtual simulation and serious gaming in medical education: Fidelity and multimodal interactions. *Simulation Interoperability Standards Organization (SISO) Exploration of Next Generation Technology Applications to Modeling and Simulation (M&S) (ENGTAM) Standing Study Group*, August 3, 2021 (Virtual). **Invited presentation**.

16. A. Dubrowski, B. Kapralos, D. Campbell, R. Brydges, S. Krishnan, and E. Peter. *Moral Injury and Digital Interventions (MIDI) Symposium Panel.* June 21, 2021 (Virtual). **Invited Panelist**.

17. B. Kapralos. Immersive technology for medical education. I*nternational Community Research on Medical Simulation Webinar Series*. May 27, 2021. **Invited presentation**.

18. B. Kapralos. Immersive technologies and medical education. Computer Simulation & Gaming Conference (CSGC), Virtual Conference, April 16, 2021.

19. B. Kapralos. The gamified educational network learning management system to facilitate engaging cooperative remote learning. *KES International COVID-19 Challenge: A Transition to a more Resilient World - International Virtual Summit*, March 29, 2021. **Invited keynote presentation**.

20. B. Kapralos. Immersive technologies for medical education. *Society of Obstetrics and Gynecologists of Canada's Ontario CME*. December 5, 2020. Toronto, Ontario, Canada (virtual). **Invited plenary presentation**.

21. B. Kapralos. Virtual and augmented reality. *Japanese-Canadian Frontiers of Science Symposium*. March 1-4, 2020, Banff, Alberta, Canada. **Invited presentation**.

22. B. Kapralos. Immersive technologies and multimodal interactions in biomedical engineering and augmented medical simulations and training. *The 5th International Symposium toward the Future of Advanced Researches*, March 6, 2019, Shizuoka, Japan.

23. B. Kapralos. Embracing the future of immersive technologies for medical education. *IEEE SMC Victorian Chapter*, October 22, 2018, Waurn Ponds, Australia. **Invited presentation**.

24. B. Kapralos. Serious Games in Higher Ed: A View from the Trenches Panel at the *Serious Play Conference 2018*, July 18, 2018, Buffalo, USA. **Invited panelist**.

25. B. Kapralos. Embracing the future of immersive technologies for medical education. *Serious Play Conference 2018*, July 18, 2018, Buffalo, USA. **Invited presentation**.

26. B. Kapralos. Embracing the future of immersive technologies for medical education. *1st Canadian Realities in Medicine Conference*, April 7-8, 2018, Toronto, Canada. **Invited presentation**.

27. B. Kapralos. Computer 101 – the basics: Introduction to computers and networks, hardware and software, the Internet and the cloud. *2018 Science in the Courtroom: The Web, Nets & Bots – Everything You Need to Know About Emerging Technologies*, *National Judicial Institute Science Program,* March 14-16, 2018, Toronto, Canada. **Invited presentation.**

28. B. Kapralos. Immersive technologies, serious gaming, and gamification for medical education. *Lakeridge Health Research and Innovation Rounds*, February 28, 2017, Oshawa, Canada. **Invited Presentation**.

29. B. Kapralos. Immersive technologies, serious gaming, and gamification for medical education. *Best Practice in Education Rounds (BPER), Centre for Faculty Development, Li Ka Shing International Healthcare Education Centre, University of Toronto, and St. Michael's Hospital*, Jan. 30, 2018, Toronto, Canada. **Invited presentation**.

30. B. Kapralos. Immersive technologies, gamification and serious games for healthcare education. *2017 Ontario Healthcare Simulation Network (SIM-one) SIM Expo*. Nov. 30 – Dec. 1, 2017, Toronto, Canada. **Invited keynote presentation**.

31. B. Kapralos. Immersive technologies for medical education, health, and well-being. *Entertainment Software Association of Canada (ESAC), Beyond Entertainment Conference*, October 23, 2017, Ottawa, Canada. **Invited presentation**.

32. B. Kapralos. Immersive technologies for medical education. April 20, 2017. School of Computer Science, Lincoln University, Philadelphia, PA, USA. **Invited presentation.**

33. B. Kapralos. Serious gaming and immersive technologies for medical education. *Seminario Internacional - Práctica en Terapia de Aceptación y Compromiso* (ACT), February, 23, 2017.Universidad Pontificia Bolivariana Bucaramanga, Colombia. **Invited presentation**.

34. B. Kapralos. Serious gaming and immersive technologies for medical education. February, 20, 2017. *Universidad Militar Nueva Granada,* Bogota, Colombia*.* **Invited presentation**.

35. B. Kapralos. Serious gaming and immersive technologies for medical education. *IEEE International Conference on Interactive Mobile Communication, Technologies and Learning*, San Diego, CA, USA, October, 17-19, 2016. **Invited keynote presentation**.

36. B. Kapralos. Virtual simulation and serious gaming: fidelity and multimodal interactions. 2nd Workshop on Engineering in Medical Applications, September 14-15, 2016, Bogota Colombia. **Invited Presentation**.

37. B. Kapralos. Serious games for medical education and training. *Games Institute Brown Bag Seminar Series*, University of Waterloo, Waterloo, Canada, March 24, 2016. **Invited presentation**.

38. B. Kapralos. An overview of game sound. *10th Audiovisual Arts Festiva*l, Corfu, Greece, May 17, 2016. **Invited (hands-on) tutorial**.

39. B. Kapralos. Video games and serious games: Analytics and big data. Big data across the disciplines: Modernizing the curriculum and enhancing the scholarship. Part of a panel/roundtable discussion at the *Spring Semester Faculty & Staff Professional Development Day Events*, State University of New York (Fredonia) Fredonia. February 5, 2016. **Invited participant.**

40. B, Kapralos. The application of virtual simulation, serious gaming, and virtual reality-based technologies for anatomy education and training. *Department of Anatomy and Cell Biology Weekly Seminar Series*, Schulich School of Medicine and Dentistry, University of Western Ontario, London, Canada, October 2, 2015. **Invited presentation**.

41. B. Kapralos. The influence and importance of sound and music in virtual learning environments. *1ο Πανελλήνιο Συνέδριο Καλλιτεχνικής Παιδείας*. Patra, Greece, June 18, 2015. **Invited keynote presentation**.

42. B. Kapralos. Serious gaming and gamification, for medical-based education and training: Overview, existing work, and open problems. *1st Workshop on Engineering in Medical Applications*, Bogota, Colombia, June 5, 2015. **Invited Presentation**.

43. B. Kapralos. Gamification and serious games for health professions education and health care. *GRAND Digital Health / E-Health Forum*, Vancouver, Canada, November 24, 2014. **Invited presentation**.

44. B. Kapralos. Serious games in education and health. Universidad La Araucanana, Santiago, Chile, November 12, 2014. **Invited presentation.**

45. B. Kapralos, and B. Cowan. A "hands-on" introduction to serious games, and (virtual) simulation for health professions education. *3rd Annual Sunnybrook Education Conference: Technology-Enhanced Learning,* Toronto, Canada, October 17, 2014. **Invited presentation**.

46. B. Kapralos. Gaming, gamification, and serious games. Faculty of Engineering, The Nueva Granada Military University, Bogota, Colombia, September 18, 2014. **Invited Presentation**.

47. B. Kapralos. Serious games for medical education. Faculty of Medicine, The Nueva Granada Military University, Bogota, Colombia, September 16, 2014. **Invited Presentation**.

48. B. Kapralos. Serious games for health professions education. *University of Toronto, Educational Information Technology Summer Student Award Program*. St. Michael's Hospital, Toronto, Canada, August 27. **Invited presentation**.

49. B. Kapralos. Serious games and virtual simulations: Customizing the audio-visual interface. *Well-Being, Rehabilitation, and Healthcare: Serious Games, Alternative Realities, and Play Therapy* Parallel Session at the *6th International Conference on Virtual, Augmented and Mixed Reality, HCI International 2014*, Crete, Greece, June 22-27, 2014. **Invited paper and presentation**.

50. B. Kapralos. An overview. Presentation given to the AboutKidsHealth group at the Hospital for Sick Children, Torono, Canada, Tuesday, March 4, 2014. **Invited presentation**.

51. B. Kapralos. Virtual simulation and serious gaming: Audio-visual interactions, perceptual-based rendering, and the implications. *The 16th International Conference on Humans and Computers* (*HC-2013*), December 17, 2013, Hamamatsu, Japan. **Invited presentation**.

52. **R. Shewaga**, and B. Kapralos. Z-DOC: A serious game for Z-plasty procedure training. *Ontario Simulation Expo 2013*, Toronto, Canada, December 5-6, 2013. **Invited presentation and demo**.

53. B. Kapralos. Game on: Gaming in medical education. *The 2nd Annual Sunnybrook Education Conference: Digital Learning*, Toronto, Canada, October 10, 2013. **Invited presentation**.

54. B. Kapralos. Serious games for health professionals education. *GRAND NCE Workshop: Innovation, Entrepreneurship and Digital Media Jobs Creation*. Edmonton, Canada, August 12, 2013. **Invited presentation.**

55. B. Kapralos. Multi-modal interactions, perceptual-based rendering and the implications for virtual environments and serious games. 2013 *International Conference on Multimedia and Human-Computer Interaction* (*MHCI'13*), Toronto, Canada, July 18-20, 2013. **Invited keynote presentation.**

56. B. Kapralos. Audio-visual interactions and perceptual-based rendering in virtual environments and games. *Audiovisual Arts Festival 2013: Art and Interculturalislm in the Mediterranean*. Corfu, Greece, June 20-30, 2013. **Invited presentation.**

57. B. Kapralos. Gaming, gamification, and serious games for law education. "Gamifying Your Law Firm" panel, *Third Annual lawTechcamp* Toronto, Canada, June 8, 2013. **Invited presentation/panelist**.

58. B. Kapralos. Serious games and virtual simulation for health education. "Research in Health Education Apps and Technology" panel, *Apps for Health and Education 2013*, Hamilton, Canada, May 16, 2013. **Invited presentation/panelist**.

59. B. Kapralos. Gaming, gamification, and serious games. "Gamification Deep Dive" panel, *Apps for Health and Education 2013*, Hamilton, Canada, May 16, 2013. **Invited presentation/panelist**.

60. **B. Cowan**, **D. Rojas**, B. Kapralos, K. Collins, and A. Dubrowski. Spatial sound and its effect on visual quality perception and task performance within a virtual environment. *Proceedings of the 21st International Congress on Acoustics*, June 2-7, 2013, Montreal, Canada. **Invited presentation.**

61. B. Kapralos. Game-based learning, serious games, and computer science. *13th Conference of the Association for Computer Studies Educators (ACSE) 2012,* Toronto, Ontario, Canada, November 24, 2012. **Invited presentation**.

62. B. Kapralos. Serious games for surgical education and training. *macGRID Simulation Research Network Workshop 2012*. Hamilton, Ontario, Canada, November 7-8, 2012. **Invited presentation**.

63. B. Kapralos. Serious games for surgery education and training. *Symposium on the Advances in Simulation-Based Surgical Education*. Bucaramanga, Colombia, July 27-28, 2012. **Invited presentation**.

64. B. Kapralos, and A. Dubrowski. The use of virtual learning environments to augment and extend simulation-based health professional's education. *Healthcare Simulation Conference and Networking Event: Simulation and Technology for Improved HealthCare and Education*. Toronto, Canada, March 2, 2012. **Invited presentation**.

65. B. Kapralos. iGO3D - exploring 3D gaming technology. *X-Summit*, Toronto, Ontario, Canada, October 24-26, 2011. **Invited presentation**.

66. B. Kapralos. An overview of serious games and game-based learning. *Seminario Internacional de Ingenieria Electronica*, *Universidad Pontificia Bolivariana–Bucaramanga*. Bucaramanga, Colombia, September 22, 2011. **Invited presentation**.

67. B. Kapralos. The S-3D gaming experience. *16th Conference on Animation, Effects, Games and Interactive Media* (*FMX 2011*), Stuttgart, Germany, May 3-6, 2011. **Invited presentation**.

68. B. Kapralos. Game-based learning and serious games: Serious opportunities. *Education Technology Strategies for Universities, Colleges, and K-12 Schools*. Toronto, Ontario, Canada, March 2-3, 2011. **Invited presentation**.

69. B. Kapralos. Serious games. *Simulation Institute and Strategic Networking Day*. Toronto, Ontario, Canada, November 19-20, 2010. **Invited presentation**.

70. B. Kapralos. Serious games + computer science. *Association for Computer Studies Educators (ACSE) 2010 Conference*. Toronto, Ontario, Canada, October 30, 2010. **Invited presentation**.

71. B. Kapralos. Serious games for interprofessional education for critical care response teams. *Group Awareness in Online Work, Learning, and Games Workshop* at *HCI 2010*. Abertay, Dundee, Scotland, September 7, 2010. **Invited keynote speaker**.

72. B. Kapralos. Serious games = serious opportunities. *Seminario Internacional de Ingenieria Electronica*, *Universidad Pontificia Bolivariana–Bucaramanga*. Bucaramanga, Colombia, April 30, 2010. **Invited presentation**.

73. B. Kapralos, A. Hogue, A. Kopinska, and **S. Khattak**. The interaction of visual and auditory cues to linear self-motion perception. *10th Western Pacific Acoustics Conference. Special Session on Sound Technologies for Multimodal Communication*. Beijing, China. September 21-23, 2009. **Invited presentation**.

74. B. Kapralos. Self-motion perception with changing sound source intensity. *CIRMMT Workshop on Multimodal Influences on Perceived Self–Motion*. Montreal, Quebec, Canada, February 4, 2008. **Invited presentation**.

75. B. Kapralos, M. Jenkin, and E. Milios. Acoustical modeling with sonel mapping. *19th International Congress on Acoustics (ICA 2007)*. Madrid, Spain, September 2-7, 2007. **Invited presentation**.

Other Presentations (Presented by Bill Kapralos)

1. B. Kapralos. Immersive technologies and serious gaming for medical education and training. *School of Electrical & Computer Engineering, Technical University of Crete*, Chania, Greece, May 30, 2017.

2. B. Kapralos. Serious gaming, virtual simulation, and immersive technologies for history, culture, and archeology education and training. *Guest Lecture: New Technologies for Cultural Heritage* (a core course for all students in History and Archaeology program, 4th year), University of Peloponnese, Kalamata, December 6, 2016.

3. B. Kapralos and **A. Uribe**. Serious gaming for medical education: Overview, multi-modal interactions, and open problems. *NSERC CREATE Collaborative Learning in Usability Experiences (CLUE) Seminar Series*, Carleton University, Ottawa, Canada, April 27, 2016.

4. B. Kapralos. Serious games for surgical education. Department of Computer Science, Ryerson University, Toronto, Canada, October 24, 2013.

5. B. Kapralos. The efficient approximation of acoustical diffraction using the GPU. Electrical and Computing Engineering Department, University of Patras, Greece, October 4, 2012.

6. B. Kapralos. Serious games for knee replacement surgery procedure education and training. *Health Education Technology Research Unit (HETRU) Rounds*. Oshawa, Ontario, Canada, March 11, 2010.

7. **B. Cowan** and B. Kapralos. Real-time spatial sound for virtual environments and games utilizing the GPU. Queens University, Kingston, Ontario, Canada, January 22, 2009.

8. Participant at the Ontario *Video Game Roundtable Meeting* with the Honorable Minister of Economic Development and Trade, Sandra Pupatello. Toronto, Canada, September 10, 2008.

9. M. Hogan and B. Kapralos. Interactive simulation for community health education and training. *Health Education Technology Research Unit (HETRU) Rounds.* Oshawa, Canada, Mar. 13, 2008.

Miscellaneous Publications and Technical Reports (Non-Refereed)

1 **F. Hamidi**, and B. Kapralos. A review of spatial sound for virtual environments and games with graphics processing units. *The Open Virtual Reality Journal*, 1(1):8–17, 2009.

2 B. Kapralos, M. Jenkin, and E. Milios. The sonel mapping acoustical modeling method. Department of Computer Science and Engineering, York University, Toronto, Ontario, Canada. *Technical Report. CS-2006-10*, September, 2006.

3 B. Kapralos, D. Zikovitz, M. Jenkin, and L. R. Harris. Auditory cues in the perception of self-motion for linear translation. Department of Computer Science and Engineering, York University, Toronto, Ontario, Canada. *Technical Report. CS-2004-04*, November, 2004.

4 B. Kapralos, M. Jenkin, and E. Milios. Audio-visual localization of multiple speakers in a video teleconferencing setting. Department of Computer Science and Engineering, York University, Toronto, Ontario, Canada. *Technical Report CS-2002-02*, July 2002.

Published Reviews in ACM Computing Reviews

1. Completed a summary and a review of the following paper (December 5, 2008): K. Bormann. Visuals are not what they look, *Virtual Reality* 12(2): 115-123, 2008.

SCHOLARLY AND PROFESSIONAL ACADEMIC ACTIVITIES

- ### Conference Chairing and Organizing Committees

Name	Dates
Workshop Co-Chair: *3D Reconstruction, Digital Twinning, and Simulation for Virtual Experiences (ReDigiTS)*. A workshop at IEEE VR 2025, Saint Malo, France.	mar 9, 2025
Conference Co-Chair (Techincal Program Committee): *IEEE CTSoc Gaming, Entertainment and Media (GEM) 2024*. Turin, Italy.	Jun 5-7, 2024
Workshop Co-Chair: *3rd IEEE VR 2024 Workshop on 3D Reconstruction, Digital Twinning, and Simulation for Virtual Experiences*. A workshop at *IEEE VR 2024*, Orlando, FL, USA.	Mar 17, 2024
Workshop Co-Chair: 2nd *IEEE VR 2023 Workshop on 3D Reconstruction, Digital Twinning, and Simulation for Virtual Experiences*. A workshop at *IEEE VR 2023*, Shanghai, China.	Mar 25, 2023
Workshop Co-Chair: *IEEE VR 2024 Workshop on* 3D reconstruction, digital twinning, and	Mar 12-13, 2022

simulation for virtual experiences. A workshop at *IEEE VR 2022.* Virtual Workshop.	
Workshop Chair: *2018 International Workshop on Immersive Technologies and Serious Gaming for Health Professions Education* – held in conjunction with the *IEEE 9th International Conference on Information, Intelligence, Systems and Application.*	Jul 23-25, 2018
Conference Co-Chair*: IEEE Games, Entertainment, and Media Conference (GEM) 2015.* Toronto, Ontario, Canada.	Oct 14-16, 2015
Workshop Chair: *2015 International Workshop on Serious Gaming = Serious Business*. Hamamatsu, Japan.	Mar 5, 2015
Organizing Committee (Virtual Sim/Gaming/Tech. Session): *Ontario Simulation network (Sim-One) Simulation Exposition*. Toronto, Canada.	Dec 4-5, 2014
Conference Chair*: IEEE Games, Entertainment, and Media Conference (GEM) 2014*. Toronto, Ontario, Canada.	Oct 22-24, 2014
Workshop Co-Chair: *International Workshop on Collaboration and Gaming* (*CoGames 2013*). As part of the 2*013 IEEE International Conference on Collaboration Technologies and Systems* (*CTS 2013*). San Diego, CA, USA.	May 20-24, 2013
Conference Co-Chair: The *18th ACM Symposium on Virtual Reality Software and Technology*. Toronto, Ontario, Canada.	Dec 10-12, 2012
Workshop Chair: *10th International Conference on Entertainment Computing* in 2011. Vancouver, British Columbia, Canada	Oct 5-8, 2011
Conference Chair*: ACM FuturePlay @ GDC 2010.* Vancouver, British Columbia, Canada.	May 6-7, 2010
Organizing Committee*: Health Education Technology Research Unit (HETRU) and McGraw-Hill Ryerson 2nd Annual Conference: What Really Works: Strategies to Improve Teaching and Learning*. Oshawa, Canada	Nov 21-22, 2009
Conference Chair*: ACM FuturePlay @ GDC 2009.* Vancouver, British Columbia, Canada	May 12-13, 2009
Conference Chair*: ACM FuturePlay 2008 International Conference on the Future of Game Design and Technology.* Toronto, Ontario, Canada	Nov 3-5, 2008
Workshop Organizing Committee: *CIRMMT Workshop on Multimodal Influences on Perceived Self–Motion*. Montreal, Quebec, Canada	Feb 4, 2008
Conference Chair*: ACM FuturePlay 2007 International Conference on the Future of Game Design and Technology.* Toronto, Ontario, Canada	Nov 15-17, 2007

- Panel/Tutorial Participation/Organization

Name and Description	Dates
B. Kapralos, A. Dubrowski, and F. Haji. An introduction to serious games, and (virtual) simulation for health professions education. Organized and led this tutorial at the *Medicine Meets Virtual Reality 2013,* San Diego, USA.	Feb 20-23, 2013
E. Stroulia, M. Galeteanu, P. Pacholski, K. Lyons, P. Messinger, B. Kapralos, M. Seif El-Nasr, and J. Connolly. Virtual worlds for modeling complex processes between people and systems. Tutorial participant at *IBM CASCON 2010,* Canada.	Nov 2, 2010
B. Kapralos, J. Tahsiro, M. Hogan, K, Finney, A. Dubrowski. Serious games: video game-based learning for health education and training. Tutorial participant *Health Professionals Education (HPE) – Global Best Practices in Simulation 2009*. Toronto, Canada	May 21-23, 2009
A. Dubrowski, B. Kapralos, and M. Hogan. Blogs, podcasts and serious games: What should educators know about the learning needs of their students? Tutorial participant *Health Professionals Education (HPE) – Global Best Practices in Simulation 2009*. Toronto, Canada	May 21-23, 2009
K. Collins and B. Kapralos. Panel: An overview of interactive audio: Where are we currently and where are we heading? Organized and participated in this tutorial *Digital Kung-Fu: Interactive Workshop at the Centre for Digital Media*. Vancouver, Canada	May 14 2009
A. Dubrowski, J. Tashiro, K. Finney, and B. Kapralos. Games for health education. Organized and led this tutorial *FuturePlay @ GDC Canada 2009*. Vancouver, Canada	May 12-13**,** 2009
K. Collins, B. Kapralos, D. Kerr, and L. Paul. Panel: Game audio education: Adding audio to your game courses, and games to your audio courses. Organized and led this tutorial at *FuturePlay @ GDC Canada 2009*.	May 12-13, 2009
L. J. Gunter, G. Sinclair, S. Engels, and B. Kapralos. Ontario's got talent. Tutorial participant at	Oct 28-29, 2008

GameON Finance. Toronto, Canada	

- **IEEE Consumer Technology Society**
  - o Vice Chair: Human-Machine Interaction and User Experience (HMI) Technical Committee.

- **Consulting**
  - o Ontario Ministry of Economic Development and Trade. Completed two "Technical Due Diligence" reports for two separate *Strategic Jobs and Investment Fund* invited (applications. March 2011, and May 2011.

- **Grant Reviewer**
  - o Mitacs Accelerate
  - o Greek Diaspora Fellowship Program (GDFP)
  - o Ontario Ministry of Economic Development and Trade, Strategic Jobs, Investment Fund
  - o Ontario Centres of Excellence
  - o Natural Sciences and Engineering Research Council of Canada (NSERC)
  - o United States National Science Foundation\\\

- **Journal Guest Editor**
  - o F. Bellotti, B. Kapralos, K. Lee, and P. Moren-Ger. *Advances in Human-Computer Interaction, Special Issue on User Assessment in Serious Games and Technology-Enhanced Learning*, 2013.
  - o J. Jenson, N. Bojin, and B. Kapralos. *Loading… Special issue: FuturePlay Selected Papers*, Vol 3, No 5 (2009).
- **Journal Reviewer**
  - o IEEE Transactions on Games
  - o The Cureus Journal of Medical Science
  - o IEEE Transactions on Vehicular Technologies
  - o IEEE Transactions on Learning
  - o IEEE Transactions Human-Machine Systems
  - o IEEE Consumer Electronics Magazine
  - o International Journal of Medical Informatics
  - o Health Informatics Journal
  - o Virtual Reality
  - o ACM Computers in Entertainment
  - o Journal of Ambient Intelligence and Smart Environments
  - o Computers in Human Behavior
  - o Cognitive Processing
  - o Entertainment Computing
  - o Computers & Graphics
  - o The International Journal of Technology, Knowledge & Society
  - o IEEE Transactions on Information Technology in BioMedicine
  - o International Journal of Human-Computer Studies
  - o IEEE Transactions on Instrumentations and Measurement
  - o Ageing International
  - o Institution of Engineering and Technology Computer Vision
  - o Transactions on Haptics
  - o Motor Control
  - o ACM Transactions on Applied Perception
  - o Journal of Autonomous Robots
  - o International Journal of Computer Games Technology
  - o Journal of the Acoustical Society of America
  - o Journal of Image and Vision Computing
  - o Journal of Sound and Vibration

- **Media-Related**
  - o Click Magazine. Interview, December 2011, "UOIT: Developing Developers".
  - o Science Media Centre of Canada. Member. March 2011-present.
  - o Gadget Girlz TV Series. Interview, Fall 2010.

- **Committees**
  - o Program Advisory Committee (PAC)**:** Humber College, Faculty of Applied Sciences and Technology (FAST)**,** Electronics Engineerig Technician/TechnologyProgram Advisory Committee (Jan 2018 – present)
  - o Program Development Advisory Committee (PDAC) for Algoma University's Bachelor of Computer Games Technology Degree Program. February 2010-August 2010.

Student Supervision

Current Graduate & Post-Doctoral Student Supervision

Name	Start Date	Thesis Title
Nour Halabi (**PhD**)	Sep. 2025	
Sabine Jamaleddine (**DEd**)	Sep. 2025	
Sandy Abdo (**PhD,** Ontario Graduate Schoalrship recipient)	Sep. 2023	
Cole Craven (**PhD**)	Jan. 2023	
Thomas Gaudi (**PhD**)	Jan 2020	

Past Research Associate Supervision

Name	Start Date	End Date	Project
Hamed Sabri	Jan 2011	Dec 2012	Serious games and 3D modeling
Derek Fullerton (co-supervisor)	Jul 2010	May 2011	Development of a serious game for accounting education and training

Past Graduate and Post-Doctoral Student Supervision

Name	Start Date	End Date	Thesis Title
Andrei Bosco Bezerra Torres (**PhD**, Ontario Trillium Scholarship recipient)		Mar. 2025	The Moirai serious game authoring platform and the gamified educational network
Quinn Daggett (**MSc**)	Jan. 2021	Dec. 2024	A serious game to teach adolescents about the dangers of vaping
Claire Culver (**MSc**)	Sep. 201	Aug. 2024	
Bill Ko (**MSc**) co-supervisor	Sep. 2021	Nov. 2023	investigating the potential of low-cost, consumer-level VR technology for medical simulation and training through laparoscopy simulation
Sandy Abdo (**MSc**)	Sep. 2021	Aug. 2023	Examining the effects of embodiment on performance and learning of drilling actions using pseudo-haptics and standard computer equipment
Robert Savaglio (**MSc**)	Sep. 2019	Apr. 2023	Palatable game development: Lessons learned from Foodbot Factory, accessibility, and audio games
Guoxuan Ning (**MSc**)	Sep 2018	Jan. 2021	Simulating a drilling task using audio, video, and simple kinesthetic Cues
Michael Chan (**MSc**) co-supervisor	Sep 2017	Apr 2020	Development and comparison of augmented and virtual reality interactions for direct ophthalmoscopy
Brent Cowan (**PhD**, NSERC CGS, A. Graham Bell Canada Graduate Scholarship recipient)	Sep 2012	Dec 2019	A graph-based real-time spatial sound framework
Thomas Gaudi (**MSc**)	Sep 2015	Dec 2019	Serious game framework to allow for the development of serious games for autism treatment
Jonathan Umar-Khitab (**MSc**), co-supervisor	Sep 2017	Dec 2019	Investigation on emotional memories and our perception of them over time

Kyle Wilcocks (**MSc**)	May 2017	Aug 2019	Anesthesia crisis scenario builder: The development of an anesthesia crisis scenario builder for virtual reality training
Mirza Beig (**MSc**)	Sep 2015	May 2018	Scalable immersive audio for virtual environments
Mohammed Melaisi (**MSc**)	Sep 2015	Dec 2018	Multimodal (audio-haptic) interactions
Fredderico Filho (**MSc**) co-supervisor	Jan 2017	Dec 2018	Board game accessibility for persons with visual impairment
Robert Shewaga (NSERC PGS Scholarship recipient) (**MSc**)	Sep 2015	Jan 2017	A comparison of seated and room-scale virtual reality on medical-based serious games and virtual simulation
Alvaro Uribe Quevedo (**Post-Doctoral Fellow**)	Sep 2015	Sep 2016	Serious games for medical education and multimodal interactions
Zain Khan (**MSc**)	Jan 2014	Dec. 2015	A serious game for cultural competence education and training.
Mina Tawadrous (**MSc**)	Sep 2011	Aug 2013	A serious game for incidence response training.
Brent Cowan (**MSc**, NSERC PGS M Scholarship recipient)	Sep 2010	Aug 2012	A serious game for total knee arthroplasty (procedure) education
David Rojas Gauldron (**MSc**)	Sep 2010	Aug 2012	Audio and visual fidelity
Jonathan Lam (**MSc**)	Sep 2009	Aug 2012	Auditory interaction techniques for a smart-table computer
Chris Zerebecki (**MSc**) co-supervisor	Sep 2011	Jan 2014	Stereoscopic 3D gaming
Brian Cullen (**Post-Doctoral Fellow**) co-supervisor	May 2011	Jul 2012	Multi-modal stereoscopic 3D

International Visiting Students (Internships)

Name	Start Date	End Date	Thesis Title
Virginia Ermondi (**MSc**). Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Feb. 2025	Jul. 2025	Intelligent tutors for a virtual simulation: Comparing the ChatGPT and Rasa frameworks
Alessandro Visconti (PhD). Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Jan. 2025	Jul. 2025	
Elizabeth Storer (**MSc**). Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Aug. 2024	Nov. 2024	ChatGPT-based virtual assistant for virtual reality-based medical training
Sante Leara Riitano (**MSc**). Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Mar 2024	Jul 2024	Markerless video tracking for medical education
Agazio Riitano (**MSc**). Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Mar 2023	Jul 2023	Development of an intraosseous access serious game.
Fabiola Stancati (**MSc**). Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Mar 2023	Jul 2023	Development of a chatbot (intelligent tutor) for an intraosseous access serious game.
Saverio Cieneri (**MSc**) Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Oct 2018	Feb 2019	Intelligent virtual avatars for virtual simulations

Ana Karen Espinosa Becerra (**Ugrad**), Mitacs Gloalink Research Internship Award (mexico)	May 2018	Aug 2018	Emotion and mood modeling for virtual simulations and serious games
David Acosta Laverde (**Ugrad**) Emerging Leaders in the Americas Program (ELAP) Scholarship recipient (Colombia)	Sep 2017	Jan 2018	Virtual eye fundus and cardiac auscultation training tool development
Luca Micelli (**MSc**) Programma Di Mobilita Verso Paesi Extra-UE/NON ERASMUS+ recipient (Italy)	Sep 2017	Jan 2018	Multimodal interactions
David Leonardo Acosta Laverde (**MSc**) Emerging Leaders in the Americas Program (ELAP) Scholarship recipient (Colombia)	Sep 2017	Jan 2018	Development of a virtual reality-based app for eye fundus examination
Sergio Prada Barrios (**Ugrad**) Emerging Leaders in the Americas Program (ELAP) Scholarship recipient (Colombia)	Sep 2015	Jan 2017	Development of a virtual reality-based app for cardiac auscultation education
Jemar Greaves (**MSc**) Emerging Leaders in the Americas Program (ELAP) Scholarship recipient (Barbados)	Jan 2017	Apr 2017	Development of more believable virtual agents (characters)
Michael Mayers (**MSc**) Emerging Leaders in the Americas Program (ELAP) Scholarship recipient (Barbados)	Jan 2017	Apr 2017	Development of more believable virtual agents (characters)
Shamar Kellman (**MSc**) Emerging Leaders in the Americas Program (ELAP) Scholarship recipient (Barbados)	Jan 2016	May 2016	Development of more believable virtual agents (characters)

Undergraduate Supervision

Undergraduate Student Supervision

Student	Start date	End Date	
Zachary O'brien	May 2024	Aug 2024	Virtual simulations and serious games
Akshat Gupta (NSERC USRA recipient)	May 2023	Aug 2023	Virtual simulations and serious games
Quinn Daggett (NSERC USRA recipient)	May 2020	Aug 2020	Development of a serious game to teach kids about the dangers of vaping
Joss-Moo Young (NSERC USRA recipient)	May 2018	Aug 2018	Development of a virtual haptic-based epidural simulator
Robert Savaglio (NSERC USRA recipient)	May 2017	Aug 2017	Apps for child-based nutritional education
Graham Watson	May 2018	Aug. 2018	Apps for child-based nutritional education
Joss Moo-Young	May 2018	Aug 2018	Immersive technologies for medical education

TEACHING

- **Graduate Courses**
  - CSCI 5010: Survey of Computer Science Research Topics & Methods (Fall 2025, Fall 2023)
  - CSCI 6520G: Advanced Topics in Digital Media (Virtual Learning Environments, and Imm. Tech) (Winter 2025, Winter 2023)
  - CSCI 5550: Auditory Perception and Virtual Audio (Fall 2018)
  - CSCI 5550: Topics in Digital Media: Immersive Technologies (Fall 2017).
  - CSCI 5530: Serious Game Development (Winter 2012, Fall 2013, 2014, 2015)
  - CSCI 5500: Auditory Perception and Virtual Audio (Fall 2010)
  - CSE 6002: Directed Reading: Auditory Perception and Virtual Audio (Fall 2008). York University, Department of Engineering and Computer Science.

- **Undergraduate Courses (UOIT)**
  - INFR 4370: Advanced Game Sound (Winter 2025)

- o INFR 3335: Social and Multiplayer Game Design (Fall 2020)
- o INFR 4400: Special Topics: Immersive Technologies (Fall 2017, Fall 2020)
- o INFR 4400: Special Topics: Gamification (Winter 2017)
- o INFR 1100: Introduction to Programming (Fall 2014)
- o INFR 4391: Special Topics: Serious Games and Simulation (Fall 2025, Fall 2024, Fall 2023, Fall 2021, Fall 2019, Winter 2012, Fall 2013, Winter 2015, 2016)
- o INFR 4350: Virtual Reality and User Interaction (Fall 2008, 2009, 2010).
- o INFR 2350: Intermediate Computer Graphics (Winter 2007, 2008, 2009, 2010, 2011).
- o INFR 2370: Game Sound (Each Winter semester from 2006 – 2021, Fall 2023, Fall 2024).
- o INFR 1350: Introduction to Computer Graphics (Fall 2006, 2007, 2008, 2009, 2010).
- o INFR 2810: Computer Architecture (Winter 2018-2022, Summer 2020-2021, Fall 2007, 2008, 2011, Winter 2014 – 2016).

- **Undergraduate Courses (UOIT, Faculty of Education)**
  - o AEDT 4120: Serious Gaming and Simulations (Online course; Winter 2013, 2015, 2016).

- **Undergraduate Courses (York University, Dept. of Engineering and Computer Science)**
  - o CSE 1020: Introduction to Computer Science I (Summer 2006).
  - o CSE 1030: Introduction to Computer Science II (Summer 2006).
  - o CSE 3301: Programming Language Fundamentals (Summer 2006).
  - o CSE 1530: Computer Use II: Programming (Winter 2006).
  - o COSC 2011: Fundamentals of Data Structures (Winter 2001).

- **Undergraduate Courses (University of Toronto, Dept. of Computer Science)**
  - o CSC 320: Introduction to Visual Computing (Summer 2005).

- **Undergraduate Courses (Humber College, School of Applied Technology)**
  - o ELIC 629: Digital Image Processing (Winter 2005, Fall 2005, Winter 2006).
  - o ELIC 413: Introduction to Programming - C Programming (Fall 2005).

- **"Mini" Courses**
  - o "Vitual Scenrio Design". Simulation Canada MicroCourse Series. 2020.
  - o "Serious Gaming and Simulation": component of the e-Xplorers course (an "intensive introduction on the breadth and depth of using e-simulation and e-blended learning for healthcare education"), *Ontario Simulation Network (SIM-One),* March 4-22, 2013.
  - o "Introduction to Sound for Games". Universidad Pontificia Bolivariana–Bucaramanga, Bucaramanga, Colombia as part of the *Fifth Seminario Internacional de Ingenieria Electronica*.   September 19-24, 2011.
  - o "Introduction to Computer Graphics with OpenGL". UPB*,* Bucaramanga, Colombi*a*. Part of the *Fourth Seminario Internacional de Ingenieria Electronica*, April 2010.
  - o "Introduction to Game Sound". UPB, Bucaramanga, Colombia. Part of the *Seminario Internacional de Ingenieria Electronica*.   April 2010.
  - o "Broadband Technologies and Multimedia Applications". Day-long course delivered to managers from Bank of Montreal as part of their Master's Certificate of Information Technology Management (Executive program) delivered by UOIT's Management Development Centre (MDC). April 2007.