

CURRICULUM VITAE

Jeremy R. Cooperstock

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BIOGRAPHICAL

PERSONAL DATA

Nationality Canadian
Languages English, French and Hebrew
Address Department of Electrical and Computer Engineering, McGill University
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DEGREES AWARDED

Ph.D. Electrical and Computer Engineering, University of Toronto, 1996.
Thesis: “Reactive Environments and Augmented Media Spaces.”
(Nominated for NSERC Doctoral Dissertation Award)
Advisors: Prof. K.C. Smith and Prof. W. Buxton

M.Sc. Computer Science, University of Toronto, 1992.
Thesis: “Neural Network Operated Vision-Guided Mobile Robot Arm
for Docking and Reaching.” Advisor: Prof. E. Milios.

B.A.Sc. Electrical Engineering, Computer Engineering Option, University of
British Columbia, 1990 (Honours)

AWARDS AND DISTINCTIONS

2019 San Diego Opera, Opera Hack award, Hamsafar! (\$10,000, with 5 co-awardees)

2015 Gerald W. Farnell Teaching Scholar, Faculty of Engineering (\$12,500)

2014 US Ignite Best App in Education, [Augmented Reality for Improved Training of First Responders](#)

2013 Canadian National Institute for the Blind, Hochhausen Access Technology Research Award (\$10,000)

2012 Mozilla Foundation and NSF Gold Prize in the Mozilla Ignite Challenge (out of 305 submissions in the Brainstorming Round) (\$5,000) for [Real-Time Emergency Response](#)

2012 Canadian Internet Registry Association .CA Impact Award (Applications category) for In-Situ Audio Services Project (\$5,000)

2009, 2010 Nominee, NSERC Brockhouse Canada Prize

2005 ACM/IEEE Supercomputing, Most Innovative Use of New Technology for [Wide Screen Window on the World: Life Size HD Videoconferencing](#)

2001 Audio Engineering Society Citation Award for [pioneering the technology enabling collaborative multichannel performance over the broadband internet](#)

WORK EXPERIENCE

CAREER HIGHLIGHTS

Autour (with HQP J. Blum, D. El-Shimy, A. Olmos, S. Panëels, F. Grond, and M. Bouchard) is an “eyes-free” app for the blind, which provides a rich, spatialized audio representation of one’s environment [J19, C55, C46, C43]. The project further motivated a rigorous analysis of smartphone sensor reliability, resulting in what was the first comprehensive examination of practical limits on smartphone sensors, including the problems of gyro drift [C46].

Mobile Treatment Device for Amblyopia (with HQP L. To and J. Blum, and in collaboration with ophthalmologist R. Hess) is a patented prototype Mobile Treatment Device for Amblyopia [P7] (“lazy eye”). Initial trials [J18], based on the popular Tetris game, provided highly promising early results [J25, J21], not only restoring the use of both eyes in a majority of patients but even resulting in binocular (3D) depth perception in some. Most significantly, the treatment has been found to work successfully on adult populations, whereas the prevailing wisdom had been that treatment was only possible on children. The technology has now been acquired by Novartis, who are commercializing the system.

Real-Time Emergency Response (rtER) (with HQP S. Smith, J. Blum, A. Eichhorn, J. Anlauff, S. Beniak, N. Jain, and S. Salenikovich) provides an envisionment of the future of next-generation 911 (NG-911) technologies, supporting enhanced situational awareness for first responders through the use of citizen-supplied smartphone video streams and other relevant data [J11]. Our work was recognized by the *Gold Prize* from the Mozilla Ignite Fund, featured on the web site of the White House Office of Science and Technology, and prompted the launch of a funding program by the U.S. Department of Justice.

Natural Interactive Walking (with HQP Y. Visell, A. Law, G. Millet, M. Otis, and S. Panëels) investigated multimodal interaction with virtual ground surfaces, resulting in important findings of tactile discrimination ability [J20] and the role of vibrotactile stimulation in perception of compliance [J26]. Our “Ecotile” prototype (patent [P4]) was showcased at numerous venues including SIGGRAPH, and led to related research involving limb modeling [C57, C41, C35], foot-water interaction [J13], and variable-friction walking interfaces [C51, C42, J4].

Ultra-Videoconferencing is our low-latency, high-fidelity network transport, used for distance music teaching with Maestro Pinchas Zuckerman, cross-continental jazz jams, and remote sign language interpretation. The *Globe and Mail* described Cooperstock’s 2001 demonstration as “a watershed event for the elite club of the world’s computer network engineers.” Ultra-Videoconferencing garnered my research group a prestigious Citation Award from the Audio Engineering Society and the Award for Most Innovative Use of New Technology from ACM/IEEE Supercomputing (2005). This research directly constituted the basis for subsequent funding of \$2.2M from Valorisation Recherche Quebec and over \$4M from Canarie, and influenced the designs of similar telepresence videoconferencing systems from Cisco, HP, and Polycom. Our follow-up work on **Open Orchestra** (with HQP N. Bouillot, A. Olmos, T. Knight, M. Tomiyoshi), resulted in an immersive simulator for orchestral training, used by professional and semi-professional musicians [J17].

ACADEMIC EXPERIENCE

- January 2018 – present** – **McGill University, Montreal, QC**
Full Professor, Electrical and Computer Engineering.
Director, Shared Reality Lab; supervised over 50 graduate students, post-doctoral fellows, and research associates
- September 2018 – June 2019** – **Technion–Israel Institute of Technology, Haifa, Israel**
Visiting Professor, Industrial Engineering and Management
- September 2018 – June 2019** – **IDC, Herzliya, Israel**
Visiting Professor, Department of Computer Science
- May 2003 – Dec. 2017** – **McGill University, Montreal, QC**
Associate Professor, Electrical and Computer Engineering
- Aug. 2011 – Jul. 2012** – **University of Auckland, New Zealand**
Invited Professor, Department of Computer Science
- May–June 2009** – **Bang & Olufsen, Denmark**
Visiting Professor, World Opera Project
- Jan 2009 – present** – **Bielefeld University, Germany**
Virtual Member, Center of Excellence Cognitive Interaction Technology (CITEC)
- Feb 2008** – **Arizona State University**
Visiting Scholar, School of Arts, Media and Engineering
- Sep. 2004 – Aug. 2005** – **Université de Paris VI, Paris France**
Invited Professor, Laboratoire des Instruments et Systemes d’Ile-de-France
- Apr. 2000 – present** – **McGill University, Montreal, QC**
Associate Member, Faculty of Music, Department of Theory.
- Nov. 1997 – May 2003** – **McGill University, Montreal, QC**
Assistant Professor, Electrical and Computer Engineering.

INDUSTRIAL AND CONSULTING EXPERIENCE

- Sep. 2019 – present** – **RedPill Canada VR, Montreal**
Director and Advisor
- Apr. – Jun. 2019** – **(Confidential project as consulting expert)**
Providing expert report on topics concerning Human-Computer Interaction.
- Aug. – Nov. 2014** – **Menya Solutions and DRDC-Valcartier**
Providing expert advice related to human-computer interfaces, visualization, and collaboration.
- August 2012** – **Tamaggo Inc.**
Provide guidance and advice on digital imagery
- May 2012** – **York University**
Review draft application to Canada Excellence Research Chairs program
- May 2002 – Nov. 2003** – **Solicitor General of Canada**
Media streaming configuration and user interface design.
- May 2001** – **National Research Council**
Instructor of short course in Soft Computing, Institut des Matériaux Industriels.
- Jan. – Sep. 1999** – **Audio Engineering Society**
Technical leader of demonstration of multichannel and multimedia audio distribution
- Jan. – Aug. 1999** – **Ontario Science Center**
Scientific Director of Timescape Millenium Exhibit
- July 1998** – **Nortel**
Instructor of short course in videoconferencing systems for the Nortel International SL-1 User's Association (ILUA), Long Beach
- Sep. 1996 – Oct. 1997** – **Sony Computer Science Laboratory**
Visiting Researcher, Sony Computer Science Laboratory, Tokyo, Japan. Developed speech-interface controlled VCR with visual tape database functionality. Wrote two patent applications, one filed.
- June – Aug. 1990** – **Fibronics Research**
Visiting Researcher, Fibronics Advanced Research Center, Haifa, Israel. Developed and tested an FDDI-to-token ring bridge.
- May – Aug. 1989** – **IBM T.J. Watson Research Center**
Research Intern, IBM T.J. Watson Research Center, Yorktown Heights, NY. Improved implementation of a VLIW architecture simulator.

LITIGATION AND EXPERT WITNESS EXPERIENCE

- December 2019 ongoing** – **US District Court**
Expert witness for Apple on behalf of Fish & Richardson in *Pinn Inc., Petitioner v. Apple Inc.*, United States District Court, Case No. 8:19-cv-1805. Involved in preparation of three expert witness declarations and code analysis involving multiple products related to earbud and charging units.
- October 2019** – **US Patent and Trademark Office**
Expert witness for Apple on behalf of Fish & Richardson in *Apple Inc., Petitioner v. Qualcomm Inc.*, United States Patent and Trademark Office Case IPR2018-01279. Deposition on expert witness declaration related to multimedia messaging.
- May 2018** – **US Patent and Trademark Office**
May 2019 – Expert witness for Samsung on behalf of Fish & Richardson in *Samsung Electronics Co., Ltd., Petitioner v. Immersion Corporation*, United States Patent and Trademark Office Case IPR2018-01499. Consulted on technical details and involved in preparation of two expert witness declarations related to haptic feedback effects and force feedback in a multimodal system.
- May 2016** – **Canadian Transportation Agency**
Nov. 2017 – Brought successful complaint against Air Canada for the airline’s making false or misleading statements to the public, Decision No. 105-C-A-2017 (otc-cta.gc.ca/eng/ruling/105-c-a-2017)
- Jan. – May 2014** – **Ontario Superior Court**
Provided expert report on web server location in *St. Lewis v. Rancourt*, Ontario Superior Court File No. 11-51657
- Mar. – Sep. 2013** – **Quebec Court of Appeal**
Brought and argued successful appeal regarding anti-SLAPP legislation in *United Airlines v. Cooperstock*, Decision 2013 QCCA 1670 (goo.gl/pgz301). Argued appeal in person (September 26, 2013)
- Nov. 2012** – **Federal Court of Canada**
Aug. 2017 – Pro se litigant in *United Airlines v. Cooperstock*, Federal Court File No. T-2084-12. Deposition as litigant (August 2013) and testified at trial (December 2016).
- Nov. 2012** – **Quebec Superior Court**
Jan. 2017 – Pro se litigant in *United Airlines et al. v. Cooperstock*, Quebec Superior Court File No. 500-17-074743-124 (untied.com/SLAPP). Deposition as litigant (October 2014) and testified at trial (April 2016).
- September 2012** – **Canadian Transportation Agency**
Provided expert report on database query and execution times on behalf of Gabor Lukacs in *Gábor Lukács against Air Canada*, File No. M4120-3/11-06673, Decision No. 204-C-A-2013

May 2007 – Quebec Superior Court

Jan. 2008 Expert witness in *Market Maker System Corporation c. Brim Solutions inc.*, software-related intellectual property case. Quebec Superior Court File No. 500-17-036750-076. Provided expert witness report and testified in court (October 2007) for Brim Solutions on behalf of Boucher Harper.

Feb. – Oct. 2004 Crawford Adjusters Canada

Provided analysis of artifacts in high definition video

Jul. 2002 – Court of Quebec, Small Claims Division

May 2016 Brought 14 consumer rights complaints before the Court, 11 of which were successful

RESEARCH DISSEMINATION

Notes on publication strategy: In my research field, papers in the ACM CHI (H5-index=87), UIST (H5-index=46), DIS (H5-index=33), and Mobile HCI (H5-index=28) conferences are considered to be top-tier, archival publications, competitive with the top HCI journals in terms of impact and visibility. Overall acceptance rates for these conferences are typically in the 20-25% range. As a measure of research impact, my publications have garnered over 4000 citations to date (Google Scholar) with approximately half of these since 2015, an h-index of 33, and i10-index of 86. HQP under my supervision (names in bold) are typically given first authorship on co-authored work.

ARTICLES IN REFEREED PUBLICATIONS

- [J1] **P. Vyas, F. Al-Taha, J. R. Blum, A. Weill-Duflos**, and J. R. Cooperstock. “Ten Little Fingers, Ten Little Toes: Can Toes Match Fingers for Haptic Discrimination?” In: *Transactions on Haptics* 13.1 (2020). DOI: [10.1109/TOH.2020.2966969](https://doi.org/10.1109/TOH.2020.2966969). URL: <https://ieeexplore.ieee.org/document/8960637>. Also presented at Haptics Symposium 2020.
- [J2] **E. Sulmont**, E. Patitsas, and J. R. Cooperstock. “What Is Hard About Teaching Machine Learning to Non-Majors? Insights From Classifying Instructors’ Learning Goals.” In: *Transactions on Computing Education, Special Issue on Machine Learning Education* 19.4 (Aug. 2019). URL: <http://dl.acm.org/authorize?N682238>.
- [J3] **J. Blum, P. Fortin, F. Al-Taha, P. Alirezaee, M. Demers, A. Weill-Duflos**, and J. R. Cooperstock. “Getting Your Hands Dirty Outside the Lab: A Practical Primer for Conducting Wearable Vibrotactile Haptics Research.” In: *IEEE Transactions on Haptics, Special Issue on Wearable and Hand-held Haptics* 12.3 (July 2019), pp. 232–246. DOI: [10.1109/TOH.2019.2930608](https://doi.org/10.1109/TOH.2019.2930608). URL: <https://ieeexplore.ieee.org/document/8770138>.
- [J4] **G. Millet, M. Otis, D. Horodniczy**, and J. R. Cooperstock. “Design of Variable-Friction Devices for Shoe-Floor Contact.” In: *Mechatronics* 46 (2017), pp. 115–125. URL: <https://www.sciencedirect.com/science/article/abs/pii/S0957415817301034>.
- [J5] **P. Fortin** and J. R. Cooperstock. “Laughter and Ticks: Toward Novel Approaches for Emotion and Behavior Elicitation.” In: *IEEE Transactions on Affective Computing* 8.4 (2017). TAFFCSI-2016-07-0124.R1, pp. 508–521. URL: <http://ieeexplore.ieee.org/document/8052511/>.
- [J6] E. Aguilera, J. J. Lopez, and J. R. Cooperstock. “Spatial Audio for Audioconferencing in Mobile Devices: Investigating the Importance of Virtual Mobility and Private Communication and Optimizations.” In: *Journal of the Audio Engineering Society* 64.5 (May 2016), pp. 332–341. URL: <http://www.aes.org/e-lib/browse.cfm?elib=18138>.
- [J7] **D. El-Shimy** and J. R. Cooperstock. “User-Driven Techniques for the Design and Evaluation of New Musical Interfaces.” In: *Computer Music Journal* 40.2 (2016), pp. 35–46. URL: http://www.mitpressjournals.org/doi/pdf/10.1162/COMJ_a_00357.

- [J8] **F. Tordini**, A. Bregman, and J. R. Cooperstock. “Prioritizing foreground selection of natural chirp sounds by tempo and spectral centroid.” In: *Multimodal User Interfaces, Special Issue on Auditory Display* 10.3 (Sept. 2016). Ed. by B.F.G. Katz and G. Marentakis, pp. 221–234. URL: <http://link.springer.com/article/10.1007%2Fs12193-016-0223-x>.
- [J9] R. F. Hess, **L. To**, J. Zhou, **G. Wang**, and J.R. Cooperstock. “3D Vision: the haves and havenots.” In: *i-Perception* 6.3 (July 2015). DOI: [10.1177/2041669515593028](https://doi.org/10.1177/2041669515593028). URL: <http://ipe.sagepub.com/content/6/3/2041669515593028.full.pdf+html>.
- [J10] **N. Hieda** and J. R. Cooperstock. “Digital Facial Augmentation for Interactive Entertainment.” In: *EAI Endorsed Transactions on e-Learning* 15.8 (Aug. 2015). DOI: [10.4108/icst.intetain.2015.259444](https://doi.org/10.4108/icst.intetain.2015.259444).
- [J11] **J. Blum**, **A. Eichhorn**, **S. Smith**, **M. Sterle-Contala**, and J. R. Cooperstock. “Real-Time Emergency Response: Improved Management of Real-Time Information During Crisis Situations.” In: *Multimodal User Interfaces* 8.2 (July 2014). JMUI-D-13-00047R3, pp. 161–173. DOI: [10.1007/s12193-013-0139-7](https://doi.org/10.1007/s12193-013-0139-7). URL: <http://www.springer.com/alert/urltracking.do?id=L4b94d11Mf77f37Sb05893a>.
- [J12] **D. Dansereau**, N. Brock, and J. R. Cooperstock. “A Particle Filter for Predicting an Orchestral Conductor’s Baton Movements.” In: *Computer Music J.* 37.2 (Apr. 2013), pp. 28–45. URL: http://www.mitpressjournals.org/doi/pdf/10.1162/COMJ_a_00173.
- [J13] **G. Cirio**, M. Marchal, A. Lécuyer, and J. R. Cooperstock. “Vibrotactile Rendering of Splashing Fluids.” In: *Transactions on Haptics* 6.1 (May 2013), pp. 117–122. URL: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6226398. 🏆 Best paper award.
- [J14] F. Grond, **A. Olmos**, and J. Cooperstock. “Making Sculptures Audible through Participatory Sound Design (Artists’ statement).” In: *Leonardo Music J.* 23 (Dec. 2013), pp. 12–13. DOI: [doi:10.1162/LMJ_a_00140](https://doi.org/10.1162/LMJ_a_00140). URL: <http://srl.mcgill.ca/publications/2013-LEONARDO.pdf>.
- [J15] **J. Blum**, **M. Bouchard**, and J. R. Cooperstock. “Spatialized audio environmental awareness for blind users with a smartphone.” In: *Mobile Networks and Applications* 18.3 (June 2013), pp. 295–309. DOI: [10.1007/s11036-012-0425-8](https://doi.org/10.1007/s11036-012-0425-8). URL: <http://srl.mcgill.ca/publications/2012-MONET.pdf>.
- [J16] **S. Pelletier** and J. R. Cooperstock. “Real-time free viewpoint video from a range sensor and color cameras.” In: *Machine Vision and Applications* 24.4 (May 2013), pp. 739–751. URL: <http://link.springer.com/article/10.1007%2Fs00138-012-0428-2>.
- [J17] **A. Olmos**, **N. Bouillot**, **T. Knight**, **N. Mabire**, **J.Redel**, and J. R. Cooperstock. “A High-Fidelity Orchestra Simulator for Individual Musicians’ Practice.” In: *Computer Music Journal* 36.2 (2012), pp. 55–73. URL: http://www.mitpressjournals.org/doi/pdf/10.1162/COMJ_a_00119.
- [J18] J. M. Black, R. F. Hess, J. R. Cooperstock, **L. To**, and B. Thompson. “The measurement and treatment of suppression in amblyopia.” In: *Visualized Experiments* 14.70 (Dec. 2012). DOI: [10.3791/3927](https://doi.org/10.3791/3927). URL: <http://www.jove.com/video/3927/the-measurement-and-treatment-of-suppression-in-amblyopia>.

- [J19] **D. El-Shimy**, F. Grond, **A. Olmos**, and J. R. Cooperstock. “Eyes-Free Environmental Awareness for Navigation.” In: *Multimodal User Interfaces, Special Issue on Interactive Sonification* 5.3-4 (2012), pp. 131–141. DOI: [10.1007/s12193-011-0065-5](https://doi.org/10.1007/s12193-011-0065-5). URL: <http://www.springerlink.com/content/857h542884084q12/>.
- [J20] B. L. Giordano, **Y. Visell**, H.-Y. Yao, V. Hayward, J. R. Cooperstock, and S. McAdams. “Identification of walked-upon materials in auditory, kinesthetic, haptic and audio-haptic conditions.” In: *Acoustical Society of America* 131.5 (May 2012). URL: <http://srl.mcgill.ca/publications/2012-JASA.pdf>.
- [J21] R. F. Hess, B. Thompson, J. M. Black, G. Maehara, P. Zhang, W. R. Bobier, **L. To**, and J. R. Cooperstock. “An iPod treatment for amblyopia: An updated binocular approach.” In: *Optometry* 83.2 (Feb. 2012), pp. 87–94. URL: <http://www.ncbi.nlm.nih.gov/pubmed/23231369>.
- [J22] **S. Pelletier** and J. R. Cooperstock. “Preconditioning for Edge-Preserving Image Super-Resolution.” In: *IEEE Transactions on Image Processing* 21.1 (June 2012), pp. 67–79. URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5898412>.
- [J23] **Z. Qi** and J. R. Cooperstock. “Toward Dynamic Image Mosaic Generation With Robustness to Parallax.” In: *IEEE Transactions on Image Processing* 21.1 (Jan. 2012), pp. 366–378. URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5959979>.
- [J24] J. R. Cooperstock. “Multimodal Telepresence Systems: Supporting Demanding Collaborative Human Activities.” In: *IEEE Signal Processing* 28.1 (Jan. 2011). special issue on Immersive Communications, pp. 77–86. DOI: [10.1109/MSP.2010.939040](https://doi.org/10.1109/MSP.2010.939040).
- [J25] **L. To**, B. Thompson, **J.R. Blum**, G. Maehara, R. Hess, and J. R. Cooperstock. “A game platform for treatment of amblyopia.” In: *IEEE Transactions on Neural Systems and Rehabilitation Engineering* 19.3 (Feb. 2011), pp. 280–289. URL: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5713843>.
- [J26] **Y. Visell**, B.L. Giordano, **G. Millet**, and J. R. Cooperstock. “Vibration Influences Haptic Perception of Surface Compliance During Walking.” In: *PLoS ONE* 6.3:e17697 (Mar. 2011). DOI: [doi:10.1371/journal.pone.0017697](https://doi.org/10.1371/journal.pone.0017697). URL: <http://dx.plos.org/10.1371/journal.pone.0017697>.
- [J27] **R. Pellerin**, **N. Bouillot**, **T. Pietkiewicz**, M. Wozniowski, Z. Settel, E. Gressier-Soudan, and J. R. Cooperstock. “SoundPark: Exploring Ubiquitous Computing through a Mixed Reality Multi-player Game Experiment.” In: *Studia Informatica Universalis* 8.3 (2010). Special Issue: Best Papers from NOTERE 2009, 21 pages. URL: <http://srl.mcgill.ca/publications/2009-NOTERE.pdf>.
- [J28] R. H. Ellaway, D. Topps, K. Lachapelle, and J. R. Cooperstock. “Integrating Simulation Devices and Systems.” In: *Studies in Health Technology and Informatics* 142 (Jan. 2009). Ed. by James D. Westwood, Susan W. Westwood, Randy S. Haluck, Helene M. Hoffman, Greg T. Mogel, Roger Phillips, Richard A. Robb, and Kirby G. Vosburgh, pp. 88–90. URL: <http://srl.mcgill.ca/publications/2009-MMVR-Ellaway.pdf>.

- [J29] **G. Wang**, L. Mercier, D. L. Collins, and J. R. Cooperstock. “A Comparative Study of Monoscopic and Stereoscopic Display for a Probe-Positioning Task.” In: *Studies in Health Technology and Informatics* 142 (Jan. 2009). Ed. by James D. Westwood, Susan W. Westwood, Randy S. Haluck, Helene M. Hoffman, Greg T. Mogel, Roger Phillips, Richard A. Robb, and Kirby G. Vosburgh, pp. 417–419. URL: <http://srl.mcgill.ca/publications/2009-MMVR-Wang.pdf>.
- [J30] V. N. Salimpoor, **M. Benovoy**, G. Longo, J. R. Cooperstock, and R. J. Zatorre. “The Rewarding Aspects of Music Listening are Related to Degree of Emotional Arousal.” In: *PLoS ONE* 4.10:e7487 (2009). DOI: [10.1371/journal.pone.0007487](https://doi.org/10.1371/journal.pone.0007487). URL: <http://dx.plos.org/10.1371/journal.pone.0007487>.
- [J31] **Y. Visell**, **A. Law**, and J. R. Cooperstock. “Touch Is Everywhere: Floor Surfaces as Ambient Haptic Interfaces.” In: *IEEE Transactions on Haptics* 2.3 (July 2009), pp. 148–159. DOI: [10.1109/TOH.2009.31](https://doi.org/10.1109/TOH.2009.31). URL: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5166445.
- [J32] **W. Sun** and J. R. Cooperstock. “An Empirical Evaluation of Factors Influencing Camera Calibration Accuracy Using Three Publicly Available Techniques.” In: *Machine Vision and Applications Journal* 17.1 (Feb. 2006), pp. 51–67. DOI: [10.1007/s00138-006-0014-6](https://doi.org/10.1007/s00138-006-0014-6). URL: <http://www.springerlink.com/content/5824738r1w66v6wl/>.
- [J33] W. Woszczyk, J. R. Cooperstock, J. Roston, and W. Martens. “Shake, Rattle and Roll: Getting Immersed in Multisensory, Interactive Music via Broadband Networks.” In: *Journal of the Audio Engineering Society* 53.4 (Apr. 2005), pp. 336–344. URL: <http://www.aes.org/e-lib/browse.cfm?elib=13416>.
- [J34] **J. Yin** and J. R. Cooperstock. “Color Correction Methods with Applications to Digital Projection Environments.” In: *Journal of Winter School of Computer Graphics* 12.3 (2004), pp. 499–506. URL: <http://srl.mcgill.ca/publications/2004-WSCG-color.pdf>.
- [J35] L. R. Winer and J. R. Cooperstock. “The “Intelligent Classroom”: Changing teaching and learning with an evolving technological environment.” In: *Journal of Computers and Education* 38 (2002), pp. 253–266. URL: <http://srl.mcgill.ca/publications/2002-CAE.pdf>.
- [J36] **A. Xu**, W. Woszczyk, Z. Settel, B. Pennycook, R. Rowe, P. Galanter, J. Bary, G. Martin, J. Corey, and J. R. Cooperstock. “Real-Time Streaming of Multichannel Audio Data over Internet.” In: *Journal of the Audio Engineering Society* 48.7/8 (July 2000), pp. 627–641. URL: <http://srl.mcgill.ca/publications/2000-JAES.pdf>.
- [J37] J. R. Cooperstock, S. S. Fels, W. Buxton, and K. C. Smith. “Reactive Environments: Throwing Away Your Keyboard and Mouse.” In: *Communications of the ACM* 40.9 (Sept. 1997), pp. 65–73. URL: <http://dl.acm.org/authorize?N06288>.
- [J38] J. R. Cooperstock and E. Milios. “Self-supervised learning for docking and target reaching.” In: *Journal of Robotics and Autonomous Systems* 11 (1993), pp. 243–260. DOI: [10.1016/0921-8890\(93\)90029-C](https://doi.org/10.1016/0921-8890(93)90029-C). URL: <http://srl.mcgill.ca/publications/1993-JRAS.pdf>.

REFEREED CONFERENCE PUBLICATIONS

- [C1] **A. Weill-Duflos, P. Fortin, F. Al-Taha**, and J. R. Cooperstock. “Haptic Augmentation of Audio and its Effects on Speech Perception.” In: *International Workshop on Haptic and Audio Interaction Design*. Montreal, Canada, June 2020. URL: <https://hal.archives-ouvertes.fr/hal-02901210>.
- [C2] A. Farooq, H. Tan, A. Weill–Duflos, J. R. Cooperstock, and R. Raisamo. “Embedded Haptic Waveguides to Improve Tactile Feedback: Designing a Custom 3D-Printed Surface to Enhance Signal Mediation.” In: *Sensors*. Oct. 2020.
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- [CP15] **C. Côté, S. Arseneau**, and J. R. Cooperstock. “Telepresence with no Strings Attached: An Architecture for a Shared Reality Environment.” In: *Second International Symposium on Mixed Reality (ISMR)*. Yokohama, Japan, Mar. 2001. URL: <http://srl.mcgill.ca/publications/2001-ISMR.pdf>.
- [CP16] **S. Arseneau** and J. R. Cooperstock. “Automated Camera Tracking in a Real-World Environment.” In: Montreal, QC, Canada, 2000.
- [CP17] J. R. Cooperstock. “Rethinking the Remote Control.” In: *HCI International, Conference on Human-Computer Interaction*. San Francisco, CA, USA, Aug. 1997, p. 116.

BOOK CHAPTERS

- [B1] **T. Kim, J. Blum, P. Alirezaee, A. Arnold, P. Fortin**, and J. R. Cooperstock. “Usability of Foot-Based Interaction Techniques for Mobile Solutions.” In: *Mobile Solutions and Their Usefulness in Everyday Life*. Springer International Publishing AG, Jan. 2019, pp. 309–329. DOI: https://doi.org/10.1007/978-3-319-93491-4_16. URL: https://link.springer.com/chapter/10.1007/978-3-319-93491-4_16.
- [B2] **M. Wozniowski**, Z. Settel, and J. R. Cooperstock. “Sonic Interaction via Spatial Arrangement in Mixed Reality Environments.” In: *Sonic Interaction Design*. Ed. by K. Franinovic and S. Serafin. MIT Press, 2013, pp. 329–340. URL: <http://xplorebc paz.ieee.org/xpl/login.jsp?tp=&arnumber=6504636>.

- [B3] M. Marchal, **G. Cirio**, **Y. Visell**, F. Fontana, S. Serafin, J. R. Cooperstock, and A. Lécuyer. “Multimodal Rendering of Walking over Virtual Grounds.” In: *Human Walking in Virtual Environments*. Ed. by Y. Visell, A. Lécuyer, F. Steinicke, and J. Campos. Springer Verlag, 2013, pp. 263–295. URL: <http://www.springer.com/engineering/robotics/book/978-1-4419-8431-9>.
- [B4] **Y. Visell** and J. R. Cooperstock. “Interacting with augmented floor surfaces.” In: *Human Walking in Virtual Environments*. Ed. by Y. Visell, A. Lécuyer, F. Steinicke, and J. Campos. Springer Verlag, 2013, pp. 377–399. URL: <http://www.springer.com/engineering/robotics/book/978-1-4419-8431-9>.
- [B5] **Y. Visell**, **R. Rajalingham**, and J. R. Cooperstock. “A review of nonvisual signatures of human walking with applications to person tracking in augmented environments.” In: *Walking with the senses: Perceptual techniques for walking in virtual environments*. Ed. by Y. Visell and F. Fontana. Logos Verlag, 2012, pp. 33–68.
- [B6] **Y. Visell**, **S. Smith**, and J. R. Cooperstock. “Distributed human-computer interaction with augmented floor surface.” In: *Walking with the senses: Perceptual techniques for walking in virtual environments*. Ed. by Y. Visell and F. Fontana. Logos Verlag, 2012, pp. 15–32.
- [B7] J. R. Cooperstock. “Human-Computer Interaction.” In: *Wiley Encyclopedia of Computer Science and Engineering*. Ed. by Benjamin W. Wah. Vol. 3. Wiley-Interscience, Mar. 2009, pp. 1529–1542. DOI: [10.1002/9780470050118.ecse524](https://doi.org/10.1002/9780470050118.ecse524). URL: <http://onlinelibrary.wiley.com/doi/10.1002/9780470050118.ecse524/abstract>.
- [B8] **F. Aubé** and **R. Shield**. “Modeling the Effect of Leadership on Crowd Flow Dynamics.” In: *Cellular Automata*. Ed. by Peter Sloot, Bastien Chopard, and Alfons Hoekstra. Vol. 3305. Lecture Notes in Computer Science. originally presented in International Conference on Cellular Automata for Research and Industry. Amsterdam: Springer Berlin / Heidelberg, Oct. 2004, pp. 601–611. URL: http://dx.doi.org/10.1007/978-3-540-30479-1_62.

OTHER REFEREED PUBLICATIONS

- [O1] **N. Hieda** and J. R. Cooperstock. *SharedFace2*. International Conference and Exhibition of Virtual Technologies and Uses: Laval Virtual ReVolution (refereed interactive demonstration). Laval, France, Apr. 2015.
- [O2] **Y. Visell**, **G. Millet**, and J. R. Cooperstock. *Haptic Display via a Vibrating, Rigid Surface*. Demonstration in IEEE Haptics Symposium. Waltham, MA, USA, Mar. 2010.
- [O3] **A. Law**, **J. Ip**, **B. Peck**, **Y. Visell**, P. Kry, and J. R. Cooperstock. *A Multimodal Floor for Virtual Environments*. Demonstration in SIGGRAPH Emerging Technologies. Aug. 2009.
- [O4] **M. Wozniowski**, Z. Settel, and J. R. Cooperstock. *Ménagerie Imaginaire*. Artwork Performance in New Interfaces for Musical Expression (NIME). New York, NY, USA, June 2007.

NON-REFEREED CONTRIBUTIONS

- [N1] J.R. Cooperstock. “Situating UbiComp Education within or distinct from HCI?” In: *Ubiquitous Computing Education: Why, What, and How*: ed. by Audrey Girouard, Andrew L. Kun, Anne Roudaut, and Orit Shaer. Vol. 9. 6. Dagstuhl, Germany: Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Mar. 2019. URL: <http://drops.dagstuhl.de/opus/volltexte/2019/11460>.
- [N2] **E. Sheepy**, M. Orjuela-Laverde, and J. R. Cooperstock. “Encouraging active and collaborative learning in two engineering courses.” In: *Supporting Active Learning and Technological Innovation in Studies of Education*. Montreal, Canada, June 2016.
- [N3] J. R. Cooperstock and G. Lukács. *How to complain to airlines*. CBC Marketplace blog. Mar. 2014. URL: <http://www.cbc.ca/marketplace/blog/plane-wrong-how-to-complain-to-airlines>.
- [N4] **F. Tordini** and J. R. Cooperstock. “Auditory salience modeling via streaming: A behavioural view.” In: *Milestones in Music Cognition: BKN 25*. Montreal, Canada, July 2014.
- [N5] J. R. Cooperstock. “Overcoming Complexity in the Teaching and Learning Environment.” In: *Materials Science and Technology*. Ralph Lloyd Harris Memorial Symposium. Montreal, Oct. 2013.
- [N6] J. R. Cooperstock. *From Rehearsal to Performance: Ensemble Learning in Open Orchestra and Distributed Rehearsal for World Opera*. Presentation in Music Anywhere, Anytime: International Symposium on Synchronous Distance Learning. Oct. 2011.
- [N7] **Benovoy, M.**, J.R. Cooperstock, and M. Levine. *Real-Time Facial Recognition*. Phase II Project Report for Department of National Defence. 2010.
- [N8] M. Levine, **Benovoy, M.**, and J.R. Cooperstock. *An Automatic Real-Time Facial Recognition System*. Phase I Project Report for Department of National Defence. 2009.
- [N9] **N. Bouillot**, E. Cohen, J. R. Cooperstock, A. Floros, N. Fonseca, R. Foss, M. Goodman, J. Grant, K. Gross, S. Harris, B. Harshbarger, J. Heyraud, L. Jonsson, J. Narus, M. Page, T. Snook, A. Tanaka, J. Trieger, and U. Zanghieri. “AES White Paper AESTD1003V1: Best Practices in Network Audio.” In: *Journal of the Audio Engineering Society* 57.9 (Sept. 2009), pp. 729–741. URL: <http://www.aes.org/e-lib/browse.cfm?elib=14839>.
- [N10] V. N. Salimpoor, **M. Benovoy**, G. Longo, J. R. Cooperstock, and R. J. Zatorre. *Qualifying the Chills Response: Differences between Transient and Prolonged Chills in Response to Music*. Presentation in Auditory Perception, Cognition, and Action Meeting. Chicago, IL, USA, 2008.
- [N11] J.R. Cooperstock. “Plus de largeur du bande, s’il vous plaît.” In: *L’interdisciplinarité dans les sciences et technologies de la musique (invited)*. Montreal: Association francophone pour le savoir (ACFAS), May 2006.
- [N12] J.R. Cooperstock. “Integrating Communication with Interaction: Computer Vision Challenges for Interactive and Intelligent Environments.” In: *Workshop on Computer Vision for Interactive and Intelligent Environments (invited)*. Lexington, KY, USA, Nov. 2005. URL: <http://srl.mcgill.ca/publications/2005-CV4IIE.pdf>.

- [N13] J.R. Cooperstock, J. Roston, and Woszczyk. “Broadband Networked Audio: Entering the Era of Multisensory Data Distribution.” In: *18th International Congress on Acoustics (invited)*. Kyoto, Apr. 2004.
- [N14] **Cayouette, F., Sud, D., Patel, K., Sarikaya, D.,** and J.R. Cooperstock. “McGill Reddogs Final Report.” In: *Robocup*. 2002.
- [N15] J.R. Cooperstock. “Classroom of the Future: Enhancing Education through Augmented Reality.” In: *HCI International, Conference on Human-Computer Interaction (invited)*. New Orleans, 2001.
- [N16] **Sud, D., Cayouette, F., Gu, J.,** and J.R. Cooperstock. “McGill Reddogs Final Report.” In: *Robocup*. 2001.
- [N17] A. Saroyan, R. Harris, and J. R. Cooperstock. *Applying pedagogical principles to teaching and learning with technology*. Multi-cultural perspectives on the use of technology in education. Montreal, QC, Canada, 2000. URL: <http://www.education.mcgill.ca/NAFTA>.

PATENTS

- [P1] J. R. Cooperstock, **A. Weill-Duflos, J. Regimbal, N. Radi, J. Blum, P. Alirezaee,** and **Y. Zhang**. “Multi-signal rendering through a single haptic actuator.” provisional application US 63/006,141 (United States). 2020.
- [P2] **P. Fortin,** S. Kim, and J. R. Cooperstock. “Closed-loop XR Stimulus Presentation and Perception Feedback using Multi-Channel Physiological Signals.” provisional application US 2020P00157 (United States). 2020.
- [P3] J. R. Cooperstock and **J. Blum**. “Improving Haptic Feedback on Wearable Devices through Accelerometer Measurements.” provisional application US 62/237,772; US 62/416,910 (United States). 2015.
- [P4] J. R. Cooperstock, **Y. Visell, A. Law,** and K. Franinovic. “Floor-based Haptic Communication System.” US 9,041,521 (United States). May 2015.
- [P5] J. R. Cooperstock, **J. Blum, M. Bouchard, A. Olmos, S. Panëels,** and **D. El-Shimy**. “Spatialized audio augmented reality for blind users with a smartphone.” provisional application US 61/727,828 (expired) (United States). 2012.
- [P6] J. R. Cooperstock, **G. Millet,** and **M. Otis**. “Floor-Based Variable Friction Display.” provisional application US 61/577,148 (expired) (United States). 2011.
- [P7] J. R. Cooperstock, **L. To,** and R. Hess. “A Tetris-style gaming approach to treat amblyopia.” US 8,066,372 (United States). Nov. 2011.
- [P8] J. Roston, J. R. Cooperstock, J. MacDougall, and **S. Spackman**. “Remote sign language interpretation system.” US 60/463,332; CA 2,426,161; US 7,395,200 (United States). Feb. 2003.
- [P9] **S. Spackman, S. Pelletier,** and J. R. Cooperstock. “High-resolution Video Synthesis.” application 2,435,791 filed July 24, 2003 (expired) (Canada). 2003.

- [P10] J. R. Cooperstock, **Y. Zhang**, and **S. Spackman**. “Adaptive Compression for the Storage, Transmission, and Arbitrary Quality Reconstruction of Spatial Data.” US 60/339,816, provisional application filed Dec. 17, 2001 (expired) (United States). 2001.
- [P11] J. R. Cooperstock and **S. Arseneau**. “A robust person tracking method and system.” US 60/234,197 provisional application, filed Sept. 20, 2000 (expired) (United States). 2000.
- [P12] J. R. Cooperstock. “Pixel Count-Sensitive PDA Tool Mechanism with Cut/Paste and/or Copy/Paste Function.” P09-022797, filed in Japan by Sony Corp. (Japan). Feb. 1997.

TECHNOLOGY TRANSFER

License agreement signed in 2014 with amblyotech.com to commercialize amblyopia treatment (protected under US patent 8,066,372 “Binocular vision assessment and/or therapy”). The technology was subsequently [acquired by Novartis](#) in April 2020.

RESEARCH DEMONSTRATIONS

- [D1] Distributed Musical Practice and Performance, I Medici di McGill, Oscar Peterson Hall, Montreal, April 28, 2008.
- [D2] Wide Screen Window on the World: Life Size HD Videoconferencing. Supercomputing 2005, Bandwidth Challenge, Seattle, November 16, 2005.
- [D3] Streaming DSD Audio comes to the AES. Audio Engineering Society 117th Convention, San Francisco, October 31, 2004.
- [D4] Cross-continental low-latency ultra-videoconferencing. McGill-Stanford jazz jam, June 13, 2002.
- [D5] Remote master’s class using SDI video and multichannel audio. McGill-National Research Council session with Pinchas Zukerman, March 25, 2002.
- [D6] SDI video and multichannel audio. CANARIE’s 7th Advanced Networks Workshop, Toronto, November 28, 2001.
- [D7] Low-latency distributed violin duet in full-frame video. RISQ 2001 Conference, Montreal, November 5, 2001.

The Globe and Mail noted that *“Cooperstock’s demonstration was a watershed event for the elite club of the world’s computer network engineers. No one had ever before been able to demonstrate that, under the right conditions, it is possible for natural, normal human interaction to occur over the Internet.”*

- [D8] The Recording Studio that Spans a Continent. Audio Engineering Society 109th Convention, Los Angeles, September 23, 2000.

The Audio Engineering Society noted that this *“Landmark demonstration shows cost effective and high performance transmission systems for high quality 24-bit, 96kHz uncompressed multichannel audio are on horizon”*

- [D9] Dolby Digital 5.1 audio with MPEG-2 video around the world. Internet Global Summit INET 2000 Conference, Yokohama, July 20, 2000.
CBC Radio noted that *“McGill University in Montreal has made Internet history by setting up the first intercontinental netcast of a live concert in surround sound and full-screen video.”*
- [D10] Dolby Digital 5.1 audio with MPEG-2 video. CANARIE’s 5th Advanced Networks Workshop, Toronto, November 29, 1999.
- [D11] First real-time Multichannel Audio Internet demo. Audio Engineering Society 107th Convention, New York, September 26, 1999.
The Learning Technologies Networked noted that *“The performance marked the first real time multichannel audio Internet transmission, a feat made possible by software developed at McGill University by a team under the leadership of Professor Jeremy Cooperstock.”*

INVITED TALKS

Invited Talks to Industry, Students, and the Public

- [T1] “From flight simulators to the passenger experience: what can we learn from pilot-training tools to improve airline customer service”, AIST–NRC Collaboration Meeting on Improving Client-Agent Interaction, January 17, 2020.
- [T2] “I Feel the Earth Move (Under My Feet): Haptic Interaction for Telepresence and Information Delivery”, Department of Information Engineering and Computer Science, University of Trento, July 4, 2019.
- [T3] “I Feel the Earth Move (Under My Feet): Haptic Interaction for Telepresence and Information Delivery”, Department of Industrial Engineering and Management, Ben Gurion University, March 11, 2019.
- [T4] “I Feel the Earth Move (Under My Feet): Haptic Interaction for Telepresence and Information Delivery”, Information Systems, University of Haifa, November 7, 2018.
- [T5] “What’s around me? Audio augmented reality for blind users with a smartphone, Pint of Science, Montreal, May 15, 2018.
- [T6] Presenter at Canadian National Institute for the Blind’s TechnoVision+ Conference, Montreal, May 5, 2017.
- [T7] “Innovations for Gaming, AR, Simulation & Training”, Innovations for gaming, augmented reality, simulation and training, and other applications, Centre d’entreprises et d’innovation de Montreal (CEIM), April 8, 2016.
- [T8] “Enhanced Human: Wearable computing that transforms how we perceive and interact with our world”, Department of Computer Science, Technion–Israel Institute of Technology, February 11, 2016.

- [T9] “Is Humanity Smart Enough for AI?”, McGill Science Outreach Program, Freaky Friday public outreach lecture, October 23, 2015.
- [T10] “Delivering a Compelling User Experience in a Computer-Mediated Environment”, HCIN 5300, Interactive Entertainment Technologies, Carleton University, March 7, 2014.
- [T11] “Multimedia as a Building Block: How audio, video and haptics integrate in a Shared Reality”, Multimedia Systems, GLIS 633, School of Information Studies, McGill University, February 13, 2014.
- [T12] “Are we there yet? Cognitive Science Challenges in Telepresence and Virtual Reality”, Student Association of Cognitive Science, Cognitive Science Research Day, McGill University, November 13, 2013.
- [T13] “Telepresence doesn’t quite cut it: Multimodal Challenges in Virtual and Shared Reality”, Institute of Telecommunications and Multimedia Applications, Universidad Politècnica de València, July 10, 2013.
- [T14] “Telepresence doesn’t quite cut it: Multimodal Challenges in Virtual and Shared Reality”, Dawson College, First Choice Science speakers series, April 17, 2013.
- [T15] “Dangerous AI or dangerous us?”, Academia Week Artificial Intelligence event, Science Undergraduate Society, McGill University, January 24, 2013.
- [T16] “They don’t use Skype on the Holodeck”, Department of Computer Science, University of British Columbia, July 4, 2012.
- [T17] “But can the Holodeck do a good Shiraz?”, School of Computer Science and IT, Royal Melbourne Institute of Technology, February 17, 2012.
- [T18] “But can the Holodeck do a good Shiraz?”, School of Information Technologies, University of Sydney, February 15, 2012.
- [T19] “Distributed Music Performance and Latency Issues”, School of Drama, Fine Art and Music, University of Newcastle (Australia), February 13, 2012.
- [T20] “But can the Holodeck do a good Pinot noir?”, Department of Computer Science, University of Otago, January 23, 2012.
- [T21] “Shared Reality: Toward perceptually convincing computer-mediated environments”, Department of Computer Science, University of Auckland, August 25, 2011.
- [T22] “This is your brain on Shared Reality: Toward perceptually convincing computed-mediated environments”, Vanier College, Science Week Presentation, March 24, 2011.
- [T23] “This is your brain on Shared Reality: Toward perceptually convincing computed-mediated environments”, Simula Lab, Oslo, May 15, 2009.
- [T24] “This is your brain on Shared Reality: Toward perceptually convincing computed-mediated environments”, Ambient Intelligence Group, CITEC, Bielefeld University, May 6, 2009.

- [T25] “Distributed and Multimodal Interaction in Virtual and Augmented Reality Environments”, McGill University, School of Physical and Occupational Therapy, November 25, 2008.
- [T26] “Shared Reality: Effective Interaction for (Demanding) Distributed Tasks”, University of Victoria, September 16, 2008.
- [T27] “Bidirectional video communication for real-time applications”, Institut für Telematik, University of Lübeck, Germany, May 15, 2008.
- [T28] “Shared Reality: Effective Interaction for (Demanding) Distributed Tasks”, Aalborg University, Esbjerg, Denmark, May 14, 2008.
- [T29] “Distributed Multimodal Interaction”, Bang & Olufsen, Struer, Denmark, May 13, 2008.
- [T30] “Distributed Musical Practice and Performance”, Biology and Music Lecture, I Medici di McGill, April 28, 2008.
- [T31] “Shared Reality: Effective Interaction for (Demanding) Distributed Tasks”, Arts, Media and Engineering, Arizona State University, February 29, 2008
- [T32] “From Videoconferencing to Shared Reality” Department of Electrical and Computer Engineering, University of British Columbia, October 4, 2007.
- [T33] “Engaging Technolog(ies) for Effective Interaction” Department of Computer Science, Hebrew University of Jerusalem, April 19, 2005.
- [T34] “Engaging Technolog(ies) for Effective Interaction” Intelligence, Agents, Multimedia Group, University of Southampton, UK, March 7, 2005.
- [T35] “From Videoconferencing to Shared Reality” l’Institut de Recherche et Coordination Acoustique/Musique (IRCAM), Paris, November 25, 2004.
- [T36] “From Videoconferencing to Shared Reality” Taiyuan University, Taiyuan, China, April 18, 2004.
- [T37] “From Videoconferencing to Shared Reality” Tsinghua University, Beijing, China, April 14, 2004.
- [T38] “From Videoconferencing to Shared Reality” Beijing University, Beijing, China, April 14, 2004.
- [T39] “From Videoconferencing to Shared Reality” Beihan University, Beijing, China, April 12, 2004.
- [T40] “From Videoconferencing to Shared Reality” Advanced Telecommunications Research (ATR), Nara, Japan, April 9, 2004.
- [T41] “From Videoconferencing to Shared Reality” Dept. of Industrial Engineering, Musashi Institute of Technology, April 5, 2004.

- [T42] “High-fidelity telepresence” Graphics and Geometric Computing Seminar Series, Technion – Israel Institute of Technology, January 1, 2003.
- [T43] “The Virtual Studio” Royal Conservatory of Music, Toronto, February 25, 2002.
- [T44] “Building a Shared Reality” Department of Computer Science, University of Toronto, February 25, 2002.
- [T45] “Distributed Concerts and Shared Reality: Just how much streamed data and computation do we need to support effective interaction?” Department of Computer Science, Clarkson University, November 1, 2001.
- [T46] “Robotics and Design” Round Table Panel, Centre Design UQAM, February 9, 2000.
- [T47] “The Shared Reality Environment” Department of Electrical and Computer Engineering, Ecole Polytechnique, Montreal, May 28, 1999.

Invited Talks in Scholarly Conferences and Workshops

- [T48] “Assistive Technology Research in the Shared Reality Lab”, Conférence scientifique du CRIR-Institut Nazareth et Louis-Braille, September 25, 2019.
- [T49] “Learning from sparse feedback: Adapting an environmental awareness app to visually impaired user preferences”, ACM-SIGCHI sponsored summer school on Intelligent User Interfaces in the Era of IoT and Smart Environments, Haifa, Israel, October 3, 2018.
- [T50] Speaker in “AR/VR panel”, IEEE Multimedia Signal Processing Workshop, Montreal, September 23, 2016.
- [T51] “Immersive multimedia and mobile interaction: Applications to new media, gaming, medicine, and beyond” Keynote speaker, Entertainment Technology Summit, Concordia University, Montreal, September 17, 2016.
- [T52] “Leveraging video in public safety scenarios”, Ninth Canadian Public Safety Interoperability Workshop (CITIG 9), Toronto, December 1, 2015.
- [T53] “Future Cities (2040) – Mind: Human and Machine”, Institute for the Public Life of Arts and Ideas, Symposium on Future Cities, March 13, 2015.
- [T54] “UltraVideo and the Quest for Minimal Latency”, International Workshop on High Quality Dynamic cross-continental Networked Artistic interaction, World Opera Association, Struer, Denmark, August 29, 2013.
- [T55] “Assisting the blind and treating amblyopia: Two more things you can do with your smartphone”, 15e Symposium scientifique sur l’incapacité visuelle et la réadaptation (presented with J. Blum). University of Montreal, February 12, 2013.
- [T56] “Revolutions in human-device interaction: How new paradigms impact user experience”, International Conference on Consumer Electronics, Consumer Electronics Society, Las Vegas, January 12, 2013.

- [T57] “Around the World in 80 ms.” Panel presentation in Workshop of the Audio Engineering Society Convention, San Francisco, November 5, 2010.
- [T58] “UltraVideo and Virtual Presence: A Video Perspective.” Presentation on Teaching in Distributed Performance, Tromsø, Norway, October 15, 2010.
- [T59] “Future Interfaces for Audio.” Panel presentation in Workshop of the Audio Engineering Society Convention, New York, October 10, 2009.
- [T60] “World Opera Technologies and Tests”, Danish Sound Technology Network, Aalborg University, June 8, 2009.
- [T61] “The Montreal World Opera Experiments”. Presentation at the World Opera Symposium, Struer, Denmark, May 12, 2009.
- [T62] “Audio-Visual-Haptic-Tactile: Putting them all together for an engaging immersive experience”. Panel presentation in Workshop of the Audio Engineering Society Convention, Munich, Germany, May 10, 2009.
- [T63] “New Technologies for Audio over IP”. Panel presentation in Workshop of the Audio Engineering Society Convention, Munich, Germany, May 10, 2009.
- [T64] “A Platform to Create and Support Ocean Science Virtual Organizations (Oceans 2.0)” and “HSVO Health Services Virtual Organization”, RISQ 2008 Colloquium, Montreal, November 14, 2008.
- [T65] “The Future of VC: Music Teaching and High Fidelity Video”, Elevate 2008: Reaching New Heights in Educational Video-conferencing, Banff, August 27–28, 2008.
- [T66] “Creating an immersive video space”, International Symposium on The World Opera: When the Opera stage becomes worldwide, Tromsø, Norway, May 9, 2008.
- [T67] “Multimodal Streaming and Distributed Audio Interaction”, High Quality Audio over Networks (ANET II) Summit, Banff Centre, April 12, 2008.
- [T68] “Music and Games: How Fun Applications Stimulate Core Technologies”, Canadian University Software Engineering Conference, January 19, 2008.
- [T69] “From Teleoperation to Teleimmersion: Design Challenges for Distributed Interaction”, Canadian University Software Engineering Conference, January 19, 2007.
- [T70] “CANARIE sur UCLP et ROADM, deux technologies qui changent le monde des télécoms”, Round Table panel, RISQ Annual Conference, Quebec City, October 16, 2006.
- [T71] “La recherche sur en ultra-videoconference”, Panel on “Vitrine technopédagogique sur la vidéoconférence”, RISQ Annual Conference, Quebec City, October 16, 2006.
- [T72] “Broadband transmission of multimodal content at the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT)”, RISQ-CA*net4 Advanced Networking Day, Montreal, October 24, 2005.

- [T73] “Low-Latency Ultra-Videoconferencing and Shared Reality” Interfaces Montreal, Rencontre du Génie numérique et des Affaires. Montreal, October 11, 2005.
- [T74] “Shared Spaces” Asia-Pacific Advanced Networks (APAN) Conference, Taipei Aug. 22–27, 2005.
- [T75] “Engaging Technolog(ies) for Effective Interaction” Keynote speaker, World Conference on Educational Multimedia, Hypermedia and Telecommunications, Montreal, June 29, 2005.
- [T76] “Broadband Distance Education in 2007: Views from the Demand Side” Invited Panelist. World Conference on Educational Multimedia, Hypermedia and Telecommunications, Montreal, June 29, 2005.
- [T77] “Ultra-Videoconferencing and Intelligent Classrooms” Keynote speaker, Canadian Higher Education and Information Technology Conference, Montreal, June 28, 2005.
- [T78] “From Videoconferencing to Shared Reality” Bell University Laboratories’ Annual Conference, Toronto, November 3, 2004.
- [T79] “History of Internet Audio Experiments at McGill” High Quality Audio over Networks (ANET) Summit, Banff Centre, August 20–22, 2004.
- [T80] “Advanced Video Applications: Developments in Extreme Video” Southeastern Universities Research Association Video Development Initiative (SURA/ViDe) 6th Annual Digital Video Workshop. Indianapolis, March 24, 2004.
- [T81] “The Democratic Revolutions – Peer to Peer Meets Open Source: Design, Philosophy, Engineering” Intimate Technologies/Dangerous Zones. Banff New Media Institute, Banff Centre, April 27, 2002.
- [T82] “The Development of Ultra VC Applications and Technology” Southeastern Universities Research Association Video Development Initiative (SURA/ViDe) 4th Annual Digital Video Workshop. University of Alabama at Birmingham, April 25, 2002.
- [T83] “High quality wide-screen SDI video and multichannel audio over CA*net3” CANARIE’s 7th Advanced Networks Workshop, Toronto, November 28, 2001.
- [T84] “Low-latency comes to videoconferencing: The Frères Jacques duet at a distance” RISQ 2001 Conference, Montreal, November 5, 2001.
- [T85] Advanced Networking and the Arts: Innovations in Outreach, Collaboration, and Performance. Panel Discussion at Internet Global Summit INET 2001 Conference, Stockholm, June 6, 2001.
- [T86] “The McGill - Calgary Advanced Learnware Network” CANARIE’s 6th Advanced Networks Workshop, Montreal, November 29, 2000.
- [T87] “Networks and Music Instruction” Panel Discussion with Pinchas Zukerman and Wieslaw Woszczyk, CANARIE’s 6th Advanced Networks Workshop, Montreal, November 29, 2000.

- [T88] “Tools for Distributed VR” Canadian Working Group on Virtualized Reality Systems, Montreal, November 28, 2000.
- [T89] “Evolution of the Intelligent Classroom” Multicultural Perspectives on the use of Technology in Education. Montreal, October 2, 2000.
- [T90] “The Brave New World of Ubiquitous Bandwidth” Internet Global Summit INET 2000 Conference, Yokohama, July 20, 2000.
- [T91] “Multichannel Audio over the Internet: The Next Phase” RISQ 2000 Conference, May 31, 2000.
- [T92] “Multichannel Audio over the Internet” CANARIE’s 5th Advanced Networks Workshop, Toronto, November 29, 1999.
- [T93] “When Telemedicine feels like Regular Medicine” Communications and Information Technology Ontario (CITO) Healthcare for the Future: Telemedicine, February 18, 1999.

MEDIA EXPOSURE

- [M1] Ami-Télé, Ça me regarde, February 8, 2018
- [M2] Forbes, March 9, 2017
- [M3] Discovery Channel, Daily Planet, Mar. 7, 2017
- [M4] Télé-Québec, Electrons Libre, Jan. 17, 2017
- [M5] ACB Radio, Mainstream, Nov. 18, 2016
- [M6] CBC Radio, Tech Column, Aug. 8, 2016
- [M7] CJAD Radio, Tech Talk, Aug. 6, 2016
- [M8] Mobile Syrup, Aug. 4, 2016
- [M9] CBC News, Aug. 4, 2016
- [M10] Betakit, Aug. 3, 2016
- [M11] Accessible Media Inc., Live from Studio 5, Aug. 2, 2016
- [M12] La Presse, Jul. 31, 2016
- [M13] CTV News, Jul. 29, 2016
- [M14] Stevivor, Mar. 2015
- [M15] Venture Beat, Mar. 3, 2015
- [M16] Club Social (TV5), Feb. 4, 2011
- [M17] Global TV (National), Jan. 29, 2009
- [M18] Global TV (Montreal), Jan. 27, 2009
- [M19] CBC Radio, As it Happens, Jan. 27, 2009
- [M20] National Post, Jan. 27, 2009

- [M21] Montreal Gazette, Jan. 27, 2009
- [M22] Montreal Gazette, Feb. 20, 2009
- [M23] Inside Higher Education, Sept. 3, 2008
- [M24] CBC Radio (Daybreak), Sept. 3, 2008
- [M25] CJAD radio, Sept. 2, 2008
- [M26] Cabling Networking Systems, Jan. 2006
- [M27] McGill Reporter, Nov. 24, 2005
- [M28] CTV Quebec, Global News, Dec. 23, 2002
- [M29] New York Times, Technology Section, Dec. 19, 2002
- [M30] Discovery Channel, Daily Planet, Oct. 30, 2002
- [M31] CFCF (CTV Quebec) Global News, June 19, 2002
- [M32] National Post, June 15, 2002
- [M33] CBC Television, The National, May 3, 2002
- [M34] McGill Reporter, Learning the Strings, April 11, 2002
- [M35] Ottawa Citizen, March 29, 2002
- [M36] Montreal Gazette, March 27, 2002
- [M37] Globe & Mail, Dec. 1, 2001
- [M38] Canal Z, La Revanche des Nerds, Nov. 13, 2001
- [M39] Montreal Gazette, Nov. 10, 2001
- [M40] CJAD Radio, The World Today, July 31, 2001
- [M41] McGill Reporter, April 5, 2001
- [M42] Globe & Mail Report on Business, Oct. 28, 2000
- [M43] TQS Double Clic!, Oct. 7, 2000
- [M44] McGill Reporter, Sept. 21, 2000
- [M45] UPath.com, Vol 40, 2000
- [M46] CBC (Montreal) Home Run, Aug. 22, 2000
- [M47] Montreal Gazette, Aug. 22, 2000
- [M48] CFCF (CTV Quebec) Pulse News, Aug. 21, 2000
- [M49] CBC Radio The Arts Report, July 20, 2000
- [M50] Elle Quebec, June 2000
- [M51] Journal Le Monde des Affaires, May 2000
- [M52] Canal Z, Technofolie, May 3, 2000
- [M53] TQS Double Click, April 29, 2000
- [M54] McGill Reporter, April 6, 2000

- [M55] Briefing Digital, April 2000
- [M56] Interface: La Revue de la Recherche, Vol. 21, No. 2, March-April 2000
- [M57] American Society of Mechanical Engineers, Mechanical Advantage, Vol 9, No 3, March 2000
- [M58] Canal Z, La Revanche des Nerdz, Feb. 2000
- [M59] CFCF (CTV Quebec) Pulse News, Feb. 29, 2000
- [M60] Canal Vox: CityMag, Jan. 15, 2000
- [M61] Montreal Mirror, Jan. 6, 2000
- [M62] Plan Mega: La revue du genie québécois, Ordre des ingenieurs du Québec. Vol 1, Jan. 2000
- [M63] Radio Corporation of Singapore: Science and Technology Watch, Dec. 1999
- [M64] Radio Canada (CBC French) Les Annees lumiere, Nov. 28, 1999
- [M65] Financial Times Life/Technology, Nov. 25, 1999
- [M66] CBC Radio: As it Happens, Nov. 22, 1999
- [M67] Journal de Montreal, Nov. 19, 1999
- [M68] Le Devoir, Nov. 18, 1999
- [M69] TVA CyberClub, Nov. 13, 1999
- [M70] La Presse, Sept. 26, 1999
- [M71] CJAD Radio, April 11, 1999
- [M72] Montreal Mirror, April 8, 1999
- [M73] McGill Reporter, Jan. 14, 1999
- [M74] High-Tech Shower International, Nov. 26, 1997
- [M75] CBC Newsworld "Futureworld", Oct. 5, 1996
- [M76] Discovery Channel, Sept. 18, 1996
- [M77] Toronto Star, Sept. 15, 1996
- [M78] University of Toronto Varsity, Sept. 3, 1996
- [M79] TV Ontario "Studio Two", June 26, 1995

RESEARCH SUPERVISION

RESEARCH PROFESSIONALS

Name	Period	Tasks	Present Position
Eichhorn, Alexander	Feb. 2013 – Aug. 2013	research associate under GRAND	CTO of Kidtsunami
Bouchard, Mathieu	Jan. 2011 – November 2018	research assistant under MSG project	
Chen, Guangyi	Jan. 2010 – Jul. 2010	research associate under Canarie NEP	
Vincent, Coralie	Oct. 2010 – Mar. 2011	research assistant	CNRS, France
Dansereau, Don	June 2009 – Jan. 2010	research associate under FRQNT grant	Senior Lecturer, University of Sydney
To, Long	Jan. 2009 – Sep. 2011	research associate under NSERC I2I	Software engineer, Abcam
Blum, Jeff	Oct. 2008 – Aug. 2013	research assistant under MSG project	
Olmos, Adriana	Sept. 2008 – July 2012	user interface engineer under Canarie NEP	Interaction designer, Google/YouTube
Sun, Haijian	Sept. 2008 – Oct. 2010	computer engineer under Canarie NEP	programmer, Desjardins
Soukhodolski, I.	Oct. 2005 – Dec. 2007	web services programmer under Canarie IIP	Owner, W4 Technology
Kiewe, Howard	Oct. 2005 – Dec. 2007	user interface developer under Canarie IIP	consultant
Spackman, S.	2000 – 2006	research associate on Canarie and VRQ projects	Google, Mountain View
Sarikaya, Deniz	2003 – 2004	research assistant on VRQ projects	deceased
Soucy, Gilbert	1999	research associate on CFI project	Imaging Specialist, 36pix Inc., Montreal

POST-DOCTORAL FELLOWS

Name	Period	Tasks (Funding Program)	Present Position
Yoo, Y.	Mar. 2020 – present	Wearable Haptics	
Weill-Duflos, A.	Jan. 2018 – present	Wearable Haptics	
Arnold, Andre	Oct. 2017 – Dec. 2017	Wearable Haptics	Product Manager - AI Nuvoola
Panëels, S.	Jan. 2011 – Jan. 2012	Natural Interactive Walking and In-Situ Audio Services	Researcher, Commissariat à l'énergie atomique et aux énergies alternatives (CEA)
Pelletier, S.	Nov. 2009 – Jun. 2011	Real-time Image-based Rendering (Canarie NEP, 2009-2010) Parallax Barrier Display rendering software optimization (NSERC ENGAGE, 2011)	Game Programmer, Behaviour Interactive
Otis, Martin	Jan. 2010 – Dec. 2010	Natural Interactive Walking (FRQNT Scholarship)	Asst. Professor, U. Québec à Chicoutimi
Millet, G.	Nov. 2009 – Mar. 2012	Natural Interactive Walking	Patent Examiner, EPO, The Hague
Bouillot, Nicolas	Sep. 2007 – Dec. 2011	Mobile Audio Interaction (NSERC New Media Initiative, 2007-2009) Open Orchestra (Canarie NEP-2 Project)	Research Engineer, Société des arts technologiques
Darolti, Cristina	Jan. – Dec. 2009	Real-time Image-based Rendering (Canarie NEP)	Patent Examiner, EPO, The Hague
Wang, Guangyu	Sep. 2007 – Mar. 2011	Neurosurgical Visualization and Virtual Presence (NSERC Strategic and NCE)	Facebook, Mountain View
Wang, Yan	2002 – 2003	Channel and spatial view allocation for videoconferencing (VRQ)	V.P. Marketing, AMH Canada

PH.D. STUDENTS

Name	Period	Thesis title	Present Position
Fortin, P.* [◇]	Sep. 2016 –	Methods and Interfaces for Closed-Loop Smartphone Communications	
Blum, Jeff* ^{†‡}	Sep. 2013 – present	Implicit Communication for Enriched Human Interaction	
Erfani-Joorabchi, M.*	Jan. 2013 – Jan. 2015		iOS Software Engineer, Google
Anlauff, Jan*	Jan. 2011 – present	Sensor-Actor Wearables	
Tordini, F.	Jan. 2011 – Feb. 2018	Auditory salience modeling for continuous processes sonification	CIRMMT, McGill University
Ghourchian, N.* [†]	Jan. 2010 – Apr. 2011	Affective Evaluation	transferred to another group
El-Shimy, D. [†]	Jan. 2009 – Nov. 2014	Reactive Environment for Network Music Performance	UX Specialist, Shopify
Benovoy, M. [†]	Oct. 2007 – Aug. 2010	Biosignals analysis	transferred to another group
Visell, Yon	Sept. 2005 – Mar. 2011	Walking on virtual ground: physics, perception, and interface design	Assistant Professor (ECE), UC Santa Barbara
Qi, Zhi	Jan. 2004 – Dec. 2008	Towards dynamic mosaic generation with robustness to parallax effects	Assistant Professor (EE), Southeast University, China
Pelletier, S.	Jan. 2003 – Oct. 2009	Acceleration methods for image super-resolution (Precarn Scholarship)	Game Programmer, Behaviour Interactive
Yin, Jianfeng	Sept. 2000 – Aug. 2008	Toward an Alternative Approach to Multi-Camera Scene Reconstruction	Software engineer, Geomagical Labs
Sun, Wei	2002 – 2006	Multi-camera Object Segmentation in Dynamically Textured Scenes Using Disparity Contours	Apple Inc., Cupertino
Cayouette, F. [†]	2003 – 2006	human tracking (withdrew from program)	Programmer, Behaviour Interactive, Montreal
Arseneau, S.	2000 – 2006	Representing Junctions through Asymmetric Tensor Diffusion	Chief Engineer for R&D, Laser Shot, Houston

* McGill Engineering Doctoral Award recipient

[†] NSERC PGS D Scholarship recipient

[◇] FRQNT Scholarship recipient

[‡] Graphics Animation and New Media (GRAND) Scholarship recipient

ADDITIONAL PH.D. SUPERVISORY SERVICE

I co-supervised a portion of the thesis work of the following students:

- Liu, X., (Nov 2013-Dec 2015), visiting student from University of Electronic Science and Technology, China
- Xie, M., (Sep 2012-Mar 2014), visiting student from Beijing University of Aeronautics and Astronautics, China
- Grond, F. (Jul-Dec 2010), visiting student from Bielefeld University, Germany
- Zambon, S.. (Jul-Oct 2010), visiting student from Verona University, Italy
- Cirio, G. (Jun-Aug 2010), visiting student from INRIA-IRISA, France
- Rizutti, C. (Sep-Oct 2008), visiting student from Università della Calabria, Italy
- Bossi, E. (Sep-Oct 2008), visiting student from Università della Calabria, Italy
- Pellerin, R. (Jun-Sep 2008), visiting student from Conservatoire Nationale des Arts et Métiers, France
- Cupellini, E. (Jul-Aug 2007), visiting student from Università della Calabria, Italy
- Usher, J. (2003-2004), Ph.D. student, Faculty of Music, McGill University
- Mohammadi, M. (Feb-Aug 2004). visiting student from Sharif University, Iran

I served as external reviewer of the following theses:

- Cheryl Savery, Queen's University (2014)
- Alexandre Plouznikoff, École Polytechnique de Montréal (2009)
- Xiaoyong Sun, School of Information Technology and Engineering, University of Ottawa (2007)
- Nicolas Bouillot, Conservatoire Nationale des Arts et Métiers, France (2006)
- Harold Okai-Tettey, Computer Science, Rhodes University, South Africa (2006)

I served on the supervisory and/or examination committees of the following students:

- Department of Electrical and Computer Engineering: Edouard Antoniou, Oliver Astley, Carmen Au, Marc Boulé, Wei Chu, Olivier St-Martin Cormier, Vincent Levesque, Muhua Li, Rui Ma, Dante De Nigris Moreno, Jun Ouyang, Jerome Pasquero, Andrew Phan, Ala Qumsieh, Harkirat Sahambi, Wei Sun, Yick Kei Wong, Dingrong Yi, Olivier St-Martin Cormier, Karl Fayad
- School of Information Studies: Xiaofeng (Allan) Yong
- Faculty of Music: Jason Corey, Cory McKay, Caroline Medeiros, Sean Olive, Dale Stammen, Vanessa Yarmechuk, Mark Zadel
- Grad. School of Library and Information Studies: Charles-Antoine Julien
- Department of Educational Psychology and Counselling: Adam Finkelstein
- Department of Mechanical Engineering: Zahir Albadawi
- School of Computer Science: Paul Haroun, Wisam Al Abed (2016)

MASTERS STUDENTS

Name	Period	Thesis title	Present Position
Gannavarapu, S.	Sep. 2020 -	Haptics	
Isran, Rayan	Sep. 2020 -	Haptics	
Kirby, Linnea	Sep. 2020 -	Multimodal feedback to guide body-movement	
Knappe, Sabrina	Sep. 2020 -	Interpreting web graphics for the visually impaired	
Regimbal, J.	Sep. 2020 -	Haptic effects	
Ducher, Clara	Sep. 2019 -	Graphical avatar synthesis and refinement	
Marino, David	Sep. 2019 -	Haptic language communication	
Lee, Hyejin	Sep. 2019 -	VR environments for avatar therapy treatment	
Li, Yaxuan	Sep. 2019 -	Haptic effects authoring	
Bouanane, Y.	Jan. 2019 -	Optimal sonification strategies for visually impaired scene understanding	
Demers, Marc	Sep. 2018 -	Haptic Authoring	
Vyas, Preeti	Sep. 2017 - Apr. 2020	Haptic feedback for coordinated biomechanical activities	Ph.D. student, UBC
Sulmont, E.	Sep. 2017 - Dec. 2018	Improved Learning of Machine Learning by Non-Majors	Curriculum Manager, DataCamp
Patil, Gandharv	Jan. 2017 - Dec. 2019	Learning Models for Question-Answering in Task-Related Dialogue	
Girgis, Roger	Sep. 2016 - Apr. 2019-	Assessing the Use of Deep Learning in Assisting Visually Impaired People with Outdoor Exploration	Ph.D. student, MILA
Kim, Taeyong	Sep. 2016 - Aug. 2019	Exploration of foot based interaction for menu control and virtual reality applications	HRI Researcher, Hyundai Robotics
Alirezaee, P.	Sep. 2016 - Dec. 2019	Multimodal approaches to improved hospital alarms	
Diaz, Manfred	Sep. 2016 - Aug. 2017	Interactive and Uncertainty-Aware Imitation Learning	
Ahmer, Z.	Jan. 2016 - Jan. 2019	Automated musical accompaniment to children's stories	
Yin, G.	Sep. 2015 - Oct. 2018-	Augmented Reality Tools for Workplace Safety	Software Engineer, Kooltra
Fortin, P.	Sep. 2015 - Aug. 2016	Physiological Perception of Tickling Sensation	fast-track to Ph.D. program
Horodniczy, D. [†]	Sep. 2014 - Dec. 2016	Characterization and Application of a Variable-Friction Foot Device	Software developer, Montrium

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Name	Period	Thesis title	Present Position
Vuibert, Vanessa	Sep. 2013 – Aug. 2015	Efficient and Accurate Performance with Unconstrained Mid-air Interaction	Software Developer, Guavus
Hieda, Naoto	Sep. 2012 – Aug. 2015	Digital Video Projection for Interactive Entertainment	Visiting Researcher, Pola Art Foundation Fellow, Concordia University
Viswanathan, R.	Jan. 2010 – Dec. 2012	Testing the Two-Stream Hypothesis in an Immersive Virtual Environment	Developer, MontrealTel
Knight, Trevor	Jan. 2010 – Sep. 2011	Music Visualization for Open Orchestra (CIRMMT Student Award)	Software Developer, Noteloop Systems
Li, Weizhong	Sept. 2008 – May 2009	(recommended alternative supervision)	
Ip, Jessica	Sept. 2008 – Mar. 2011	Augmented Reality for Interactive Play in a Virtual and Physical Environment	iOS developer, Shopify, Toronto
Namit, Gaurav	May 2008 – Oct. 2009	(withdrew in 2009 to pursue social entrepreneurship venture)	
El-Shimy, D.	Sept. 2007 – Dec. 2008	Gestural interaction for complex tasks	(reclassified as Ph.D. student)
Law, A.	Sept. 2007 – Sept. 2010	A Vibrotactile Floor for Enabling Interaction through Virtual Walking Spaces	Data Systems Engineer, AECOM, Vancouver
Benovoy, M.	Sept. 2006 – Oct. 2007	Biosignals analysis and its application in a performance setting	(reclassified as Ph.D. student)
Audet, Samuel [†]	2005-2007	Shadow Removal from Multi-Projector Displays via Three-Dimensional Modeling and Object Tracking	Ph.D., Tokyo Institute of Technology; Software Engineer, Fixstars, Japan
Wozniowski, M.	2003-2006	A framework for interactive three-dimensional sound and spatial audio processing in a virtual environment	research engineer, Société des arts technologiques, Montreal
Rudzicz, Frank*	2004-2006	CLAVIUS: Understanding Language Understaing in Multimodal Interaction	Professor, University of Toronto
Rioux, Francois [†]	2003-2005	Software Framework for Parsing and Interpreting Gestures in a Multimodal Virtual Reality Context	Ph.D., Laval; Software Architect, Thales Canada
Chan, Siu-Chi	2002-2005	Hand and Fingertip Tracking for Gesture Recognition	Technical Staff, AMD Toronto
Hilario, Nadia*	2002-2005	Occlusion Detecion in Front Projection Environments	Software Developer, Stingray Digital
Perez, Michael	2002-2005	Multimodal Human-Computer Interaction for a Public Kiosk System	User Interface Designer, Nuance

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Name	Period	Thesis title	Present Position
Sud, Daniel	2002-2005	Design of a Multi-Projector Display System	Senior Producer, Lucky Hammers
Boussemart, Y.	2002-2005	Design and Implementation of Framework for Immersive Environments in a Shared Context	Chief Design Officer, Quantum-Black, UK
Pelletier, S.	2001-2003	High-Resolution Video Synthesis from Mixed-Resolution Video Based on the Estimate-and-Correct Method	(see above)
Gu, Jinhua	2000-2002	A distributed software architecture for the Shared Reality Environment.	VP, Radian Asset Assurance Inc., NY
Yao, Jie	2000-2002	Human Arm Gesture Detection and Recognition in a Classroom Environment.	Ph.D. student, Concordia University
Zhang, Yuan	2000-2002	An efficient coding method for spatial data: the rotating, hierarchical, overlapping representation.	Ph.D. student, University of Delaware
Doutriaux, S.	1998-1999	(withdrew in 1999 to launch start-up company)	(see above)
Arseneau, S.	1998-2000	Robust Image Segmentation Towards an Action Recognition Algorithm.	(see above)
Xu, Aoxiang	1998-2000	A High-Performance Audiovisual Communication System.	QNX Software Systems, Ottawa

* FRQNT Graduate Scholarship recipient

† NSERC PGS M Scholarship recipient

ADDITIONAL MASTERS SUPERVISORY SERVICE

I co-supervised a portion of the thesis work of the following students:

- Dever, Ani (Sep 2017-Feb 2018), visiting student from Polytechnic University of Turin, Italy
- Gallo, Nicola (Sep 2015-Feb 2016), visiting student from Polytechnic University of Turin, Italy
- Roy, Louise (Jul-Dec 2015), visiting student from Ensimag, Grenoble, France
- Glessner, David (Feb-Jun 2012). visiting student from Ensimag, Grenoble, France
- Penin, O. (Jul-Aug 2011). visiting student from Paris-Sud 11, France
- Mabire, N. (Apr-Sep 2010). visiting student from Supélec, Metz, France
- Brulé, M. (Feb.-Aug 2009). visiting student from Université de Louis Pasteur, Strasbourg, France
- Anlauff, J. (Dec 2008-Mar 2009). visiting student from Bielefeld University, Germany
- Delattre, G. (Apr-Aug 2007). visiting student from Université Paris VI, France

I served on the supervisory and/or examination committees of the following students:

- Anne-Marie Burns, Faculty of Music, McGill University
- Frank Riggi, Electrical and Computer Engineering, McGill University
- Eric Benzacar, Electrical and Computer Engineering, McGill University
- Oles Protsiym, Faculty of Music, McGill University

FUNDING

INDIVIDUAL RESEARCH GRANTS AND CONTRACTS

Date	Source	Amount	Title/Description
2019-2021	NSERC/ MEDTEQ	\$374,366	<i>Mixed-Reality Platform for Simulation and Synthesis of Multi-Modal Hallucinations with Applications to Schizophrenia Treatment.</i> Collaborative Research and Development Grant with Industrial Partners, iMD Research and IA Précision Santé Mentale
2019	NSERC	\$25,000	<i>360 degree imaging for navigation assistance for the visually impaired.</i> Engage Grants Program with Industrial Partner, ImmerVision.
2019	Mitacs	\$15,000	<i>Advanced sensor control implementations for energy optimization in commercial buildings using machine learning and data visualisation applied to building automation systems.</i> Mitacs Accelerate – Intern: Demers, Marc
2019	Mitacs	\$6,000	<i>Facilitating Human Interaction with a Robotic Exercise Coach using Smart Objects.</i> Mitacs Globalink – Intern: Vyas, Preeti
2018	Mitacs	\$6,000	<i>Mobile Remote Implicit Communication.</i> Mitacs Globalink: Intern: Blum, Jeff
2018	NSERC	\$25,000	<i>Educational wine recommendations from initially sparse data.</i> Engage Grants Program with Industrial Partner, Wineout Inc.
2017-2018	McGill	\$7500	<i>Physiological confirmation of stimulus reception.</i> Faculty of Engineering TechAccelR Grant
2017-2020	NSERC	\$402,300	<i>Wearable Haptics.</i> Collaborative Research and Development Grant with InterDigital Corporation
2017-2018	CIRA	\$44,500	<i>Intelligent Agent for the Visually Impaired: Vision-based scene description and contextual awareness for Autour.</i> Canadian Internet Registry Authority .CA Community Investment Program
2017-2022	NSERC	\$185,000	<i>Multimodal Influences on Perception and Action in Computer-Mediated Environments.</i> Discovery grant.
2017-2018	MSP	\$177,673	<i>Social Media Monitoring Architecture.</i> Research Contract with Minsitère de la Sécurité publique
2015	CIRA	\$53,878	<i>What’s Around Me? Conveying Environmental Awareness to the Visually Impaired Community.</i> Canadian Internet Registry Authority .CA Community Investment Program
2014-2015	Mitacs	\$15,000	<i>Effect of Mobile Technologies in Emergency Response.</i> Mitacs Accelerate – Intern: Erfani-Joorabchi, Minoo
2014	NSERC	\$25,000	<i>Haptic user experience delivered through the shoes.</i> Engage Grants Program with Industrial Partner, InterDigital Canada
2013-2014	NSERC	\$137,474	<i>3D immersive projection infrastructure with full-body motion capture and analysis.</i> Research Tools and Instruments Grants
2012-2013	Mozilla	\$50,000	<i>Real-Time Emergency Response.</i> Mozilla Ignite Development Challenge (in partnership with the National Science Foundation)

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Date	Source	Amount	Title/Description
2012-2017	NSERC	\$210,000	<i>Improved Shared Reality for Multi-Party, Multimodal Simulation and Interaction.</i> Discovery grant.
2012	Toyota	\$30,000	<i>Haptic interaction with an augmented steering wheel.</i> Toyota Infotechnology Centre
2011	HP	\$60,950	<i>Capturing attention via spatialized audio cues.</i> HP Labs Innovation Research Program (IRP)
2011	NSERC	\$25,000	<i>Improved Parallax Barrier Autostereoscopic Display Software.</i> Engage Grants Program with Industrial Partner, Holoptick Technologies Inc.
2010-2011	Google	\$50,000	<i>A Spatialized Audio Map System for Mobile Blind Users.</i> Google Faculty Research Awards.
2010-2011	Honda	\$30,000	<i>Facial Expression Recognition for Machines.</i> Honda Research Institute.
2010	UVic	\$8,000	<i>NEPTUNE Pleora streamer.</i> University of Victoria software license
2008-2012	MDEIE	\$367,195	<i>Natural Interactive Walking.</i> Support for International Research and Innovation Initiatives, Ministère du Développement économique, de l'Innovation et de l'Exportation; for Canadian participation in EU FP-7 program with partners in France, Italy, and Denmark.
2007-2010	MDEIE	\$15,000	<i>Un environnement virtual pour la création de musique et de son à partir de systèmes chaotiques.</i> Support for International Research and Innovation Initiatives, Ministère du Développement économique, de l'Innovation et de l'Exportation.
2006-2009	NSERC	\$317,785	<i>A pervasive multi-user augmented space for mobile immersive interaction with sound and music.</i> (additional funding for artist collaborator received from Canada Council for the Arts) New Media Initiative STPGP 337999-06.
2006-2011	NSERC	\$100,000	<i>Enhanced video for shared reality environments.</i> Discovery grant.
2004-2006	NSERC	\$136,600	<i>Soundscape performance works via interactive environment for immersive audiovisual scene generation.</i> (additional funding for artist collaborator received from Canada Council for the Arts) New Media Initiative NMIPJ 307934-04.
2002-2006	NSERC	\$100,000	<i>Shared Reality Interaction over High Bandwidth Connectivity.</i> Discovery grant.
2000	LUB	\$100,000	<i>Distributed Visualization Environment.</i> Laboratoire universitaire Bell Equipment Grant.
1999-2000	Petro-Canada	\$20,500	<i>Interactive Web Tools for Critique of Presentation Skills and Evaluation of Student Learning.</i> Young Innovator Award.
1999-2002	FCAR	\$45,000	<i>Augmenting an Electronic Classroom for Improved Instructor-Student Interaction.</i> New Researchers Award.

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Date	Source	Amount	Title/Description
1999	FCAR	\$15,700	<i>Augmenting an Electronic Classroom for Improved Instructor-Student Interaction.</i> Equipment Grant.
1999	AES	\$25,000	<i>Multichannel audio over Internet.</i> Audio Engineering Society.
1999	OSC	\$15,000	<i>Timespace Exhibit.</i> Ontario Science Center contract.
1999	MFM	\$10,000	<i>Intelligent Classroom tools.</i> McGill Faculty of Management.
1998- 2002	NSERC	\$76,000	<i>Reactive Hospital Environment.</i> Discovery research grant.
1998	FGSR	\$20,000	McGill Graduate Studies and Research Development Fund

TEAM RESEARCH GRANTS AND CONTRACTS

(Percentages refer to my portion.)

Date	Source	Amount	Title/Description
2017-2018	SSHRC	\$199,680 (10%)	[†] <i>Real time impact signalling and collective goods</i> Partnership Development Grant (with R. Janda and 6 co-investigators)
2016-2017	NAKFI	\$100,000 (20%)	<i>Empathy Mirror</i> National Academies Keck Futures Initiative Art and Science, Engineering and Medicine Grant (with B. Korgel and 3 co-applicants)
2015-2018	FRQNT	\$182,880 (25%)	[†] <i>Étude des modèles d'interactivité humain-robot en réalité mixte afin de réduire l'apparition des troubles musculo-squelettiques en utilisant une cellule de travail hybride</i> Recherche en équipes (with M. Otis and 6 co-applicants)
2014	Mozilla	\$20,000 (90%)	<i>*Augmented Reality Tools for Improved Training of First Responders</i> Mozilla Gigabit Community Fund (with R. Dearden)
2011	CIRMMT	\$10,000 (90%)	<i>*Acoustic Sculptures</i> CIRMMT Strategic Innovation Fund Award (with A. Olmos and 3 others)
2010-2011	NSERC	\$49,815 (90%)	<i>*Novel Portable Treatment Device for Lazy Eye</i> Idea to Innovation (I2I) Booster (Phase Ib) (with R. Hess)
2009-2011	MSG	\$200,000 (80%)	<i>*Location-Based Spatialized Audio Interaction for the Blind and Visually Impaired</i> Programme Appui au passage à la société de l'information (Support for the transition to an information society program), Ministère des Services gouvernementaux (MSG) (with M. Wozniowski and Z. Settel)
2010-2014	CHRP	\$327,000 (?%)	<i>Computational and statistical tools for image guided neurosurgery of brain tumors</i> NSERC Collaborative Health Research Projects (with L. Collins and 7 others)
2009-2010	CCSIP	\$48,000 (4%)	<i>*Digitally Merged Environments</i> California-Canada Strategic Initiatives Program (with S. Brown, UCSD and 20 co-applicants)
2009-2011	Canarie	\$927,648 (40%)	[†] <i>Open Orchestra</i> Network-Enabled Platforms 2 (with J. Roston and W. Woszczyk)
2010-2014	NCE	\$23,000,000 (2%)	[†] <i>GRAND: Graphics, Animation and New Media</i> Networks of Centres of Excellence (With K. Booth and 49 others)
2009	DND	\$47,500	[†] <i>Video-Based Facial Recognition - Algorithm and Demonstration</i> Department of National Defence Contract (with M. Levine)
2008-2009	NSERC	\$120,250 (90%)	<i>*Novel Portable Treatment Device for Lazy Eye</i> Idea to Innovation (I2I) (with R. Hess)
2008-2010	Canarie	\$1,397,758 (7%)	<i>NEPTUNE: A Platform to Create and Support Ocean Science Virtual Organizations</i> Network-Enabled Platforms (with B. Pirenne and J. Roston)
2008-2010	Canarie	\$2,000,000 (18%)	<i>Health Services Virtual Organization</i> Network-Enabled Platforms (with R. Ellaway and 8 others)

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Date	Source	Amount	Title/Description
2008-2010	NSERC	\$196,000 (50%)	* <i>3-D Visualization and gestural interaction with multimodal neurological data</i> Strategic Projects (with 5 others)
2006-2009	FRQNT	\$146,550 (50%)	* <i>Unités agenceables: Réseau d'Environnements Immersifs pour Collaboration à Distance</i> Recherche en équipes (with X.-W. Sha)
2005-2006	Canarie	\$825,000 (50%)	<i>Undersea Window - High Definition Video Online</i> Intelligent Infrastructure Program. (with J. Roston)
2005-2006	SAT	\$1,276,000 (1%)	<i>TOT2: Nouveau Territoires de la Création-Diffusion en Réseau</i> Heritage Canada New Media Research. (M. Savoie, PI)
2004-2006	Canarie	\$568,971 (33%)	<i>Shared Spaces - High Definition Ultra-Videoconferencing</i> Advanced Applications Program. (with J. Roston)
2003-2004	SAT	\$792,082 (1%)	<i>TOT1: Nouveau Territoires de la Création-Diffusion en Réseau</i> Heritage Canada New Media Research. (M. Savoie, PI)
2002-2005	IRIS	\$573,000 (25%)	* <i>Parallel Distributed Camera Arrays for Intelligent Environments</i> (with J. Clark, S. Fels, R. Vertegaal)
2002-2005	VRQ	\$2,180,000 (20%)	<i>Real-time Communication Of High-res. Multi-sensory Content via Broadband Networks.</i> Valorisation-Recherche Quebec (with W. Woszczyk and others)
2001-2002	Canarie	\$391,000 (30%)	<i>Remote Video Sign-Language Interpreting.</i> Advanced Networking Apps. Services & Technologies. (with J. Roston and others)
2000-2002	Canarie	\$808,000 (35%)	<i>McGill Advanced Learnware Project.</i> Advanced Networking Applications Services and Technologies. (with B. Pennycook)
2000-2003	LUB	\$150,000 (50%)	* <i>Distributed Shared Visualization Environment.</i> Laboratoire universitaire Bell. (with B. Ozell)
2000-2001	Royal Bank	\$2,000 (80%)	* <i>Improving Teaching through an Interactive Critiquing System.</i> Teaching Improvement Fund Award. (with R. Harris and J. Blatter)
1999-2002	CFI	\$400,000 (50%)	† <i>The Shared Reality Environment.</i> New Opportunities Award. (with J. Clark)
1999-2000	Royal Bank	\$10,000 (80%)	* <i>Interactive Web Tools for Critique of Presentation Skills and Evaluation of Student Learning.</i> TIF (with R. Harris)

*Indicates grants on which I am project leader. †Grant on which I am co-investigator.

CENTRE RESEARCH GRANTS

Date	Source	Amount	Title/Description
2019-2025	FRQNT	\$2,160,000	Regroupement Stratégique pour <i>Systèmes cyberphysiques et intelligence machine matérialisée (REPARTI)</i> . (with C. Gosselin and 49 others) \$480,000 per annum.
2015	CFI	\$4,366,723	Innovation Fund: <i>Live Expression "in situ": Musical and Audiovisual Performance and Reception</i> (with M. Wanderley and 9 others)
2014-2020	FRQSC/ FRQNT	\$1,800,000	Regroupement Stratégique: <i>Centre Interdisciplinaire de Recherche en Musique, Médias et Technologie</i> . (with M. Wanderley and 23 others)
2013-2019	FRQNT	\$2,160,000	Regroupement Stratégique pour <i>l'Étude des Environnements PARTagés Intelligents répartis (REPARTI)</i> . (with D. Laurendeau and 34 others) \$359,943 per annum.
2008-2014	FRQSC/ FRQNT	\$1,800,000	Regroupement Stratégique: <i>Centre Interdisciplinaire de Recherche en Musique, Médias et Technologie</i> . (with S. McAdams and 23 others)
2007-2009	NSERC	\$57,630	Major Resources Support: <i>Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT)</i> . (with S. McAdams and 8 others)
2006-2013	FRQNT	\$1,530,000	Regroupement Stratégique pour <i>l'Étude des Environnements PARTagés Intelligents répartis (REPARTI)</i> . (with D. Laurendeau and 23 others) \$100,000 per annum allocated to CIM.
2002-2005	FCAR	\$720,000	Regroupement Stratégique: <i>Réseau Québécois de Recherche en Réalité Artificielle Distribuée (QUERRAnet)</i> . (with F. Ferrie, R. Bergevin, P. Cohen, and others)
2001	CFI	\$6,500,000	Major Facilities Award: <i>Centre for Integrated Research in Music Media and Technology</i> . (with W. Woszczyk and 11 others)
2000-2002	FCAR	\$113,500	Centre de Recherches. (with F. Ferrie and 17 others)
2000	NSERC	\$275,000	<i>Information Systems in Support of Intelligent Machine Research</i> . (with F. Ferrie and 17 others)

TEACHING

COURSES TAUGHT

Course title and number	Description	Semester
ECSE-421 <i>Embedded Systems</i>	Undergraduate course dealing with both the theory and practice of design for embedded systems	2018–present
ECSE-526 <i>Artificial Intelligence</i>	Graduate level course in artificial intelligence with emphasis on machine learning and autonomous agents	1998–present
*ECSE-683 <i>Topics in Vision and Robotics</i>	Graduate level laboratory course for RoboCup projects	Fall 2000 Fall 2002
*ECSE-424/542 <i>Human-Computer Interaction</i> [†]	Undergraduate (424) and graduate (542) course in human-computer interaction with emphasis on new interface paradigms	2000–present
ECSE-487 <i>Computer Architecture Laboratory</i>	Undergraduate laboratory course	1999–present
ECSE-427 <i>Operating Systems</i>	Undergraduate course (core for Computer Engineering students)	1998
CSC-270 <i>Introduction to Modelling and Optimization</i>	Computer Science undergraduate course, University of Toronto	1993–1994
CEE 1714Y <i>Digital Systems and Computers</i>	Continuing Engineering Education course for the Association of Professional Engineers of Ontario	1993–1994
CSC-228 <i>File Structures and Data Management</i>	Computer Science undergraduate course, University of Toronto	1992–1995
COSC-3411 <i>File Structures and Data Management</i>	Computer Science undergraduate course, York University	1992

*Indicates new course that I created.

[†]In 2011, a project from this class placed third in the [Usability Professionals Association International Student Design Competition](#). Note that graduate students have also enrolled in this course under the designation of ECSE-681, *Colloquium in Electrical Engineering* or ECSE-689, *Recent Advances in Electrical Engineering*.

UNDERGRADUATE SUPERVISION

Honors Undergraduate Projects (2 semesters)

Name	Year	Research topic
Bu, Bruce	2020	360° Imaging for Navigation Assistance for the Visually Impaired
Akgul, Ahmet	2017-2018	Haptic Wearables
Bashar, Sharhad	2016-2017	Image-based environment description
Wu, Pei Yuan (Richard)	2016	Mixed-Reality Human-Machine Interaction
Gordon, Adam	2011-12	Virtual Presence
Warraich, Shahjahan	2010-11	Natural Interactive Walking
Lin, Nan	2008	Location sensing for mobile apps
Wang, Letao	2007	Interactive Agent
Charlebois, Pierre-Olivier	2004–2005	Sound Objects in a Soundscape
Myer, Sam	2003	Automated Music Transcription
El-Refaei, Sameh	1998–1999	Shared Reality simulator

Undergraduate Design Projects (2 semesters)

Name	Year	Research topic
Ethan Lague	2019-2020	AR firefighter situational awareness tools
Alex Masciotra	2019-2020	AR firefighter situational awareness tools
Thomas Philippon	2019-2020	AR firefighter situational awareness tools
Tristan Bouchard	2019-2020	AR firefighter situational awareness tools
Babette Smith	2019-2020	AR and 360: camera-mediated future
Lilith Smith	2019-2020	AR and 360: camera-mediated future
Jennie Chen	2019-2020	Foot-fluid interaction simulation in mobile VR
Ryan Servera	2019-2020	Foot-fluid interaction simulation in mobile VR
Tyrone Wong	2019-2020	Foot-fluid interaction simulation in mobile VR
Lucas Bluethner	2019-2020	Foot-fluid interaction simulation in mobile VR
Volodina, Yuliya	2019	360° camera scene understanding
Ritch, David	2019	360° camera scene understanding
Lam, Guillaume	2019	360° camera scene understanding
Nasseem, Veronica	2019	360° camera scene understanding
Amjad, Adeeb Ibne	2019	360° camera supported intersection-crossing
Amarouche, Hakim	2019	360° camera supported intersection-crossing
Tang, James	2019	360° camera supported intersection-crossing
Commodari, Stefano	2019	360° camera supported intersection-crossing
Regimbal, Juliette	2019	Haptic Wearables
Radi, Nusaiba	2019	Haptic Wearables
Berman, Isaac	2018	Vision-based crossing assistance

Continued on next page

Name	Year	Research topic
Mashaal, Stuart	2018	Vision-based crossing assistance
Liu, Shi Yu	2018	Vision-based crossing assistance
Legrand, Augustin	2018	Force Feedback for VR and AR
Fournier, Clément	2018	Force Feedback for VR and AR
Nith, Romain	2018	Force Feedback for VR and AR
Malik, Numan	2017-2018	Variable-Friction Surface Mechanism
Eshaq, Yousef	2017-2018	Variable-Friction Surface Mechanism
Alalawi, Beshr	2017-2018	Variable-Friction Surface Mechanism
Ahmed, Ridwan	2017-2018	Variable-Friction Surface Mechanism
Nichyporuk, Brennan	2017-2018	AI/vision-based Q&A Dialogue
Benseler, Nick	2017-2018	AI/vision-based Q&A Dialogue
Karatzas, Thomas	2017-2018	Wine recommendation engine
Zhilin, Oleg	2017-2018	Wine recommendation engine
Simard-Morissette, Olivier	2017-2018	Wine recommendation engine
Mirfallah Liarestani, N.	2017	Autour
Kim, Yong Beom	2017	Autour
Gibeault-Girard, Gabriel	2017	AR firefighter display
Velastegui, Nicolas	2017	AR firefighter display
V Cama, Carmen Aimee	2017	AR firefighter display
Dermont, Daniel	2016-2017	Haptic shoes
Makriogiorgos, A.	2016-2017	Haptic shoes
Rohlicek, Greg	2015-2016	Mobile telepresence
Carter, Stephen	2015-2016	Mobile telepresence
Zhang, Zhaowei	2015-2016	Haptic shoes
Huynh, Alex	2015-2016	Haptic shoes
Guzman, Juan	2015-2016	Video analytics
Ali, Hassan	2015-2016	Video analytics
Macario, Daniel	2015-2016	Automated event detection
Arané, Yarden	2015-2016	Automated event detection
Leighon, Brett	2015-2016	Automated event detection
Aird, Nicholas	2015-2016	AR firefighter display
Chen, Yuechuan	2015-2016	AR firefighter display
Lei, Simon	2015-2016	AR firefighter display
Mendonca, Justin	2015-2016	Firefighter IPS
Asfour, Justin	2015-2016	Firefighter IPS
Ward, Thomas	2015-2016	Firefighter IPS
Laramée, Alexandre	2015-2016	Firefighter IPS
Sahib, Shivan	2015-2016	Biosignal wearables
Nath, Saptaparna	2015-2016	Biosignal wearables
Bramson, Shawn	2013–2014	Mobile Telepresence
Larose, Andrew	2013–2014	Mobile Telepresence
Dirik, Alize	2013–2014	Mobile Telepresence
Mansour, Rita	2013–2014	Walking Straight

Continued on next page

Name	Year	Research topic
Elkerdi, Ghalia	2013–2014	Walking Straight
Redel, Josh	2012	Augmented Meeting Collaboration
Savchenko, Eugene	2010	3D interaction

Undergraduate Design Projects (1 semester)

Name	Year	Name	Year	Name	Year
Himmelman, Tristan	2009	Glass, Emily	2001	Li, (Shao-Gi) Chris	1999
Ephraim, Theo	2009	Asselin, Ramy	2001	El-Sharif, Osama	1999
Peck, Benjamin†	2008	Sud, Daniel	2001	Nasereddin, Hazem	1999
Mankarios, Daniel	2007	Gapakov, Timofei	2001	Virdi, Gurpratap	1999
Konstantinidis, Alex	2007	Rosenblatt, Avi	2001	Shah, Ali	1999
Pufahl, David	2005	Pekofsky, Gregory	2001	Djihanian, Sylvie	1999
Zhu, Ming-Zhang	2005	Kitisa, Anousack	2000	Moussaoui, Khaled	1999
Chan, Keng Chi	2005	Vial, Thibaut	2000	Dib Youssef	1999
Phan, Andrew	2004	Bernier, Martin	2000	Tam, H.	1999
Saifee, Ali-Akber	2004	Agha, Khurram Z.	2000	Gagnon, Gabriel	1999
Shield, Robert	2004	Bhattacharya S.	2000	Tjhin, P.	1999
Aubé, Francois	2004	Lavery, William	2000	Luong, Mai	1999
Rudzicz, Frank	2003	Yeung, Jason	2000	Lau, Sau	1999
Sarikaya, Deniz	2002	Liao, Yuan Mei	1999	Tsai, Wanti	1999
Vallianatos, K.	2002	Yee, Amy	1999	Lerner, Sorin*	1999
Hassaine, Sofiane	2002	Pereira, David	1999	Hochstein, Lorin*	1999
Wyse, Marisa	2001	Ciambella, Gary	1999	Pollack, Jonathan	1998
Bancroft, David	2001	Kassouf, Nadim	1999	Nguyen, Bau	1998
		Lee, Garvin	1999		

*Co-supervised with James Clark

†Co-supervised with Paul Kry

Mechanical Engineering Undergraduate Design Projects (2 semesters)

Fowo, Clovis	2017-2018	Haptic interface for the feet
Robert, Gabrielle	2015-2016	Variable friction shoe
King, Michael	2013–2014	Variable Friction Foot-Ground Contact

Undergraduate Internships

Name	Year	Research project
Pollet, Nathan	2020	(SURE Student) 360° camera imaging
Bu, Bruce	2019	(SURE Student) Haptic Wearables
Chen, Jennie	2019	(SURE Student) Haptic Wearables
Zhang, Yukai	2019	(SURE Student) Haptic Wearables
Ratnakirti, Navneet	2019	(SURE Student) Sweatsponse
Al Taha, Feras	2018-2019	(NSERC USRA) Haptic Wearables
Nunez, Matteo	2018	(SURE Student) Haptic Wearables
Huang, Yixiang	2018	(SURE Student) Non-Intrusive Mobile Experience Sampling
Li, Zihang	2018	(Mitacs Globalink) Enhanced Remote Viewing Capabilities from a Camera Array
Kaoubi, Hadir	2018	(Mitacs Globalink) Autour: “What’s around me?”
Ma, Jiantong	2018	Haptic Zoom
Tran, Jessica	2017	Social Media Monitoring
Xing, Emily	2017	Attention Switching Protocols in Family Conversations
Hao, Ju	2017	(Mitacs Globalink research intern) Haptic shoes
Lisus, Daniil	2017	(NSERC USRA) Natural Interactive Walking
Tran, Andrew	2016-2017	Multimodal CAVE integration
Sun, Nan Jin (Kelly)	2016-2017	Multimodal CAVE integration
Liu, Yufei (Kevin)	2016	Flexible graphical display of foot-ground interactions
Kashyap, Sumeha	2016	(Summer Intern from Indian Institute of Technology Guwahati) Walking Straight Project
Hamed-Baghi, Bobak	2016	(SURE Student) Game Interaction for Haptic Shoes
Dubé, Felix	2016	(SURE Student) Haptic Shoes
Yang, Yanzhe	2015	(Mitacs Globalink) Enhanced Remote Viewing Capabilities from a Camera Array
Morency-Trudel, Juan	2015	(NSERC USRA) Spatialized audio for environmental awareness for the visually impaired
Liu, Bei Chen	2015	(SURE Student) Haptic in-sole design and implementation
Liu, Shuxuan (Dennis)	2015	Multimodal CAVE integration
Chaudhary, Yetesh	2014	Communication in Emergency and Crisis Response

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Name	Year	Research project
Pavleseck, Jana	2014	(NSERC USRA) Natural Interactive Walking
Jiang, Mike	2014	(IAESTE student trainee) Graphics Rendering for Multimodal CAVE
Yin, Guofan	2014	(Mitacs Globalink) Enhanced Remote Viewing Capabilities from a Camera Array
Murgai, Prateek	2014	Acoustic Signal Processing
Sharma, Alok	2013-14	(BITS India Student) rt Emergency Response
Gupta, Sakshi	2013	(SURE Student from Indian Institute of Information Technology, Jabalpur) In-Situ Audio Services
Brais, Robert	2013	(NSERC USRA) Natural Interactive Walking
Gourdy, Oriane	2013	(Grenoble INP Student) 3DUI Interaction
Jain, Nehil	2011-12	(BITS India Student) In-Situ Audio Services
Sutcliffe, Andrew	2011	Haptically Augmented Steering Wheel
Greencorn, Dan	2011	Food Analysis Simulation
Redel, Josh	2011	Open Orchestra
Varenne, Dylan	2011	(Polytech Nice-Sophia), In-Situ Audio Services
Tomiyoshi, Marcio	2011	(ELAP Scholarship Student) Open Orchestra
Beniak, Stephane	2010	(NSERC USRA) Natural Interactive Walking
Salenikovich, Stepan	2010	Natural Interactive Walking
Chaw, Gary	2010	Natural Interactive Walking
Redel, Josh	2010	Health Services Virtual Organization
Smith, Severin	2009-11	Natural Interactive Walking
Rajalingham, Rishi	2009	(NSERC USRA) Natural Interactive Walking
Rener, Farid	2009	(SURE Student) Natural Interactive Walking
Bae, Sung	2009	Optical Tracking for Audio Graffiti
Jathal, Kunal	2007	Haptic and auditory perception in human walking
Lin, Nan*	2006	(NSERC USRA) Interactive navigational control of robotic wheelchair
Reiter, Philippe	2005	(VP USRA Student) Distributed Video Rendering
Ariane Chan-You	2003	Region-of-Interest Control in Videoconferencing

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Name	Year	Research project
Ariane Chan-You	2002	Videoconferencing Data Reduction
Gupta, Greeshma	2000	(NSERC Student) Automated slide converter
Cote, Christian	2000	(NSERC Student) Video transformations
Ayatizadeh, Negah	2000	Network communication daemons
Swartz, Tanya	2000	Speech-based TV-tuner interface
Cohen, Ouri	2000	Classroom 2000 access control
Yeong, Jason Aw	1999	(Work Study) Previously Asked Questions system
Agha, Khurram Zubair	1999	(Work Study) URL access tracking
Lim, Weoi Peng	1999	(Work Study) Graffiti board
Agha, Haroon Ali	1999	(Work Study) Classroom 2000 minipres. system
Klinger, Zamir	2000	(NSERC Student) Automated Door Attendant
Hooshangi, Sara	2000	(NSERC Student) Intelligent Classroom
Liao, Yuan Mei	1999	Electronic Classroom control interfaces
Luo, Jiexin	1999	PowerPoint C2000 interface and image libraries
Zhao, Changpeng	1998-99	Seamless PowerPoint upload for Classroom 2000
Lakdawalla, Azeem	1998-99	Real-time conjugate-gradient based head-tracking

*Co-supervised with Joelle Pineau

SERVICE
UNIVERSITY SERVICE**Department Committees**

2020	ECE Unit Lab Access Committee
2017-2018	Undergraduate Recruitment Committee, Chair
2017-2020	Search Committee (Software Engineering, Artificial Intelligence)
2017-2018	Tenure Committee
2015-2017	Safety Committee, Chair
2014-2016	Grant Application Support Committee
2012-2018	Graduate Committee
2008-2012	Undergraduate Recruitment Committee
2005-2011	Scholarships/Graduate Student Financing Committee
2002	Ad hoc Committee on Computing Infrastructure for ECE/SOCS
2000-2008	College Liaison Committee
2001-2004	Information Technologies & Undergraduate Lab
2000-2002	Curriculum Committee
2000	Software Engineering subcommittee
2000-2007	Undergraduate Student Advisor

Other University Service

2014-2016	Elected Member of Council, McGill Association of University Teachers
2009-2013	Member, CIRMMT Executive Committee
2007-2013	Co-chair, Multimodal Immersive Systems research axis, CIRMMT
2006-2008	Member, CIRMMT Board of Directors
2006	Advisory Committee for Dean of Music
2004	Tomlinson University Science Teaching Project adjudication
2003-2004	Royal Bank Teaching and Learning Innovation Fund adjudication
2003	Groupe de travail sur les normes et standards de la formation en ligne. Conférence des recteurs et des principaux des universités du Québec (CREPUQ), McGill University Representative
2002-2003	SC-IST Workgroup on Research Computing
2000-2003	SC-IST Workgroup on Classroom Design
1999-2004	Engineering Committee on Teaching and Learning
1999	SC-IST McGill Machine Project
1998	Workgroup on Educational Technology

Fundraising Activities

2002	RoboCup demonstration at McCord museum for Dean's Circle
2002	Corporate fundraising for McGill RoboCup team
2001-2002	Intelligent Classroom promotion with the Engineering Class of '50; helped raise \$274,000
2001	Trottier Building research promotion

Other Activities

2007-2010	Promotion of Academic Integrity
2001-2002	Design of new Intelligent Classroom systems for ENGM 304
1999-2002	Maintenance of the Intelligent Classrooms, training other faculty in use of the technology
1999	Curriculum development of three new courses in software engineering

PROFESSIONAL ACTIVITIES**Service to the Community**

2019	Gouvernement of Canada, Network of Canadian Experts on Virtual Reality
2018	Consulted by Order des ingénieurs du Québec regarding the OIQ's position on AI
2018	Invited Member, Fonds de recherche, Chantier sur l'intersectorialité et la créativité
2018	Co-chair, ACM SIGCHI Demonstrations
2017	External member of academic selection committee, École de technologie supérieure
2016	Organizing Committee, IEEE International Workshop on Multimedia Signal Processing, Special Session on Multimodal Interaction with Digital Information in Smart Cities
2016,2019	Selection Committee, Bill Buxton HCI Thesis Award
2016	Digital Media Program Review, York University
2016	Critique of TCPS CORE Tutorial on Research Ethics (Secretariat agreed to remove problematic question associated with the Zimbardo study)
2010-2015	Theme Leader, Enabling Technologies, Graphics Animation and New Media (GRAND) Networks of Centres of Excellence
2010-ongoing	Voting Member, IEEE Communication Society Multimedia Communications Technical Committee (IEEE MMTC)
2010	Participant, NSF/CCC Workshop on Ultra-Large Scale Interaction
2009	Organizer and Chair, AES Workshop on Network Technologies for Audio over IP
2008	Tenure Portfolio evaluation, York University
2005-2006	Organizer, AES Tutorial and Workshop on Human Factors in Audio
2004	Founder, AES Technical Committee for Human Factors in Audio Systems
2003	Organizer, Workshop on LAN Delivery of Audio for AES
2002-2003	Comité Scientifique de Robofolies, Centre Science de Montreal
2001	Local Events Organizer, Autonomous Agents Conference, Montreal
2001-2009	Chair, AES Technical Committee for Network Audio Systems
2000-2004	Scientific Organizer, RoboCup Junior, Montreal
2000-2001	Organizing Committee, Robofesta International Robot Games Festival, Japan
1999-2000	Member and Webmaster, Canadian Virtualized Reality Working Group
1998	Co-organizer, AAAI Symposium on Intelligent Environments

Editorial Service

2020-ongoing	Associate Editor, Frontiers in Virtual Reality
2019	Associate Editor, World Haptics Conference
2019	Guest Editor, Multimodal Technologies and Interaction, Special Issue on Multimodal Medical Alarms
2018-2020	Associate Editor, Program Committee member, Haptics Symposium
2013	Guest Editor, Journal of the Audio Engineering Society, Special Issue on Audio Networking
2008-ongoing	Associate Editor, Journal of the Audio Engineering Society

Journal Referee

2020	ACM Transactions on Applied Perception
2020	ACM Interactive, Mobile, Wearable and Ubiquitous Technologies
2019	Frontiers in Neurobotics
2018	Peer J – Journal of Life & Environmental Sciences
2017	Sensor Review
2015	Ambient Intelligence and Smart Environments
2010-20	IEEE Transactions on Haptics
2012	International Journal on Acoustics
2011	BMC Medical Informatics and Decision Making
2011	IEEE Software
2010	IEEE Transactions on Affective Computing
2010	IEEE Transactions on Robotics
2010	IEEE Signal Processing Magazine
2009	IEEE Transactions on Robotics
2008	EURASIP Advances in Signal Processing
2008	EURASIP Image and Video Processing
2008-ongoing	Audio Engineering Society
2007	IEEE Transactions on Systems, Man, and Cybernetics
2006	International Journal of Human-Computer Interaction
2006	Springer Virtual Reality
2005	Elsevier: Computers and Education
2005	Elsevier: Image and Vision Computing
2004, 2019	IEEE Pervasive Computing
2000, 2003	Wiley Journal of Robotic Systems
1999	ACM Transactions on Computer-Human Interaction
1999	IEEE Transactions on Robotics and Automation
1998	IEEE Personal Communications

Conference Review

2018, 2020	ACM SIGCHI User Interface Systems and Techniques
2018	Workshop on Assistive Computer Vision and Robotics
2018	Eurohaptics
2017	International Conference on Auditory Display
2017	Mobile HCI
2017-19	IEEE World Haptics
2016	IEEE International Workshop on Multimedia Signal Processing
2015	ACM Multimedia
2015	INTERACT
2014	ACM SIGGRAPH
2012, 2013	Workshop on Context Based Affect Recognition
2012, 2013	International Society for Presence Research
2012	IEEE Canadian Conference on Electrical and Computer Engineering
2011	AES Conference on Audio Networking
2011	Intelligent Robots and Systems
2011	VRIC Wkshop on Haptics for Telepresence, Teleoperation & Collab. Environments
2009	IEEE Haptics Symposium
2009	International Computer Music Conference
2009	Stereoscopic Displays and Applications
2008-19	ACM SIGCHI Human Factors in Computing
2008	Immersive Medical Telepresence
2006	International Conference on Digital Audio Effects
2006, 2007	IEEE Workshop on Projector-Camera Systems (part of CVPR)
2005-2009	Canadian Conference on Computer and Robot Vision
2004, 2009-14, 2016	Graphics Interface
2003, 2006	Audio Engineering Society
2003	New Interfaces for Musical Expression
2002	RoboCup International Symposium
2002, 2015	IEEE International Conference on Robotics and Automation
2001	ACM UbiComp
2001	IEEE International Conference on Computer Vision

Grant Review

2017	NSERC Strategic Project Grants
2017	Member of Expert Committee, CFI Innovation Fund
2016	L'Agence Nationale de la Recherche (France)
2011	NSERC Collaborative Research and Training Experience Program (CREATE)
2009, 2011	Mathematics of Information Technology and Complex Systems (MITACS)
2009	NSERC Strategic Networks (Site Visit Chair)
2008, 2015, 2017	Peer review, NSERC Collaborative Research and Development Grants
2007-2008	NSERC Industrial Research Chair (Site Visit)
2007-2020	Research Grants Council, Hong Kong
2005	NSERC Steacie Memorial Fellowship
2002, 2005-2008	Panel member, NSERC/Canada Council, New Media Initiative
2001-2017	Peer review, NSERC Discovery Grants
2001, 2008	Peer review, CFI (Canada Foundation for Innovation)

Participation in Academic Fora

2019	San Diego Opera – Opera Hack, July 27-28
2019	Dagstuhl Seminar on Ubiquitous Computing Education, June 2-7

CONSUMER ADVOCACY

2013	brought successful appeal (2013 QCCA 1670) before Quebec Court of Appeal regarding anti-SLAPP legislation
2013	initiated petition to improve rights of Canadian airline passengers
2010	advocating for reliable public transportation in Montreal
1997-present	created and maintained passenger rights website