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Corey Kereliuk

Education

2008–2013 **Ph.D. Music**, *McGill University*, Montréal, Canada.
2006–2008 **M.A. Music**, *McGill University*, Montréal, Canada.
1998–2004 **B.Sc. Electrical Engineering**, *University of Alberta*, Edmonton, Canada.

Research Funding and Awards

2008–2012 NSERC *Alexander Graham Bell* Canada Graduate Scholarship, $105,000
2008 McGill Provost's Graduate Fellowship, $5,000
2007 Schulich School of Music Scholarship, $10,000
2007 International Computer Music Conference, Student Scholarship
2006 Marianna Eaton Scholarship, $2,000
2005 Smart Technologies, Inc., Invention Disclosure Award
2004 AO Foundation of Switzerland, Patent Application Award

Professional Experience

02/2015 - Present **Full-time Audio Consultant, Reverberate.ca**.
I work together with my clients on innovative and patentable audio technologies by researching and developing of novel algorithmic and digital signal processing solutions.

Current clients:

- Eventide Audio
- AudioKinetic

Past clients:

- DOSIMmusic

10/2014—03/2015 **Post-doctoral research fellow**, *The Technical University of Denmark (DTU)*, *Cognitive Systems Group*, Copenhagen, Denmark.
Co-Investigator on joint research project between DTU and Queen Mary University of London. This project examines the relevance of deep neural networks for content-based music description, especially music genre recognition.

10/2014, 03/2015 **Lecturer**, *Roskilde University*, Roskilde, Denmark.
Designed and led a workshop on *Sound Design and Audio Programming* for undergraduate students in the *HumTek* (humanities and technologies) bachelor's program. This two week, intensive workshop, introduced participants to aspects of sound synthesis, machine listening, sonic interaction, and data sonification using the SuperCollider programming environment.

01/2013—10/2013 **Post-doctoral research fellow**, *School of Interactive Arts + Technology*, *Simon Fraser University*, Vancouver, Canada.
Co-Investigator on research project aimed at audio restoration, interpolation, and sound morphing. Mentored two graduate students on their research projects aimed at soundscape classification and the automatic preset generation.

Spring 2013 **Instructor: Interactive Sound + Video**, *Emily Carr University*, Vancouver, Canada.
Designed and led a course on the theory and practice of electronic music, visualization, and interaction design. The Pure Data (Pd) graphical programming language was used as a tool to demonstrate concepts and realize interactive audio/visual artworks and installation pieces.

Fall 2010 **Instructor: Digital audio signal processing**, *McGill University*, Montréal, Canada.
Led an advanced undergraduate/graduate course on digital signal processing. The range of topics in this course spanned from foundational concepts such as linear time-invariant systems theory to advanced topics including time-frequency analysis of audio.

2004–2006 **R&D Engineer**, *SMART Technologies*, Calgary, Canada.
Worked on the development and implementation of computer vision algorithms used to track gestures in adverse and changing light environments.

2003 **Research Fellow**, *M.E.M. Center for Orthopedic Research*, Bern, Switzerland.
Developed and evaluated an infrared tracking system for use in computer assisted orthopedic surgery. The results of this work were published in the Journal of Computer Aided Surgery.

Publications

1. **Kereliuk, C.**, Sturm, B., Larsen, J. 2015. *Deep learning and music adversaries.* IEEE Transactions on Multimedia, vol. 17:11, pp. 2059–2071.
2. **Kereliuk, C.**, Sturm, B., Larsen, J. 2015. *Deep Learning, Audio Adversaries, and Music Content Analysis.* IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, pp. 1–5.
3. Sturm, B., **Kereliuk, C.**, Larsen, J. 2015. *?El Caballo Viejo? Latin genre recognition with deep learning and spectral periodicity.* International Conference on Mathematics and Computation in Music, pp. 335–346.
4. **Kereliuk, C.**, Sturm, B., Larsen, J. 2014. *Are deep neural networks really learning relevant features?* Abstract and Poster presented at the Digital Music Research Network, Queen Mary University of London, Centre for Digital Music.
5. Sturm, B., Pikrakis, A., **Kereliuk, C.** 2014. *A Closer Look At Deep Learning Neural Networks With Low-Level Spectral Periodicity Features.* International Workshop on Cognitive Information Processing, pp 1–6.
6. **Kereliuk, C.**, P. Depalle, P. Pasquier. 2013. *Audio Interpolation and Morphing Via Structured-sparse Linear Regression.* International Conference on Sound and Music Computing, pp. 546–552.
7. **Kereliuk, C.**, P. Depalle. 2013. *Analysis/Synthesis Using Time-varying Windows and Chirped Atoms.* International Conference on Digital Audio Effects, pp 1–8.
8. **Kereliuk, C.** 2013. *Sparse and Structured Atomic Modelling of Audio.* PhD Dissertation. McGill University.
9. **Kereliuk, C.**, P. Depalle. 2011. *Sparse Atomic Modelling of Audio: A Review.* International Conference on Digital Audio Effects, pp. 81–92.
10. **Kereliuk, C.** 2008. *Improved Hidden Markov Model Partial Tracking for Additive Synthesis using Time-Frequency Analysis.* MA Dissertation. McGill University.
11. **Kereliuk, C.**, P. Depalle. 2008. *Improved Hidden Markov Model Partial Tracking Through Time-Frequency Analysis.* International Conference on Digital Audio Effects, pp. 111-116.
12. Burgoyne, J.A., L. Pugin, **C. Kereliuk**, and I. Fujinaga. 2007. *A Cross-Validated Study of Modeling Strategies for Automatic Chord Recognition in Audio.* International Conference on Music Information Retrieval, pp. 251-254.
13. **Kereliuk, C.**, B. Scherrer, V. Verfaille, P. Depalle, M. Wanderley. 2007. *Indirect Acquisition of Fingerings of Harmonic Notes on the Flute.* International Computer Music Conference, pp. 263–266.

14. Langlotz, F., **C. Kereliuk**, Anderegg, C. 2006. *Augmenting the effective field of view of optical tracking cameras—a way to overcome difficulties during intraoperative camera alignment.* Journal of Computer Aided Surgery, Vol. 11, No. 1, pp. 31–36.

15. Langlotz, F., **C. Kereliuk**. 2004. *Expanding the Intraoperative Field-of-View of Optical Tracking Systems.* International Computer Assisted Orthopedic Surgery Conference, pp. 34-37.

Academic Service

- Reviewer: IEEE Transactions on Audio Speech and Language Processing
- Reviewer: International Symposium on Music Information Retrieval
- Reviewer: Sound and Music Computing Conference
- Reviewer: AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment
- Reviewer: International Workshop on Musical Metacreation
- Student representative: Centre for Interdisciplinary Research in Music Media and Technology, 2011
- Organizer: Music Hack Day Montréal, 2011
- Organizer: Scientific Python and Advanced Matlab Workshop, Montréal, 2008

Competencies

Skills	Signal Processing, Machine Learning, Machine Listening, Time-series Analysis, Sound and Music Computing, Computer Science, Electrical Engineering and Electronics, Image Processing, Music
Languages	Python, Matlab, C, C++, Clojure, Javascript, HTML, CSS, LaTeX, PureData, Max/MSP, ChucK, SuperCollider, openFrameworks, Processing, English, Un peu de Français, Lidt Dansk