

CORY MCKAY

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TEACHING EMPLOYMENT

2006- Faculty

Department of Liberal and Creative Arts, Marianopolis College, Westmount, Quebec, Canada

Designed and taught courses focusing on a broad range of areas, including music technology, sound recording, audio production, psychoacoustics, digital audio signal processing, symbolic music, live computer music performance, music sociology and ethical issues associated with video games. Developed and oversaw the college's recording studio, supervised the graduating recitals of all music students, served on a variety of academic committees and founded and directed the Marianopolis Laptop Orchestra (MLOrk).

2004-11 Sessional Instructor

Music Technology Area, McGill University, Montreal, Quebec, Canada

Taught a wide variety of courses dealing with topics such as advanced music programming, digital audio signal processing, sound synthesis, basic psychoacoustics, sound recording, audio production, symbolic music processing, image processing and video production.

1998-04 Teaching Assistant

McGill University, Montreal, Quebec, Canada + University of Guelph, Guelph, Ontario, Canada

TAed courses in music technology, computer science, mathematics and physics.

RESEARCH EMPLOYMENT

2010 Postdoctoral Researcher: Metadata Mining

Computer Science Department, University of Waikato, Hamilton, New Zealand

Implemented software for identifying musical recordings, automatically mining a variety of on-line sources for associated metadata and extracting features from the recordings. This software was built into the Greenstone digital library framework in order facilitate access to the extracted information.

2008-10 Research Assistant: Networked Environment for Music Analysis (NEMA)

Music Technology Area, McGill University, Montreal, Quebec, Canada

Worked with a multi-university research group on developing a general, open and extensible web services-based resource framework for music information retrieval research. Focused on the development and integration of the jMIR automatic music classification software suite. Helped to successfully apply for research funding from The Andrew W. Mellon Foundation. Hired and supervised other research assistants.

2004 Research Assistant: Optical Music Recognition

Music Technology Area, McGill University, Montreal, Quebec, Canada

Designed software for automatically processing digital scans of medieval musical manuscripts in order to remove degradations such as bleed-through and to detect score features such as staff lines for the purpose of automatic digital transcription.

2002-03 Research Assistant: Performance Gesture Analysis

Music Technology Area, McGill University, Montreal, Quebec, Canada

Researched the performance gestures of clarinet players and how they are related to the perceived expressivity of musical performances. Collected and analyzed video and Optotrak motion tracking data.

MISCELLANEOUS EMPLOYMENT

- 2007- **Freelance Recording Engineer**
Montreal, Quebec, Canada
Recorded live and studio classical and jazz performances.
- 2001-02 **Computer Help Line and Help Desk Consultant**
Computing & Communication Services, University of Guelph, Guelph, Ontario, Canada
Resolved problems encountered by staff and students calling a technical support line or coming to a support desk. Supervised three computer labs. Areas supported included university networking services, a wide range of Windows applications and general computer-related questions.
- 2001 **Web Designer**
University of Guelph, Guelph, Ontario, Canada
Researched material to put on the web sites of a set of university courses on Canadian History. Designed and implemented the web sites.
- 2000-01 **Web Designer**
Ontario Public Interest Research Group, Guelph, Ontario, Canada
Designed and maintained OPIRG Guelph's web page. Researched and published a weekly list of community events through e-mail and on the web.
- 1999-01 **Life Model**
University of Guelph, Guelph, Ontario, Canada
Modelled long and short poses for studio art courses in drawing, painting and mixed media.
- 1994-00 **Private Tutor**
Taught guitar, computer science, music theory, physics, mathematics, chemistry and English to university, CEGEP and high school students, both individually and in groups.
- 1998 **Computer Programmer**
Royal Trust, Montreal, Quebec, Canada
Devised and implemented algorithms to translate various computer file formats so that investment contribution and demographics files sent in by clients using different file formats could be used. Trained staff to use the software produced.
- 1997 **Office Clerk**
Royal Bank of Scotland, Edinburgh, Scotland
Searched for differences between financial reports of the head office of the bank and branches. Reconciled these differences and ensured that errors were corrected.
- 1989-96 **General Labourer**
P.E.I. Miniature Railway, Alberton, Prince Edward Island, Canada
Performed maintenance work on railroad tracks and engines. Served as train driver and cashier. Performed many miscellaneous jobs, including painting, earth works and forestry.
- 1992-94 **System Administrator**
Wagar High School, Côte St. Luc, Quebec, Canada
Supervising a LAN, installed and maintained software and helped students use the computers.

EDUCATION

- 2004-10 **Ph.D. – Music Technology**
McGill University, Montreal, Quebec, Canada
- 2002-04 **M.A. – Music Technology**
McGill University, Montreal, Quebec, Canada
- 1998-02 **B.A. – Honours Double Major in Music and in Computer Science**
University of Guelph, Guelph, Ontario, Canada
- 1995-98 **B.Sc. – Major in Physics**
McGill University, Montreal, Quebec, Canada
- 1993-95 **Diploma of Collegial Studies – Pure and Applied Science**
Dawson College, Montreal, Quebec, Canada

ACADEMIC GRANTS, SCHOLARSHIPS AND HONOURS

- 2010 Completed Ph.D. at McGill University with a CGPA of 4.0 out of 4.0
- 2007-09 CIRMMT Grants (totalling \$3000)
- 2009 GREAT Award (\$500)
- 2004-07 SSHRC Canada Graduate Scholarship (\$35,000 per year, \$105,000 total)
- 2004-07 McGill Alma Mater Grants (totalling \$5000)
- 2006 Outstanding Paper Award at the ISMIR 2006 conference (\$500)
- 2005 First place in all categories in the MIREX Symbolic Music Genre Classification contest
- 2004 Completed M.A. at McGill University (Dean's Honour List) with a CGPA of 3.9 out of 4.0
- 2003-04 FQRSC Bourse de maîtrise en recherche (\$15,000 per year, \$20,000 total)
- 2002 Marianna Eaton Scholarship (\$2500)
- 2002 Completed B.A. at University of Guelph (Distinction) with an average of 87%
- 2002 Gloria Guthrie Memorial Music Scholarship (\$500)
- 2002 University of Guelph Essay Prize in Music (\$100)
- 2001 Friends of Music In-Course Scholarship (\$300)
- 2001 University of Guelph Essay Prize in Music (\$100)
- 1998 Completed B.Sc. at McGill University (Great Distinction) with a CGPA of 3.5 out of 4.0
- 1995 James McGill Entrance Scholarship (\$2000)
- 1995 Completed D.E.C. at Dawson College (First Class Honours) with a 91% average

RESEARCH INTERESTS

- **Music Information Retrieval (MIR):** automatic music classification, musical feature extraction (from audio, symbolic music, lyrics, images and data available on the web), musical similarity measurement, automated audio transcription and optical music recognition
- **Digital Libraries:** music metadata annotation and standardized representational formats
- **Computer Science:** machine learning, pattern recognition and web mining
- **Music Performance:** automatic accompaniment systems, analysis of performers' expressive gestures and guitar-like hyper instruments
- **Education:** AI-based music tutors
- **Music Industry:** alternative music monetization strategies
- **Psychology:** the perception of emotion in music and classification theory

SCHOLARLY JOURNAL ARTICLES

- McKay, C., and I. Fujinaga. 2007. Style-independent computer-assisted exploratory analysis of large music collections. *Journal of Interdisciplinary Music Studies* 1 (1): 63–85.
- Wanderley, M., B. Vines, N. Middleton, C. McKay, and W. Hatch. 2005. The musical significance of clarinetists' ancillary gestures: An exploration of the field. *Journal of New Music Research* 34 (1): 97–113.

PEER-REVIEWED ACADEMIC CONFERENCE PAPERS

- McKay, C., and D. Bainbridge. 2011. A musical web mining and audio feature extraction extension to the Greenstone digital library software. *Proceedings of the International Society for Music Information Retrieval Conference*. 459–464.
- Angeles, B., C. McKay, and I. Fujinaga. 2010. Discovering metadata inconsistencies. *Proceedings of the International Society for Music Information Retrieval Conference*. 195–200.
- McKay, C., J. A. Burgoyne, J. Hockman, J. B. L. Smith, G. Vigiensoni, and I. Fujinaga. 2010. Evaluating the genre classification performance of lyrical features relative to audio, symbolic and cultural features. *Proceedings of the International Society for Music Information Retrieval Conference*. 213–8.
- McKay, C., and I. Fujinaga. 2010. Improving automatic music classification performance by extracting features from different types of data. *Proceedings of the ACM SIGMM International Conference on Multimedia Information Retrieval*. 257–66.
- Vigiensoni, G., C. McKay, and I. Fujinaga. 2010. Using jWebMiner 2.0 to improve music classification performance by combining different types of features mined from the web. *Proceedings of the International Society for Music Information Retrieval Conference*. 607–12.
- McKay, C., J. A. Burgoyne, and I. Fujinaga. 2009. jMIR and ACE XML: Tools for performing and sharing research in automatic music classification. Presented at the *ACM/IEEE Joint Conference on Digital Libraries Workshop on Integrating Digital Library Content with Computational Tools and Services*, University of Texas, Austin, USA. 19 June 2009.
- McKay, C., J. A. Burgoyne, J. Thompson, and I. Fujinaga. 2009. Using ACE XML 2.0 to store and share feature, instance and class data for musical classification. *Proceedings of the International Society for Music Information Retrieval Conference*. 303–8.
- McKay, C., and I. Fujinaga. 2009. jMIR: Tools for automatic music classification. *Proceedings of the International Computer Music Conference*. 65–8.
- Thompson, J., C. McKay, J. A. Burgoyne, and I. Fujinaga. 2009. Additions and improvements to the ACE 2.0 music classifier. *Proceedings of the International Society for Music Information Retrieval Conference*. 435–40.
- Fujinaga, I., and C. McKay. 2008. ACE: Autonomous Classification Engine. *Proceedings of the International Conference on Music Perception and Cognition*.
- McKay, C., and I. Fujinaga. 2008. Combining features extracted from audio, symbolic and cultural sources. *Proceedings of the International Conference on Music Information Retrieval*. 597–602.
- Fujinaga, I., J. A. Burgoyne, C. Lai, B. Li, C. McKay, and L. Pugin. 2007. Distributed Digital Music Archives and Libraries (DDMAL). Presented at the *Joint Conference of the Canadian Association of Music Libraries and the Association of Quebec Music Libraries*.
- McKay, C., and I. Fujinaga. 2007. jWebMiner: A web-based feature extractor. *Proceedings of the International Conference on Music Information Retrieval*. 113–4.
- McEnnis, D., C. McKay, and I. Fujinaga. 2006. jAudio: Additions and improvements. *Proceedings of the International Conference on Music Information Retrieval*. 385–6.
- McEnnis, D., C. McKay, and I. Fujinaga. 2006. Overview of OMEN. *Proceedings of the International Conference on Music Information Retrieval*. 7–12.

PEER-REVIEWED ACADEMIC CONFERENCE PAPERS (continued)

- McKay, C., and I. Fujinaga. 2006. jSymbolic: A feature extractor for MIDI files. *Proceedings of the International Computer Music Conference*. 302–5.
- McKay, C., and I. Fujinaga. 2006. Musical genre classification: Is it worth pursuing and how can it be improved?. *Proceedings of the International Conference on Music Information Retrieval*. 101–6.
- McKay, C., and I. Fujinaga. 2006. Style-independent computer-assisted exploratory analysis of large music collections. Presented at the *Joint Meeting of the American Musicological Society and the Society for Music Theory*.
- McKay, C., D. McEnnis, and I. Fujinaga. 2006. A large publicly accessible prototype audio database for music research. *Proceedings of the International Conference on Music Information Retrieval*. 160–3.
- Fiebrink, R., C. McKay, and I. Fujinaga. 2005. Combining D2K and JGAP for efficient feature weighting for classification tasks in music information retrieval. *Proceedings of the International Conference on Music Information Retrieval*. 510–3
- McEnnis, D., C. McKay, I. Fujinaga, and P. Depalle. 2005. jAudio: A feature extraction library. *Proceedings of the International Conference on Music Information Retrieval*. 600–3.
- McKay, C. 2005. Approaches to overcoming problems in interactive musical performance systems. Presented at the *McGill Graduate Students Society Symposium*.
- McKay, C., R. Fiebrink, D. McEnnis, B. Li, and I. Fujinaga. 2005. ACE: A framework for optimizing music classification. *Proceedings of the International Conference on Music Information Retrieval*. 42–9.
- McKay, C., and I. Fujinaga. 2005. Automatic music classification and the importance of instrument identification. *Proceedings of the Conference on Interdisciplinary Musicology*. CD-ROM.
- McKay, C., and I. Fujinaga. 2005. The Bodhidharma system and the results of the MIREX 2005 symbolic genre classification contest. Presented at the *International Conference on Music Information Retrieval*.
- McKay, C., D. McEnnis, R. Fiebrink, and I. Fujinaga. 2005. ACE: A general-purpose classification ensemble optimization framework. *Proceedings of the International Computer Music Conference*. 161–4.
- Sinyor, E., C. McKay, R. Fiebrink, D. McEnnis, and I. Fujinaga. 2005. Beatbox classification using ACE. *Proceedings of the International Conference on Music Information Retrieval*. 672–5.
- McKay, C. 2004. Issues in automatic musical genre classification. Presented at the *McGill Graduate Students Society Symposium*.
- McKay, C and I. Fujinaga. 2004. Automatic genre classification using large high-level musical feature sets. *Proceedings of the International Conference on Music Information Retrieval*. 525–30.
- McKay, C. 2004. Automatic genre classification as a study of the viability of high-level features for music classification. *Proceedings of the International Computer Music Conference*. 367–70.

INVITED PRESENTATIONS

- McKay, C. 2012. Classifying music with jMIR. *Invited Speaker*. Department of Languages and Science of Computation, University of Malaga, Spain. 10 January 2012.
- McKay, C. 2010. Evaluating the performance of lyrical features relative to and in combination with audio, symbolic and cultural features. Presented at the *CIRMMT Workshop on Music Information Retrieval and Cultural Data*, McGill University, Montreal, Canada. 22 October 2010.
- McKay, C. 2009. Using timbre to predict musical genre: Promising solution or dead end?. Presented at the *CIRMMT Workshop on Timbre*, McGill University, Montreal, Canada. 11 October 2009.
- McKay, C. 2008. Combining feature types with jMIR. Presented at the *Montreal Music and Machine Learning Workshop*, Université de Montréal, Montreal, Canada. 14 November 2008.
- McKay, C., J. Frank, and J. Turel. 2007. Audiofile: No box, no limit. Presented at *Pop & Policy 2007: Music fast forward*.

THESES

- McKay, C. 2010. Automatic music classification with jMIR. *Ph.D. Dissertation*. McGill University, Canada.
- McKay, C. 2004. Automatic genre classification of MIDI recordings. *M.A. Thesis*. McGill University, Canada.
- McKay, C. 2002. SpeciesChecker: A system for automatically proofreading species counterpoint. *Undergraduate Thesis*. University of Guelph, Canada.
- McKay, C., and T. M. Luong. 1998. Localization of mobile robots using magnetic fields. *Undergraduate Thesis*. McGill University, Canada.

PROFESSIONAL AFFILIATIONS

- 2006- Centre for Interdisciplinary Research in Music, Media and Technology (CIRMMT)
- 2009- International Society for Music Information Retrieval (ISMIR)
- 2009-11 Association for Computing Machinery (ACM)
- 2004-09 International Computer Music Association (ICMA)
- 2006 Society for Music Theory

LOCAL ACADEMIC COMMITTEES AND OTHER ORGANIZATIONS

- 2008- Marianopolis Laptop Orchestra (MLOrk) (*Founder and Director*)
- 2008- Marianopolis ArtsFest Organizing Committee
- 2009- Marianopolis Arts Program Assessment, Development and Evaluation Committee
- 2008-09 Marianopolis Admissions Task Force on Language Proficiency Committee
- 2008 Marianopolis Technology in Teaching and Learning Committee
- 2005-07 McGill Music Technology Area Committee (*Graduate Student Representative*)
- 2007 Local organizing committee for the Society of Music Perception & Cognition (SMPC)
- 2006 Local organizing committee for the Digital Audio Effects conference (DAFx)
- 2005 ISMIR MIREX Symbolic Genre Classification Contest organizer
- 2003 Local organizing committee for the New Interfaces for Musical Expression Conference (NIME)
- 2000-01 University of Guelph Senate Board of Undergraduate Studies
- 2000-01 University of Guelph Senate Petitions Committee
- 2000-01 University of Guelph Senator

JOURNAL AND CONFERENCE REVIEW COMMITTEES

- 2011 Journal of New Music Research
- 2010-11 Pattern Recognition Letters
- 2005-10 International Society for Music Information Retrieval Conference (ISMIR)
- 2008-09 International Computer Music Conference (ICMC)
- 2007-09 IEEE Transactions on Audio, Speech and Language Processing
- 2006-07 Journal of Interdisciplinary Music Studies (*Associate Editor*)
- 2006 EURASIP Journal on Applied Signal Processing

STUDENT GOVERNMENT

- 2003-05 Vice President of McGill Music Graduate Students Society
- 2002-03 Faculty of Music Representative to the McGill Post-Graduate Students' Society
- 1999-00 Board Member of the University of Guelph Central Students' Association

LANGUAGES

English and French

GENERAL EXPERIENCE

1993- **Musical Performance**

Founded, directed and performed with the Marianopolis Laptop Orchestra (MLOrk). Studied jazz, blues and classical guitar and electric bass at the University of Guelph, McGill Conservatory, Musician's Professional Workshop and Guitar Study Center. Performed both individually and in ensembles at many concerts and recitals.

1993- **Athletics**

Participated in community and intramural hockey, floor hockey broomball, squash, badminton and tennis teams and organizations. Took community courses in judo, karate, yoga, tai chi, pilates, physical training, squash, salsa, highland dancing and social dancing.

1996-02 **Radio**

DJ, producer and sound technician at CKUT FM and CFRU FM, two university/community radio stations. Hosted and teched a number of weekly shows focusing on areas such as jazz, classical music, theatre, social awareness and community events. Also did fill-ins and guest spots on many other shows. Participated in program planning meetings. Produced carts and reels in studio.

1992-02 **Newspapers and Magazines**

Editor of an on-campus literary magazine and staff writer for several university newspapers. Wrote news articles, opinion columns, arts and entertainment reviews, short stories and poetry. Did extensive editing and creative layout work. Published in The Guelph Mercury, The McGill Tribune, The McGill Daily, The Ontarion, The Peak, Innuendo and several organizational newsletters.

1993-01 **Social Work**

Volunteered at the geriatrics ward of the Jewish General Hospital. Also a volunteer at Friday Friends and the Hillside Access Tent, respectively a community program and a festival help center concerned with helping people with special needs. Provided information to the public, set up recreational projects, worked directly with participants and patients and did clerical work and site maintenance.

1989- **Travel**

Worked in Canada, Scotland and New Zealand. Traveled extensively in Japan, the U.K., the Netherlands, France, Spain, Italy, Switzerland, Germany, Austria, the Czech Republic, Cuba, the Dominican Republic and Mexico. Have traveled throughout both western and eastern Canada and the USA.

GENERAL INTERESTS

Music, cooking, photography, visual arts, literature, poetry, astrophysics, AI, travel, hockey.

References available upon request.