

EDUCATION

Princeton University, Princeton, NJ

Graduate Student in Computer Science since September 2006

National Science Foundation Graduate Research Fellowship

Upton Fellowship in Engineering

McGill University, Montreal, QC, October 2006

Master of Arts in Music Technology

Thesis: An exploration of feature selection as an optimization tool for musical genre classification

The Ohio State University, Columbus, OH, June 2004

Majors: Computer Science and Engineering - Bachelor of Science with Honors in Engineering

Music - Bachelor of Arts with Honors in the Liberal Arts and with Distinction in Music

Minor: Women's Studies

Summa Cum Laude

RESEARCH INTERESTS

Machine learning and statistical modeling applied to music analysis, recommendation, and performance; programming languages and interfaces for computer music; multimedia data mining and information retrieval.

RESEARCH EMPLOYMENT AND ACTIVITIES

Sun Microsystems Laboratories

6/06–8/06

Burlington, Massachusetts

Intern, Search Inside the Music Project

- Participated in the development, implementation, and evaluation of a scalable, robust method for audio fingerprinting.

McGill University

1/06–4/06

Montreal, Quebec

Research Assistant, Music Perception and Cognition Lab

- Assisted in the preparation of teaching materials for an undergraduate course in music perception and cognition.

Sun Microsystems Laboratories

9/05–12/05

Burlington, Massachusetts

Intern, Search Inside the Music Project

- Designed and evaluated optimized feature extraction, feature selection, and classification techniques in the context of a digital music recommendation system.

McGill University

5/05–9/05

Montreal, Quebec

Research Assistant, Music Technology, Distributed Digital Music Archives and Libraries Lab

- Performed empirical investigation of classification techniques for music information retrieval, with a focus on feature selection algorithms and k-NN classifiers.
- Experimented with the use of ad hoc cluster computing to reduce processing time for music classification tasks.

The Ohio State University

12/03–6/04

Columbus, Ohio

Senior Distinction Project in Music: Modeling Flute Fingering Difficulty

- Investigated the application of machine learning techniques to the automatic assessment of fingering difficulty on the flute.

Ohio Supercomputer Center 6/03–9/03 Columbus, Ohio
Undergraduate Researcher, High Performance Computing

- Investigated the problems of providing user support on secure, nationally distributed networks of computing resources.
- Designed and implemented software to assist support personnel in tracking and solving problems of grid users.

OTHER EMPLOYMENT

Princeton University 9/07–12/07 Princeton, New Jersey
Assistant in Instruction, Human Computer Interface Technology, Computer Science 436

- Assist students with controller design and construction and with written work.

The Ohio State University 8/01–8/04 Columbus, Ohio
Assistant, Computer & Information Science Diversity Program

- Oversaw peer tutor programs and managed the program website and mailing lists.
- Collaborated with faculty, staff, and students on other projects to recruit and retain women and minorities in computer science.

Independent Work 2/96–8/04 Central Ohio
Piano Accompanist

- Accompanied vocalists and instrumentalists from middle school through graduate levels in studio classes, performances, and competitions.
- Coached younger students in musicianship, technique, and performance etiquette.

Ohio Supercomputer Center 8/03 Columbus, Ohio
Chaperone, Young Women's Summer Institute

- Mentored and supervised middle school girls participating in a science research camp.

Nationwide Insurance 6/00–8/00 Columbus, Ohio
Intern, Financial Systems Department

- Designed and implemented software in Java to automate error report handling.

Information Control Corporation 5/99–8/99 Westerville, Ohio
Intern

- Developed web-based applications for client projects and company intranet.

HONORS AND AWARDS

National Science Foundation Graduate Research Fellowship
Princeton University Upton Fellowship in Engineering
McGill University Max Stern in Music Fellowship
The Ohio State University Computer and Information Science Departmental Scholarship, 2003–04
Bradshaw Scholarship in Engineering, 2003–04
The Ohio State University President's Salute to Undergraduate Academic Achievement, 2003–04
Lockheed Martin Women in Engineering Award, 2002 and 2003
Raytheon Women in Engineering Award, 2001
The Ohio State University Honors Program, 1999–2004
The Ohio State University School of Engineering Dean's Award, 1999–2004
The Ohio State University Distinguished Merit Scholar, 1999–2003
Phi Kappa Phi Honor Society
Iota Iota Iota Women's Studies Honor Society
Tau Beta Pi Engineering Honor Society
National Merit Scholar

PUBLICATIONS AND PRESENTATIONS

2007

Wang, G., and R. Fiebrink. 2007. "Introduction to ChucK and livecoding" and "ChucK programming workshop." *Talk and workshop given at Electro-music 2007*, Philadelphia, PA, June 1–3.

Fiebrink, R., G. Wang, and P. R. Cook. 2007. "Don't forget the laptop: Using native input capabilities for expressive musical control." *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME)*, New York City, USA, June 6–10. (paper)

Wang, G., R. Fiebrink, and P. R. Cook. 2007. "Combining Analysis and Synthesis in the ChucK Programming Language." *Proceedings of the International Computer Music Conference (ICMC)*, Copenhagen, Denmark, August 27–31. (paper)

DeCoro, C., Z. Barutcuoglu, and R. Fiebrink. 2007. "Bayesian aggregation for hierarchical genre classification." *Proceedings of the International Conference on Music Information Retrieval (ISMIR)*, Vienna, Austria, September 23–27. (paper)

2006

Fiebrink, R., and I. Fujinaga. 2006. "Feature selection pitfalls and music classification." *Proceedings of the International Conference on Music Information Retrieval (ISMIR)*, Victoria, Canada, October 8–12. (poster)

2005

Birnbaum, D., R. Fiebrink, J. Malloch, and M. M. Wanderley. 2005. "Towards a Dimension Space for Musical Devices." *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME)*, Vancouver, Canada, May 26–28. (poster)

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 (ISMIR)*, London, September 11–15. (poster)

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 (ISMIR)*, London, September 11–15. (paper)

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 (ICMC)*, Barcelona, Spain, September 5–9. (poster)

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 (ISMIR)*, London, September 11–15. (poster)

PROFESSIONAL ACTIVITIES

Association for Computing Machinery

Member 2003–Present

Affiliations: SIGIR, SIG Multimedia

International Conference on Music Information Retrieval (ISMIR)

Reviewer, 2006–07

MUSIC ACTIVITIES

Flute

- Twelve years of private instruction, including four studying at the university level.
- Private instructors include Katherine Borst Jones, Nicole Molumby, Beth Chausse, and Beth Owen.
- Recital performed on May 30, 2003. Repertoire included *Fantaisie*, Georges Hüe; *Variations on "Nel Cor Più," Op. 4*, Theobald Boehm; *Chant de l'Oiseau qui n'existe pas*, Pierre Ancelin; *Sonate en Concert*, Jean-Michel Damase.

Piano

- Fourteen years of private instruction.
- Seven years of paid and volunteer experience as an accompanist.

Electronic and new music

- Worked with Princeton Laptop Orchestra (PLOrk) as performer and composer, 2006–present

COMPOSITIONS

“PLOrk Beat Science: An Adventure for Flute and HyPLOrkussion!” (with Ge Wang). 2006.

An electro-acoustic structured improvisation for 1 flute, 2 humans, 5 laptops, 5 pressure-sensitive finger drum pads, and 30 audio channels distributed among 5 hemispherical speakers.

“Joy of Chant” (with Ge Wang and Perry Cook). 2007.

For the Princeton Laptop Orchestra. Improvisation and chorus for joystick-controlled singing synthesis.

STUDENT AND COMMUNITY ACTIVITIES

Computer Science Graduate Committee, Princeton University

Student representative (2006–present)

Graduate Engineering Council, Princeton University

Computer Science Department representative (2007–08)

Queer Graduate Caucus, Princeton University

Vice President (2007–08)

Allies, Community group that designs and conducts workshops for Montreal students, with an emphasis on building peer support networks and combating homophobia

Workshop leader (2004–06)

Post-Graduate Students’ Society, McGill University

Councilor from the Faculty of Music (2004–05)

Alpha Omega Epsilon, Ohio State University: Social and professional engineering sorority

Chapter founding member, Treasurer (2001–03) and Webmaster (2003–04)

Association for Computing Machinery Committee on Women in Computing, Ohio State University

Chapter Webmaster (2003–04)

Fusion, Ohio State University: Social, educational, and outreach group focusing on issues confronting gay, lesbian, bisexual, and transgender students and their allies

Webmaster (1999–02) and Secretary (2001–02)

OTHER SKILLS

Proficiency in Java, C++, MATLAB, R, Perl, SQL

Experience developing applications for Linux, Solaris, Windows, and OS X, using NetBeans and Visual Studio