Rebecca Fiebrink

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EDUCATION

Princeton University, Princeton, NJ
PhD student in Computer Science since September 2006; General exam passed January 2008
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
GPA: 3.98/4.0

RESEARCH EMPLOYMENT AND ACTIVITIES

Microsoft Research 6/08–8/08 Redmond, Washington
Intern, Visualization and Interaction for Business and Entertainment (VIBE) group

- Studied the problem of supporting precise user control in the context of collaborative, multi-touch surface computing environments.
- Designed and implemented a collaborative audio editor for a large multi-touch tabletop.

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 Java 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.
- 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.

TEACHING ACTIVITIES

Princeton University 2/08–5/08, 2/09–present Princeton, New Jersey
Assistant in Instruction, Computer and Electronic Music, Computer Science 314

- Lead bi-weekly precepts on topics in computer programming, digital audio, and computer music.
- Help to plan and lead rehearsals of the Princeton Laptop Orchestra.

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

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

Princeton University 6/07–7/07 Princeton, New Jersey
Graduate Advisor, Summer Programming Experiences Program

- Advised two Princeton undergraduates on an independent multimedia programming project.

OTHER EMPLOYMENT

Smule 10/08–present Palo Alto, California
Funkadelic Programistress (actual title)

- Provide software consulting services to a startup company developing music software for the iPhone.

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.

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 to automate error report handling.

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

- Developed web applications for client projects and company intranet.

HONORS AND AWARDS

National Science Foundation Graduate Research Fellowship, 2006–present
Princeton University Upton Fellowship in Engineering, 2006–present
International Computer Music Conference, 2008 Best Presentation award (tie)

McGill University Max Stern in Music Fellowship, 2004–06
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

PUBLICATIONS AND PRESENTATIONS

2009

Fiebrink, R., D. Morris, and M. R. Morris. 2009. "Dynamic mapping of physical controls for tabletop groupware." *Proceedings of ACM CHI*, Boston, April 4–9. (paper)

2008

Fiebrink, R., G. Wang, and P. R. Cook. 2008. "Foundations for on-the-fly learning in the ChucK programming language." *Proceedings of the International Computer Music Conference (ICMC)*, Belfast, August 24–29. (paper; tied for winner of ICMC 2008 "Best Presentation" award)

Fiebrink, R., G. Wang, and P. R. Cook. 2008. "Support for MIR prototyping and real-time applications in the ChucK programming language." *Proceedings of the International Conference on Music Information Retrieval (ISMIR)*, Philadelphia, PA, September 14–18, 2008. (paper)

Wang, G., Fiebrink, R., and Cook, P. R. "Music information retrieval in ChucK: Real-time prototyping for MIR systems and performance." *Tutorial given at ISMIR 2008*, Philadelphia PA, September 14. (tutorial)

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. (talk and workshop)

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)

PATENTS

Co-inventor of pending patent on techniques for mapping physical controls for surface computing
Co-inventor of pending patent on techniques for multimedia fingerprinting

UNIVERSITY AND COMMUNITY ACTIVITIES

Princeton Laptop Orchestra, Princeton University
Performer, instructional assistant, and composer (2006–present); Assistant director (2008–09)

Computer Science Graduate Committee, Princeton University
Student representative (2006–present)

Graduate Engineering Council, Princeton University
Computer Science Department representative and Secretary (2007–present)

New York City Girls' Engineering Colloquium, day-long outreach workshop for 100 high school girls
Co-organizer (2008)

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)

PROFESSIONAL ACTIVITIES

Association for Computing Machinery (ACM)
Member 2003–Present
Affiliations: SIG Information Retrieval (IR), SIG Multimedia

ACM Human Factors in Computing Systems (SIG CHI)
Reviewer, User Interface Software and Technology (UIST) 2008
Reviewer, ACM CHI 2009 Works-in-Progress and Interactivity

International Conference on Music Information Retrieval (ISMIR)
Reviewer, 2006–07

International Computer Music Conference (ICMC)
Reviewer, 2008

New Interfaces for Musical Expression (NIME)
Reviewer, 2009

OTHER SKILLS

Proficiency in Java, C#, C++, MATLAB, R, Perl, PHP, SQL, Processing, Quartz Composer, ChucK, Max/MSP

Experience using and developing applications for Unix, Linux, Solaris, Windows, OS X, Facebook and iPhone platforms

Musician with experience in flute (16 years), piano (25 years), and electronics (5 years)