Ellen Spertus

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PROFESSIONAL SUMMARY

Computer science professor with extensive industry and open source experience seeks position where she can continue to increase access to computer science education/careers or develop socially beneficial software.

SKILLS

- Languages: C, Java, Kotlin, Python, C++, C#, Scheme, Go, JavaScript, Scala, Ruby, SQL
- Libraries and frameworks: git/GitHub, Android SDK, MapReduce/Hadoop, Unix/Linux, Eclipse, Android Studio
- Technical practices: test-driven development, unit testing, documentation, code reviews, internationalization (i18n), teamwork

RELEVANT WORK EXPERIENCE

Mills College   **1998 – Present**
Professor of Computer Science

- Created and taught courses: Programming Languages (Scheme, Haskell, Go), Mobile Application Development (Android), Production Java, Computer Architecture, Operating Systems, Java 1, Java 2, Technology for a Better World, Software Engineering, Information Retrieval Systems, Compiler Design and Implementation, and Race, Gender, and Computing.
- Designed, built, and maintained substantial open source extensions to the GNU Mailman list manager for the Anita Borg Institute for Women in Technology (2000–2004). The software is still in use in 2021.
- Led summer workshops for incoming first-generation college students and science majors.

Mozilla (through Harvey Nash)   **2019 – 2020**
Research Engineer (sabbatical appointment)

- Designed and implemented software enabling peer-to-peer communication among Android user, in conjunction with the Emerging Markets and Emerging Technologies teams.
- Implemented Firefox Voice prototype on Android, designed to be an open-source, privacy-protecting voice assistant.

Google   **2004 – 2014**
Senior Research Scientist, 2009–2014

- One of two committers for Blockly, a widely used online block-based programming environment (2013–2014). Led translation effort into over 30 languages.
- One of three people developing curriculum and software for the first Hour of Code, which reached an estimated 20 million students (2013).
- Developed tools for extracting information from Wikipedia into Metaweb knowledge graph (2012).
- Core team member of App Inventor, an online programming environment that has been used by more than 8 million people to create 34 million Android apps (2009-2011). Contributions include:
  - Designing and implementing the APIs for the Accelerometer, Ball, ImageSprite, and other components.
  - Open sourcing App Inventor with a small team by replacing dependences on proprietary Google software.
  - Leading the API documentation effort, including creating an annotation processor to extract documentation from source code and convert it into HTML.
  - Developing curriculum and tutorials.
- Performed over 100 technical interviews during my entire Google tenure.

Research Scientist, 2007–2009

- Developed and implemented social network ad placements.

Software Engineer, 2005–2007
Visiting Professor, 2004

- Contributed features to, scaled, and fixed security and synchronization bugs in the Orkut social network.
- Developed and evaluated a recommender system using collaborative filtering.
- Led data analysis for team using a variety of tools, including data cubes, Python, and spreadsheets.

Microsoft
Researcher and Summer Intern

- Developed the first software to automatically recognize insulting or abusive messages, applying natural-language processing and machine-learning techniques (1995).
- Combined novel instruction scheduling and register allocation for a highly-optimizing compiler (Summer 1993, 1994–1995).
- Performed architecture simulation and analysis (Summer 1989, 1990).
- Designed and added optimizations to production compiler for switch statement code generation (Summer 1988).

EDUCATION

Ph.D., Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA   **1998**
 Thesis: ParaSite: Mining the Structural Information on the World-Wide Web
 Committee: Lynn Andrea Stein, Ken Haase, Tom Knight, and Pattie Maes
 Minor: Science, Technology, and Society
S.M., Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA   **1992**
Thesis topic: Compiling fine-grained programs to a massively parallel computer, the MIT J-Machine
S.B., Computer Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA   **1990**
Thesis topic: Compiling dataflow programs to the MIT J-Machine

KEY PUBLICATIONS

- Chapters 3 (Mole Mash), 5 (Ladybug Chase), and 9 (Xylophone) of *App Inventor* (2011) and *App Inventor 2* (2014) by David Wolber, Hal Abelson, Ellen Spertus and Liz Looney, O'Reilly Media.
- Evaluating Similarity Measures: A Large Scale Study in the Orkut Social Network (short paper), with Mehran Sahami and Orkut Buyukkokten, Eleventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2005.
- Squeal: Structured Queries on the Web, with Lynn Andrea Stein, Ninth International World-Wide Web Conference, 2000.
- The J-Machine: A Retrospective, 25 Years of Selected Papers from the International Symposium on Computer Architecture, by William J. Dally et al., 1998.
- Smokey: Automatic Recognition of Hostile Messages, Innovative Applications of Artificial Intelligence (IAAI), 1997.
- ParaSite: Mining Structural Information on the Web, The Sixth International World Wide Web Conference, 1997.
- Why Are There So Few Female Computer Scientists? MIT Artificial Intelligence Laboratory Technical Report 1315, 1991.

GRANTS

- Principal Investigator (PI), A Relational Database Interface to the World-Wide Web, National Science Foundation Faculty Early Career Development grant ($200,000), April 1999 – December 2004.
- Co-PI, Techbridge, National Science Foundation PGE/LCP grant ($900,000), September 2000 – August 2004.

SELECT COMMUNITY ACTIVITY

- Co-founder and co-organizer, Tech Intersections: Womxn of Color in Computing (2017–present).
- Section Leader, Code in Place 2021.
- Speaker and panelist on Inclusion & Diversity in Open Source track of All Things Open (October 19, 2020).
- Volunteer software developer, Internet Archive (summer 2018).
- Advisor, Solving the Equation: The Variables for Women's Success in Engineering and Computing, American Association of University Women (2014–2015).
- Moderator/panelist at Grace Hopper Celebration of Women in Computing (2002, 2009, 2010, 2015).
- Program committee member for SIGCSE (2018–2019), CTE (2017–2019), ICWSM (2009), WWW (2009), AAAI (2008), WebKDD (2006, 2008), GHC (2000, 2004).
- Panelist at SIGCSE (1993, 2010).
- Member of board of directors of Human Rights Defense Center (2009–2012), Computer Professionals for Social Responsibility (1997–1999), and Just Detention International (1995–1997).
- Member of advisory board, Ada Initiative (2014–2015).
- Member, GRE Computer Science Committee, ETS (2008–2011).
- Keynote speaker, Computer Science & Information Technology Symposium (2006).
- Member, ACM Committee on Women in Computing (1998–2004).
- Chair, ACM-Mills Conference on Pioneering Women in Computing (2000).

FREELANCE WORK

- Wrote articles for the Overflow (Stack Overflow blog), *Odyssey: Adventures in Science* (2004), *Glamour* (2004), *Chronicle of Higher Education* (2000), and *Technology Review* (1995, 1996, 1997).
- Gave technical interviews through interviewing.io (2019, 2021).

Further information and links can be found on my CV: https://ellenspertus.com/cv.html