Emily E. Reid

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INTERESTS

I am a computer scientist, educator, and entrepreneur interested in how to use technology as a tool for increased humanity. I am passionate about:

- inclusive and ethics-focused computing education,
- diversity and inclusion in computer science, and
- technology for social impact.

I strongly believe that we can change the world for the better through a diverse and inclusive technology industry, using computer science, computational thinking, and artificial intelligence as tools to solve pressing social problems.

EXPERTISE

Technical: Specific technologies below. Computer/Enterprise Security, Machine Learning, Natural Language Processing, Software Engineering, Theoretical Computer Science.

Education: Teaching, Curriculum Development, Teacher Training & Support, Educational Strategy.

Leadership & Management: Team Management, Team Development, Organizational Strategy, Strategic Planning.

Communication: Facilitation, Public Speaking, Team Communication, Writing.

TECHNICAL SKILLS

Operating Systems: Unix/Linux, Mac OS X, Windows.

Databases: SQL, MySQL, MongoDB.

Frameworks: Wordpress, Bootstrap, SCAP (Computer Security).

Programming, Scripting, & Markup Languages: Python, R, JavaScript/jQuery, VBA, C/C++, Java, Ruby on Rails, PHP, Bash, LaTeX, HTML/CSS, XML/XSLT.

EDUCATION

Columbia University. M.S. in Computer Science (2013-2014).
Concentration: Natural Language Processing. Advisor: Michael Collins.

Boston University. Graduate Computer Science Coursework (2010-2012).
Focused on Physical Computing and Cryptography. Advisor: Anatoly Temkin.

Tufts University. B.S. in Mathematics (2005-2009).
Minor Concentration: Computer Science. Advisor: Misha Kilmer.

- Semester Abroad in Seville, Spain.

Choate Rosemary Hall. High School (2001-2005).

AI4ALL; Vice President, Open Learning (2018 - Present)
Executive leadership team member at AI4ALL, responsible for the Open Learning program, cross-program educational and organizational strategy, and New York/East Coast operations.

- Launched, built, and scaled AI4ALL Open Learning (OL) from the ground up. OL is the only free and robust set of rigorous, introductory AI courses and professional development opportunities for high school teachers as a means to bring AI education to their communities.
- Grew OL's reach to over 700 teachers and thousands of students across 48 U.S. states & territories, and several Canadian provinces.
- Developed relationships with key expansion partners, including public and charter schools, community-based service organizations, and state-level education leaders.
- Developed, hired, and managed a team of three full-time staff and several part-time staff.
- Opened and managed AI4ALL's New York office, building a strategic East Coast presence for the organization and guiding team culture towards becoming more remote-friendly.
- Organized AI4ALL's first cross-program community of practice: the Curriculum & Education team. With this team in place, AI4ALL has a more consistent educational practice and philosophy, and a clearer voice in AI education thought leadership.
- As a member of the leadership team, regularly advised on or executed key organizational decisions regarding expansion, culture, and strategy.
- With the CEO, in the process of developing the organization's 5-year strategic plan and educational achievement tracking.
- Managed AI4ALL's relationship with Google.org, met with the Google.org team regularly, and wrote biannual grant reports for OL's primary funder.
- Led strategic conversations, developed special projects, and supported closing on fundraising with key AI4ALL corporate partners.
- Spoke on behalf of the organization at industry events and closed-door industry meetings, both for fundraising and thought leadership purposes.

E.E. Reid Consulting Services, LLC; Principal (2018 - Present)
Developing inclusive, sustainable computer science education strategy and curriculum for educational institutions and programs. Delivering in-person workshops and speaking engagements on technology, diversity, and social impact.

Self-Employed; Technical/Educational Consultant (2013 - 2018)
Worked on a variety of freelance technical and educational consulting projects for small companies without large IT departments and/or without in-house CS Education expertise. The work evolved over time to become E.E. Reid Consulting Services. Projects included:

- Computer science curriculum development,
- Computer science course review,

- Computer science educational strategy,
- Computer science speaking engagements and workshop delivery,
- Machine learning & natural language processing in-house research,
- Financial predictive modeling & related app development, and
- Enterprise security assessment and strategy.

Shareable clients included: U.C. Berkeley's Center for Long-Term Cybersecurity, Sylvan Learning, and the U.S. State Department.

Girls Who Code; Director of Education (2014-2017)
First Director of Education for Girls Who Code (GWC), responsible for educational strategy, curriculum, and instruction for all GWC programs during an exponential growth period.

- Proposed, created, and managed GWC's first Education Department and the organization's first formal educational strategy and philosophy.
- Responsible for the development and scaling of culturally responsive curricula for all GWC programs (Summer Immersion Program, Clubs, Campus, and miscellaneous events).
- Responsible for the recruitment, hiring, training, and support of all teaching staff and volunteers.
- Accountable for the educational experience of over 30,000 girls and the hiring, managing, and training of over 2000 teachers and volunteers.
- Oversaw the curriculum and instruction scaling of our programs from 19 to 87 Summer Immersion Programs and about 200 to 1500 Clubs.
- From a one-person department, built and managed a team of 9 full-time staff and several part-time staff and interns.
- Regularly advised on strategic organizational decisions, as a member of the GWC Leadership Team, with the CEO and COO.
- Regularly spoke on behalf of GWC to press and at events and conferences.
- Wrote blog posts on computer science education thought leadership and the experiences of women in technology.
- Counseled and mentored students professionally and personally.
- Taught as a Summer Immersion Program Instructor in Miami at Verizon Terremark before joining full-time.
  - Responsible for preparing and delivering lesson plans, reaching curricular goals, and tracking student progress.
  - Succeeded in creating a highly collaborative and engaging environment.
- Curriculum development and teacher training for Girls Who Code included the following areas (non-exhaustive):
  - Object-oriented programming, web programming, data structures, databases, algorithms, robotics, cybersecurity, & cryptography.
  - Communication, entrepreneurship, collaboration, & leadership skills.

EdLab, Columbia University's Teachers College; R&D Associate (2014)

Supported a variety of small projects as a liaison between the software development and educational research teams.

- Developed an IPython app to collect, analyze, and visualize data on EdLab products Vialogues & New Learning Times.
- Created a workshop on computer science teaching methods.
- Wrote EdLab blog posts on teaching computer science to diverse groups.

Center for Computational Learning Systems, Columbia University; Graduate Student Researcher (2013-2014)

Performed statistical analysis on a sociolinguistic machine learning project exploring gender, hierarchical power, and situational power on the Enron dataset, with Dr. Owen Rambow and then-Ph.D. candidate Vinod Prabhakaran. See 'Research & Publications' for our 2014 EMNLP paper.

- Proposed, designed, and performed data experiments based on sociological hypotheses and my review of relevant sociolinguistic literature.
- Performed MANOVA/ANOVA statistical analysis on sociolinguistic computational learning project exploring gender, hierarchical power, and situational power on the Enron dataset.
- Wrote Python code to extract first names from noisy MongoDB data, synthesize Social Security Administration public data, and assign a gender to a first name.
- Wrote Java code to include gender in linguistic power indicator analysis in UIMA framework for machine learning experiments.

MITRE Corporation; Senior Cyber Security Engineer (2009-2013)

Researcher, engineer, and technical adviser in MITRE's Cyber Security Technical Center, then the main internal resource on all matters relating to cyber security for a company focused on systems engineering. Worked on projects at various phases in the technical lifecycle (pure research to implementation) for a diverse group of government customers.

- Developed programs in Ruby, Java, C, and SCAP framework languages for projects including performing secure code analysis, deploying security guidance, and model visualization.
- Researched cyber resiliency technologies in MITRE's research lab.
- Researched and wrote technical reports for major government customers, analyzing the security of new systems.
- Primary author for a NATO cyber information sharing system data model report.
- Presented work on cyber security information sharing at 2012 NATO CCDCOE Conference.
- Developed and presented demonstration of MITRE's SCAP technologies and cyber resiliency research for both major government customers and public audiences.

- Regularly taught workshops on Introductory XML and MITRE's SCAP technologies to groups of about 20 professionals.

Yankee Group (now 451 Research); IT & Web Intern (2007-2008)
Created new websites for company events. Updated multiple websites daily. Developed new pages and products for existing website. Performed extensive usability analysis of new websites. Supported additional internal IT operations, including aggregating and processing data in VBA for the company's Content Management System migration.

RESEARCH & ACADEMIC PUBLICATIONS & CONFERENCES

Jeff Stern, Emily Reid, and Kari Bancroft, *Teaching Introductory Computer Science for a Diverse Student Body: Girls Who Code Style*, 2015, SIGCSE (Association of Computing Machinery's Special Interest Group on Computer Science Education), Kansas City, with Jeff Stern and Kari Bancroft.
https://dl.acm.org/citation.cfm?id=2678291

Teaching Introductory Computer Science for a Diverse Student Body: Girls Who Code Style, SIGCSE (Association of Computing Machinery's Special Interest Group on Computer Science Education), 2015, Kansas City.
https://dl.acm.org/citation.cfm?id=2678291

Vinodkumar Prabhakaran, Emily E. Reid, and Owen Rambow, *Gender and Power: How Gender and Gender Environments Affect Manifestations of Power*, EMNLP (Empirical Methods for Natural Language Processing), 2014, Qatar.
http://www.aclweb.org/anthology/D14-1211

Diego Fernández Vázquez, Oscar Pastor Acosta, Christopher Spirito, Sarah Brown, and Emily Reid, *Conceptual Framework for Cyber Defense Information Sharing within Trust Relationships*, NATO CCD COE 4th International Conference on Cyber Conflict, 2012, Estonia.
http://www.ccdcoe.org/publications/2012proceedings/6_5_Vazquez%26et%20al_TrustRelationships.pdf

Gerard T. McGuire, Emily E. Reid, *The State of Security Automation Standards*, MITRE Corporation, 2011, Bedford, MA.
https://www.mitre.org/sites/default/files/pdf/11_3822.pdf

Tufts Computing University Scholars Program (2006 - 2007)
Researched the effects of matrix multiplication algorithms to effectively exploit memory hierarchy in NSF-funded program (unpublished).

INVITED TALKS, PANELS, AND WORKSHOPS

Women in STEM: An Inspirational Session with Emily Reid; 2020; U.S. State Department Embassy & WomENG Eswatini; Eswatini, Virtual.

Computer Science, Design, + Social Impact: A Recipe for Being an Agent of Change in the Digital Age; 2020; U.S. State Department & GirlUp WiSci Week; Morocco, Virtual

Code Switch: Womxn in AI; 2020; General Assembly & Trix Magazine; NYC, Virtual; with Frida Polli, Molly Fosco, Alice Xiang, Adam Oliner, and Tess Posner.

AI4ALL Open Learning & Civic Tech; 2020; Civic Hall 5-Year Celebration; New York, NY.

America.AI; 2019; Politico AI Summit; Washington, DC; with Ryan Heath, Dr. Walter Copan, Jason Matheny, and Michael Chui.

Creation and Preparation in CS Education; 2019; National Science Foundation ITEST (Innovative Technology Experiences for Students and Teachers) Principal Investigator and Evaluator Summit; Alexandria, VA.

AI Will Change the World: Who Will Change AI?; 2019; NextEra Energy Women in Engineering; Juno Beach, FL.

AI Will Change the World: Who Will Change AI? and AI Activity Workshop; 2019; Micron Foundation's Girls Going Tech Day and Girls in STEM Symposium at Boise State University; Boise, ID.

AI Will Change the World: Who Will Change AI? and AI Activity Workshop; 2019; Micron Foundation's Girls Going Tech Day and Girls in STEM Symposium at Boise State University; Boise, ID.

Special Session: AI4K12 Guidelines Initiative; 2019; Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium; Minneapolis, MN; with David Touretzky, Fred Martin, Deborah Seehorn, and Miles Berry.

A Woman Who Codes Story; 2019; Miss Porter's School: Storytelling and the Social Conscience course; Telecast to Farmington, CT.

Panel Discussion and Faculty Workshop on Ethics in AI; 2018; Sacred Heart University Faculty Institute; Fairfield, CT; with Brian Stiltner, Hugh Seaton, Lin Zhou, Kathy McGroddy-Goetz, Jerry Smith and Rupendra Paliwal.
https://bit.ly/2DJ6Vcq

A Woman Who Codes Story; 2018; U.S. State Department; Telecast to locations in Kabul, Afghanistan.

A Woman Who Codes Story, *Work Like a Computer Scientist*, *Diversity, Technology, and Social Change*, and *Intro to Computational Thinking*; 2018; U.S. Embassy in Rabat, Morocco; Multiple locations in Kenitra, Fez, and Ifrane, Morocco.

Diversity, Technology, and Social Change; 2018; Doku.Tech; Pristina, Kosovo.

A Woman Who Codes Story, *Work Like a Computer Scientist*, and *Diversity, Technology, and Social Change*; 2018; U.S. State Department; Multiple locations in Rabat and Tétauon, Morocco.

Women Transforming Tech; 2018; U.S. State Department; Telecast to North Africa and Middle East Embassy posts.
https://www.youtube.com/watch?v=b0pqs4LF6IE

The Untapped Cybersecurity Talent Pipeline; 2017; U.C. Berkeley Center for Long-Term Cybersecurity; Berkeley, CA.
https://www.youtube.com/watch?v=ifrIsVqUufE

A Computer Science Story; 2017; Blair Academy; Blairstown, NJ.
https://vimeo.com/202226185

True/False: All Kids Should Learn to Code in School; 2016; SXSW Edu; Austin, TX; with Diane Leavitt, Gordon Smith, Michael Preston, and Kevin Tang.
https://bit.ly/2ONyNyK

Women in Leadership: From the Computer Age to the Digital Age; 2016; National Archives McGowan Forum to Explore Women in Technology; Washington, DC; with Megan Smith, Telle Whitney, Gillian Jacobs, Kathy Kleiman, and Florence Tan.
https://www.archives.gov/press/press-releases/2016/nr16-51.html

Panel on Mentors and Community; 2016; WiTNY Women Impacting Tech Conference; New York, NY; with Stacey Jones, Jiaqi Liu, Monica Neff, Cindy Parcell, Christine Hales, Jean Lauer, Suma Reddy.
https://witny.splashthat.com/

Promoting Cyber Careers: Let's Start with Awareness; 2016; NICE (National Initiative for Cybersecurity Educatinon); Kansas City, MO; with Daniel Stein, Bernie Skoch, and Kevin Nolten.
https://www.fbcinc.com/e/NICE/presentations/2016/Track_A_Liberty/A-8_Stein.pdf

Digital Careers: Today and Tomorrow; 2016; NJIT Murray Center for Women in IT; Newark, NJ; with Avis Yates Rivers, Dr. Yvette Wohn, and Dr. Gale Speak.
https://www.youtube.com/watch?v=aqyrdovspLE

Computer Science Education Week Panel; 2015; Microsoft Hour of Code Event; New York, NY; with Hadi Partovi, Cathy Chou-Isaacs, and Chris Aviles.
https://bit.ly/2O9K2Vh

Creating STEM Pathways for Girls and Students of Color; 2015; Microsoft YouthSpark for Schools; New York, NY; with Nathaniel Granor, Dr. Brandy Parker, Dr. Mary Pearl, and Tiffanie Stanard.
https://bit.ly/23XkuYm

Panel Discussion on Women in Tech; 2015; GAINS: Girls Advancing in STEM Conference; Cambridge, MA.
http://www.choate.edu/cf_news/view.cfm?newsid=1557

Women in Tech Solving Big-X Problems; 2015; NJIT Murray Center for Women in IT; Newark, NJ; with Chandri Barat, Dr. Nicole Bryan, Jinishi Patel, and Jeanette Duffy.
https://www.youtube.com/watch?v=wbefDLqMMjg

Panel Discussion on Teaching Girls to Code; 2015; Silicon Cape Unconference; Telecast to Cape Town, South Africa; with Emma Dicks, Philipine Francke, and Lynnette Hundermark.
<https://www.siliconcape.com/events/silicon-cape-women-in-technology-unconference/>

Code Like a Girl: Engaging Young Women in Computer Science; 2014; i.d. Lab Play Faire at Choate Rosemary Hall; Wallingford, CT.
<https://www.youtube.com/watch?v=G8rlEFt0qk8>

ORGANIZATIONAL
TALKS

Girls Who Code Summer Immersion Program All-San Francisco Field Trip; 2016; Twitter; San Francisco, CA; with Reshma Saujani and Jack Dorsey.
<https://www.pscp.tv/GirlsWhoCode/1BdGYVjejdXJX>

Girls Who Code Summer Immersion Program All-New York Field Trip; 2015; Microsoft; New York, NY; with Reshma Saujani, Susan Lyne, Myna Markham, Minerva Tancoco, and Donna Woodall.
<https://bit.ly/2Dvb7hv>