

MARCELA S. MELARA

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EDUCATION

Princeton University, Princeton, NJ
Doctor of Philosophy, Computer Science Projected May 2019
Advisors: Edward W. Felten, Michael J. Freedman

Master of Science in Engineering, Computer Science May 2014
Thesis: "CONIKS: Preserving Secure Communication with Untrusted Identity Providers"
Advisors: Edward W. Felten, Michael J. Freedman

Hobart and William Smith Colleges (HWS), Geneva, NY
Bachelor of Science, summa cum laude, Computer Science May 2012
Honors Thesis: "ELARA: Environmental Liaison and Automated Recycling Assistant", Advisor: John Vaughn.
Second Major in French and Francophone Studies. Minor in Physics.

RESEARCH INTERESTS

Computer Security, Operating Systems, Network Systems.

RESEARCH EXPERIENCE

Assistant in Research Summer 2013, September 2015–present
Princeton University

- Lead project on designing a new sandboxing system to prevent data leaks from IoT devices.
- Lead research team that designed CONIKS, a practical key management system for end users that provides transparency and privacy.

Summer Research Student Summer 2010, Summer 2011
Hobart and William Smith Colleges

- Summer 2011: Designed a prototype software application for a networked recycling kiosk.
- Summer 2010: Implemented an educational processor with support for peripherals and an educational operating system using an FPGA.

PROFESSIONAL EXPERIENCE

OS Security Engineering Intern, CoreOS Team June 2015–September 2015
Apple Inc.

- Evaluated how to deploy CONIKS as part of a large-scale system.

OS Security Engineering Intern, CoreOS Team June 2014–September 2014
Apple Inc.

- Improved sandboxing technology in core operating system.

Race Committee Technical Intern November 2010–April 2011
Seneca7

- Designed and built a web-based program to track the runners of the Seneca7 running relay race in real-time.
- Managed and supported the tracking program on race day.

TEACHING EXPERIENCE

Assistant in Instruction

Princeton University

- COS 461: Computer Networks Spring 2014
Instructor: Prof. Michael Freedman
- COS 318: Operating Systems Fall 2013
Instructors: Prof. Kai Li, Dr. Andrew Bavier

Teaching Fellow

Hobart and William Smith Colleges, Dept. of Physics

Fall 2011–Spring 2012

- Held walk-in evening office hours for students taking Physics courses of any level.

Evening Teaching Assistant

Hobart and William Smith Colleges, Dept. of Mathematics and Computer Science

Fall 2010–Spring 2011

- Held walk-in evening office hours for students taking introductory Computer Science courses.

Teaching Assistant

Hobart and William Smith Colleges, Dept. of Mathematics and Computer Science

- CPSC 124: Introduction to Programming Spring 2012
Instructor: Prof. Carol Critchlow
- CPSC 124: Introduction to Programming Fall 2011
Instructor: Prof. David Eck
- MATH 131: Calculus II Fall 2009
Instructor: Prof. Kevin Mitchell

Undergraduate Students Mentored

- Huy Quoc Vu, Google Summer of Code Summer 2016
Project: "CONIKS for Tor Messenger". Co-Mentor: Arlo Breault (The Tor Project)
- Michael Rochlin, Princeton University Spring 2015
Junior Independent Work: "Coniks 2.0: Publicly Verifiable Keystore with Key Changing and Verifying Capabilities". Advisor: Ed Felten

PUBLICATIONS AND PRESENTATIONS

Marcela S. Melara, Aaron Blankstein, Joseph Bonneau, Edward W. Felten, Michael J. Freedman. "CONIKS: Bringing Key Transparency to End Users". *USENIX Security Symposium*, August 2015.

Christian Eubank, **Marcela Melara**, Diego Perez Botero, Arvind Narayanan. "Shining the Floodlights on Mobile Web Tracking – A Privacy Survey". *IEEE Symposium on Security and Privacy Workshops, Web 2.0 Security and Privacy*, May 2013.

Marcela Melara. "Using FPGAs to Create a Complete Computer System for the Classroom". *Presentation at New York Celebration of Women in Computer Science*, April 2011.

Marc L. Corliss, **Marcela Melara**. "Vireos: an Integrated, Bottom-Up Educational Operating Systems Project with FPGA support". *ACM Technical Symposium on Computer Science Education*, March 2011.

GRADUATE HONORS

Siebel Scholars Class of 2014

July 2013

Princeton University President's Fellowship

Fall 2012–Spring 2013

Student Travel Grants to SOSP 2013 and USENIX Security 2015

UNDERGRADUATE HONORS

Phi Beta Kappa	May 2012
Honors in Computer Science	April 2012
Dept. of Mathematics and Computer Science John S. Klein Prize	April 2012
Roderic '52 and Patricia '53 Ross Endowed Centennial Scholarship	Fall 2011–Spring 2012
Hai Timiai Women's Senior Honors Society	April 2011
Dept. of Mathematics and Computer Science William Ross Proctor Prize	April 2010
Phi Beta Kappa Book Award	April 2010
First Year Academic Achievement Award	April 2009
Dean's List	Fall 2008–Spring 2012

SERVICE AND EXTRACURRICULAR ACTIVITIES

Computer Science Graduate Council	Spring 2016–present
Princeton School of Engineering and Applied Sciences Recruiter, Grace Hopper Conference	October 2015
Siebel Scholars Regional Lead	Fall 2014–present
Princeton Women in Computer Science	Fall 2013–present
Graduate Women in Science and Engineering	Fall 2012–present
Women's Black Belt competitor, Princeton Taekwondo Team	Fall 2012–Spring 2014
HWS The Pitch Entrepreneurial Contest Finalist	February 2012
HWS Dept. of Physics Faculty Hiring Committee	Spring 2012
HWS Dept. of French and Francophone Studies Faculty Hiring Committee	Spring 2012
Association for Computing Machinery	June 2010–present
Games4Girls Computer Game Design Competition, Honorable Mention	April 2010

RELEVANT SKILLS

Programming Languages:

- Proficient: Java, C, Python
- Familiar: Go, C#, PHP, JavaScript, MySQL, Verilog

Operating Systems: Ubuntu Linux, OS X, iOS, Windows

Relevant Graduate Courses: Information Security, Advanced Computer Networks, Privacy Technologies, Advanced Computer Systems, Analytics and Systems of Big Data, Surveillance and Countermeasures

Natural Languages: English (native), Spanish (native), German (native proficiency), French (conversational)