

# Paul Ellenbogen

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## Education

- 2014 – present **Ph.D. Computer science - Security/Privacy**, *Princeton University*, Princeton.  
Advisor: Arvind Narayanan
- 2009 – 2013 **BS Computer Science**, *University of Washington*, Seattle.
- 2009 – 2013 **BA Mathematics**, *University of Washington*, Seattle.

## Experience

- 2014 – present **Graduate Student**, *Computer Science / Security*, CITP, Princeton University.
- Current project: Investigate genetic privacy and the identifiability of DNA. Simulate dozens of generations for millions of people, in Python. Generate genomes for these individuals, and apply machine learning techniques to find closely related individuals.
  - Previous project: Analyze ~2GB worth of data on the Namecoin block chain in Python in order to understand domain name squatting in the Namecoin system (Kalodner et al. [2015]).
- Summer 2017 **Software engineering intern**, *WebRTC Team*, Mozilla.
- Transition Firefox's SDP parser from C/C++ to Rust.
  - Learned to use "unsafe" parts of Rust.
- Summer 2016 **Software engineering intern**, *WebRTC Team*, Mozilla.
- Work with other IETF committee members to draft specification of Privacy Enhanced RTP Conferencing (PERC).
  - Develop in browser Key Distributor as specified in PERC standard.
- Autumn 2015 **Teaching Assistant**.
- Teaching assistant for information security course (COS 432).
- Help students understand basics of cryptography and information security.
  - Grade programming assignments written in Java.
- 2013–2014 **Software engineer / Research Assistant**, University of Washington.
- Worked with a small team of developers on FreeDOM, a Javascript framework for developing highly portable cloud applications. We also developed uProxy (uproxy.org), in collaboration with Google Ideas, an anti-censorship tool that uses FreeDOM.
- Responsibilities:
- Design and refactor internal APIs so that they can be implemented on multiple platforms.
  - Write code for FreeDOM and uProxy to port functionality to Firefox from Chrome.
- 2011–2013 **Undergraduate Research Assistant**, *Noble Lab*, Genome Sciences, University of Washington.
- Responsibilities:
- Maintain, extend, and support Segway and Segtools data analysis tools written in Python.
  - Perform data analysis and figure creation for ENCODE paper using R and Python. (Hoffman et al. [2013]).
  - Write bash scripts to automate routine data analysis tasks.

## Other Experience

2013 Wrote backend Python code to post process images uploaded by users for hackathon project. Our project, [picolap.se](http://picolap.se), took second place at Pacific Northwest Hackathon, run by Facebook.

## Technical Skills

Languages Python, Java, Javascript, Bash  
Frameworks / packages numpy, scikit-learn, matplotlib  
Browser Firefox & Chrome extension development experience.

## Publications

Raymond Cheng, Will Scott, Paul Ellenbogen, Jon Howell, Franziska Roesner, and Thomas Anderson. Radiatus: a shared-nothing server-side web architecture. *ACM SOCC*, 2016. doi: 0.1145/2987550.2987571.

Michael M Hoffman, Jason Ernst, Steven P Wilder, Anshul Kundaje, Robert S Harris, Max Libbrecht, Belinda Giardine, Paul M Ellenbogen, Jeffrey A Bilmes, Ewan Birney, et al. Integrative annotation of chromatin elements from encode data. *Nucleic acids research*, 41(2):827–841, 2013. doi: 10.1093/nar/gks1284.

Harry Kalodner, Miles Carlsten, Paul Ellenbogen, Joseph Bonneau, and Arvind Narayanan. An empirical study of namecoin and lessons for decentralized namespace design. WEIS, 2015.