Andy Gu

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EDUCATION

University of Southern California, Los Angeles, CA *Graduates May 2018*
Bachelor of Science in Computer Science and Computer Engineering
GPA: 4.0
Courses: Linear Algebra and Linear Differential Equations, Data Structures and Object Oriented Programming, Discrete Methods in Computer Science, Introduction to Embedded Systems
Complete by December 2015: Introduction to Photography, Introduction to Algorithms and the Theory of Computing, Principles of Software Development, Principles and Practices of Global Innovation

SKILLS AND EXPERIENCE

Programming Languages: C, C++, Java, Python, SQL, LaTeX Hardware Design: Arduino Uno
Other Front-end Technologies: HTML, CSS, Javascript, JQuery

Los Alamos National Lab, Cyber Futures Lab, Los Alamos, NM, Research Intern *May 2015-August 2015*

- Manipulated DNS and netflow logs to create metrics for determining privacy risk in database queries.
- Wrote a SQL privacy "optimizer" for automating the suggestion of better, privacy-preserving database queries given user queries in data-sharing applications.
- Presented results to Department of Homeland Security, Colorado State University, and USC representatives; currently writing paper with mentor on discoveries.
- Working as a research intern under Dr. Boris Gelfand and the RetroFuture project

University of Southern California, Introduction to Programming Course, Course Producer *August 2015-Present*

- Selected as a course producer based on academic and course performance in first semester courses. Held office hours and lab sections for introductory students and facilitated course grading.

Analysis of Network Traffic Lab, Information Sciences Institute, Marina Del Rey, CA, Research Intern *September 2014-Present*

- Wrote Python scripts to automatically generate maps of Internet outages using the Matplotlib library given data from edge network probing. Tools currently used by security researchers to map results from Internet outage probes.
- Designed interactive Javascript websites mapping outage geolocations over multiple 24-hour time periods and parsing probe results.
- Converted Perl scripts parsing flat stream databases containing /24 blocks of the Internet to Python.
- Worked as a research intern under Dr. John Heidemann while keeping a log of weekly progress.

PROJECTS

Probe Plotter

- Created a tool taking flat stream databases in network data and converted into visual stripcharts denoting network uptimes, statuses across months of activity. Sample code on github.com/4ndygu/Probe_Plotting. Sample output on 4ndygu.github.io
- Learned data visualization technologies in Python and Matplotlib to create dynamic visualizations of network traffic. Currently used by researchers at the Information Sciences Institute to map /24 blocks of the Internet and track outages.

My(o) Cookbook, 2015 LAHacks

- Wrote a dynamic recipe website using the Myo Javascript API to detect stirring and chopping gestures to progress through a digital cookbook for users.
- Independently learned the Javascript interface / myo.js library to track basic cooking gestures. Won best Myo hack.

ORGANIZATIONS / VOLUNTEER

9Dots, Student Volunteer – October 2014 – March 2015

- Spent four hours a week at an after-school program for math, science, and technology tutoring in underfunded school systems.
- Helped 1st through 8th grade students develop skills in algebra, geometry, and basic algorithmic design strategies.

Asian Pacific American Student Services, Teaching Assistant – August 2015 – Present

- Spent four hours a week facilitating discussions about race, class, and sexuality issues in the Asian-Pacific community.
- Prepared literary materials and planned discussions over Asian Pacific issues and their relation with technology and culture.

HONORS/ACCOMPLISHMENTS

- IBM Watson Memorial Scholarship Recipient, Presidential Scholarship Recipient, USC Gregory Scholarship Recipient – 2014-2015
- W.V.T Rusch Engineering Honors Program Member, USC Viterbi School of Engineering, Deans List – 2014-2015