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
Bachelor of Arts in Narrative Studies
GPA: 4.0
Courses: Linear Algebra / Linear Differential Equations, Data Structures and Object Oriented Programming, Discrete Methods, Introduction to Algorithms, Principles of Software Development
Complete by May 2016: Introduction to Computer Networks, Probability and Statistics for Engineers

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, and USC representatives; currently writing paper with mentor on discoveries and creating network data sharing tools.
- Working as a research intern under Dr. Boris Gelfand and the RetroFuture project

University of Southern California, Introduction to Programming Course, Teaching Assistant — *August 2015-Present*

- Selected as a teaching assistant based on academic and course performance in first year courses.
- Eased multiple student classes to computer science by holding office hours, running lab sections, and providing general guidance for learning basic programming concepts.

September 2014-Present

Analysis of Network Traffic Lab, Information Sciences Institute, Marina Del Rey, CA, Research Intern

- 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 websites for parsing lab Internet probes and mapping outage geolocations over weekly periods. Map will be released on lab website for public access.
- 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, 2015 Information Sciences Institute – Student Researcher

- Created a tool visualizing terabytes of flat stream databases of network data in 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 – Team Developer

- Wrote a dynamic recipe website using the Myo Javascript API to guide users through digital cookbooks.
- Independently learned the Javascript interface / myo.js library to track basic cooking gestures. Won best Myo hack.

ORGANIZATIONS / VOLUNTEER

Joint Educational Project, Student Participant – September 2015 – Present

- Spent three hours / week at an elementary school program teaching first graders programmatic thinking and computer usage.
- Helped 25 first graders better appreciate computers in everyday life by devising lesson plans, making videos, and creating activities.

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