

Brian Greenberg

SOFTWARE ENGINEER

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Work Experience

San Diego Super Computer Center

San Diego, CA

APPLICATION PROGRAMMER

July, 2018 - Nov. 2018

- Created a **Python Flask** based web application for a fleet of internet monitoring tools that greatly simplifies keeping track of issues and getting information on them.
- Converted the barebones codebase from a previous Django attempt to **Flask** while adding login, comments, search, editing of info, and problem reporting functionality
- Learned and used **SQLAlchemy** for the login system and **SQLite** for monitoring tool info.

University of California, San Diego

San Diego, CA

APPLICATION PROGRAMMER

June, 2017 - June, 2018

- Continued research project from previous summer.
- Added more firewall rules matching functionality.
- Made secure, **RSA** based, signature checking functionality to rules list to prevent tampering, which is then output as a json based config file.
- Implemented **Python** plugin functionality for custom firewall rule matching.

University of California, San Diego

San Diego, CA

UNDERGRADUATE RESEARCH ASSISTANT

June, 2016 - September, 2016

- Worked on research with a Professor to create a **Python** based network firewall application that using a commodity network switch, is able to have the performance of a dedicated firewall appliance.
- Used an **OpenFlow** based framework called **Ryu** to talk to the switch and implement rules for when to accept traffic.
- Made the configuration files for traffic rules easy to understand from someone who has setup firewalls on **Linux** before

Education

B.S. in Computer Science

San Diego, CA

UNIVERSITY OF CALIFORNIA, SAN DIEGO

2014 - 2017

- **Relevant Coursework**— Software Engineering, Compilers, Operating Systems, Networking, Algorithms, Data structures, Programming Language Theory

Projects

Virtual Machine GPU Passthrough

- Using **KVM**, **QEMU**, and **Libvirt**, made a windows virtual machine on **Linux** that has full 3D graphics acceleration.
- Used huge pages to increase VM cache performance.
- Added kernel flags so VM guest graphics card is ignored by Linux for display purposes and the normal display drivers aren't loaded in.

Fun Stuff

- 2016 Board Member of Eve Computer Security Club at UCSD
- Fixed remote door lock for Eve Security during SDHacks 2016 by devising an ssh based entry system to open door.