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

University of California, San Diego

San Diego, CA

Undergraduate Research Volunteer

June. 2015 - September. 2015

- Setup new display wall for Professor's research, made a small CentOS based compute cluster to power the displays.
- Packaged display wall software so it could be setup/reinstalled easily.
- Wrote instructions for how to deploy display wall software onto another cluster.

Skills

Programming Java,C/C++,Python,Ocaml,Bash Scripting

Environments Linux,Windows

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

System Admin

- Using **KVM**, **QEMU**, and **Libvirt**, made a Windows virtual machine running on a **Linux** system that has full 3D graphics acceleration.
- Used huge pages to increase VM cache performance and isolated guest graphics using kernel flags

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.