Dillon Lareau

Enthusiastic software engineer with experience in a wide range of settings from full stack web development, to large scale real time programs, to complex embedded systems. Passionate about interesting projects, team collaboration, and making a better workplace.

CONTACT

📞 203-822-8199

✉ JDLareau1@gmail.com

🖥 www.DLareau.com

github.com/dlareau

📍 Pittsburgh, PA

EDUCATION

Carnegie Mellon University

M.S. in Electrical and Computer Engineering - 05/2017

> Specialized in Embedded Systems, Computer Security, and Digital Design

B.S. in Electrical and Computer Engineering - 05/2016

> Minor in Computer Science

SKILLS

Programming Languages:
Python, C, C++, Javascript, Bash, C#, Rust, PHP, SQL, Java

Technologies:
Docker (inc. compose & swarm), Django, Git, Mercurial, Linux, Ansible, Autoconf, AutoCAD

Skill Areas:
System Administration, Web Applications, CI/CD, Automated Testing, Embedded Systems, FPGAs, Computer Security

Hobbies:
Circuit fabrication, Machining, Puzzlehunts, Ham Radio

PUBLICATIONS

Large-Scale Indicator Caches Built using Analysis Pipeline and the Elastic Stack
FloCon 2020

Design of Small Trusted Hardware for Space Applications
AIAA Space Forum 2018

Citation and Affiliation Networks in Academia
CMU Graduate Network Forum 2017

WORK EXPERIENCE

Software Engineering Institute - CERT Division - Software Engineer
(June 2017 - Present)
- Lead Developer for Analysis Pipeline, a real-time streaming analysis tool for large-scale network data written in C. Worked directly with customers on new features.
- Designed and implemented an indicator cache system to decrease lookup time of network indicators using our tools and the Elastic stack. Presented at FloCon 2020.
- Develop and maintain multiple production tools that comprise the NetSA Security Suite, tools made to monitor extremely large scale networks. (C and Python)
- Proposed and wrote a collection of tools and scripts to improve testing capabilities.
- Analyzed existing satellite hardware for software and hardware vulnerabilities. Published a paper about future recommendations and presented at AIAA Space 2018.

Intel Corporation - SSD System Test Engineer
(Summer 2015)
- Responsible for proving viability of Intel's new high end SSD product line
- Wrote a series of tests in C++ to find bugs in drive functionality on the system level
- Identified and assisted in the repair of major software and hardware issues
- Solutions I developed are part of multiple product lines launched in 2016

iTownStore - Software Engineer
(June 2013 - August 2016)
- Developed new customer management system using PHP, MySQL, and Javascript
- Responsible for adding website functionality and integrating point of sale systems
- Created and maintained computer network and other critical company infrastructure

Carnegie Mellon University - Teaching Assistant
(Spring 2013 - August 2017 - 7 Semesters)
- Asked by professor to TA 18-240 - Structure & Design of Digital Systems - Head TA
- Led team of teaching assistants to organize and run lab projects for the course
- Worked extensively with Verilog to simulate hardware designs and program FPGAs
- Wrote improved automatic grading script for digital homework

PROJECTS / OTHER ACTIVITIES

Puzzlehunt Server - Sole developer - github.com/dlareau/puzzlehunt_server
- Actively developed large web application for running puzzlehunts, written in Python using Django, Postgres, and Redis. Supports thousands of concurrent users.
- Developed simple docker-compose setup instructions, CI/CD including automated testing, over 30 pages of documentation, and user simulation load testing scripts.
- Used as the base application by over a dozen other institutions for their hunts
- Sys-admin for PuzzlehuntCMU's instance, handling deployment and live bug fixes.

The Society for Internet Blaseball Research - Servorcerer, Council Member, Treasurer
- System administrator for multiple servers running over 30 community projects
- Created system to allow community members to easily run and manage projects regardless of previous technical skill using Docker, Traefik, Portainer and Watchtower.
- Member of leadership council for 4,500 person queer-friendly tech-focused discord.
- Created multiple web applications to allow easier community access to data.

Scribe: Embedded capstone project to create a simple, LIDAR based, place anywhere device to detect large scale writing/drawing without the need for any additional hardware

CAReography: Built and programmed a semi-autonomous miniature car controllable via the web. Control software written in C. Won Intel Top Hack at PennApps hackathon.

Plaid Parliament of Pwning (PPP): Member of CMU student computer hacking team. Participated in computer security "CTF" competitions in which PPP placed first globally.

Custom Operating System: Co-wrote a unix-like kernel that implements virtual memory management, process scheduling, threading, and locking and synchronization primitives.