Benjamin W. Graham

Carnegie Mellon Electrical and Computer Engineering
Class of 2022

Experience

2019 - present
Founder
Beneficium LLC
- Developing an AOT compiler and runtime environment for Python to improve its speed and memory usage.

2020
Software Engineering Intern
RedHat
- Updated the Cockpit Session Recording module to provide a web interface for the tlog application. The interface was moved to the React library for PatterFly 4, and continuous integration was added to the repository using Docker.
- Implemented backup-and-restore functionality for the authentication application FreeOTP on Android.

2019
Undergraduate Research Assistant
Cylab Security and Privacy Institute
- Built a visualization tool to detect and monitor the distribution of malicious software in a partnership with Northrup Grumman.
- Implemented an augmented reality haptic system for first responders for the NIST haptic challenge. The entry received first place in the NIST Haptic Interface for Public Safety Challenge.
- Developed a web application to graphically model the behavior of artificial intelligence algorithms.

2018
CERT Security Automation Intern
Software Engineering Institute
- Used Python and Angular for web application development for simplified SiLK internet traffic analysis.

2015 - 2017
Software Intern
Carnegie Mellon Robotics Institute
- Wrote software using Swift and Metal for displaying interactive 3D data on mobile devices under the supervision of Professor Simon Lucey.
- Wrote Python and Matlab code for use in a 3D image camera calibration system under the supervision of Professor Fernando De la Torre.
- Designed, 3D printed, and assembled a robot under the supervision of Professor Alonzo Kelly.

Projects

2020 - present
C Compiler
- Developing a C compiler for CMU's Compiler Design course, written in Ocaml.

2020 - present
X Window Manager
- Made a functional tiling window manager for the X Window System.

2019
Com-Unity Web Application
- Created a inter-dorm request application for SteelHacks using Node.js.
- Won Snapchat prize for best social media integration.

2018
PyDoom Video Game
- Developed a 90's style first person video game inspired by the likes of Doom and Quake.
- Won first prize overall at the 15-112 Project Showcase.

2017
Kathode Android Game
- Released a rhythm-based video game on the Google Play Store.
- Developed using Java and Android Studio.

Education

2018 - present
Carnegie Mellon University
- Student in Electrical and Computer Engineering.
- Relevant courses include *Compiler Design - Distributed Systems - Parallel and Sequential Data Structures and Algorithms - Introduction to Computer Security - Software Engineering for Startups - Introduction to Computer Systems - Structure and Design of Digital Systems - Functional Programming -*

About

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LinkedIn
linkedin.com/in/benwilliamgraham

Github
github.com/benwilliamgraham

Interests
Coding - Mechanical Keyboards - 3d-Printing - Semiprime Factorization

Awards

- RedHat "Achievement of Awesome"
- First place in the NIST Haptic Interface for Public Safety Challenge
- Snapchat Prize for Social Media Integration at SteelHacks
- 15-122 Project Showcase winner
- First prize at Hack112
- Duquesne Award for Computer Science at PJAS

Skills

Languages
C
C++
Python
Ocaml
Javascript
Java
x86 Assembly

Libraries and Frameworks
React
Node.js
OpenGL
OpenCV
Unreal Engine
Angular

Platforms
Linux
Windows
Android
IOS
Raspberry Pi
Arduino
HTC Vive

Software
Git
Android Studio
Fusion 360