

Skills

Tools and Software: JavaScript (ES10), Bash, Golang, Python3, TypeScript, React/Redux, Git, HTML5, Linux, OpenCV, AWS/GCP, Lisp, Arduino, Mongo, Postgres, Redis, Webpack, \LaTeX

Experience

- Software Engineer, *lantern.io* Oct 2018 — Nov 2020
- Created a staging test environment to profile proxies under simulated high load from many simultaneous client connections, and debugged a number of critical performance bugs that were causing proxy crashes
 - Wrote build scripts for cross platform Linux packaging of the core proxy application
 - Audited and overhauled UI accessibility, migrated codebase to TypeScript, implemented frontend of a p2p file sharing product, modernized legacy react code, and oversaw an entire UI redesign
 - Implemented the backend and frontend of a user facing notification system and an issue reporting endpoint
- Coding Retreat, *Recurse Center* July 2018 — Sept 2018
- Wrote scripts to compile Opencv-Python with FFMPEG support from binaries in Centos 7
 - Implemented a steganographic encoder and decoder in Go
- Software Development and Project Management Intern, *Enventure Enterprises* May 2017 — Jan 2018
- Engineered and deployed a production ready progressive web app used by company management
 - Product managed a team of six in the design and production of an open source data collection app
- Research Assistant, *Nanomaterials & Imaging Lab, College of William & Mary* Jan 2015 — Jan 2018
- Researched novel applications of surfactant adsorption on graphene using Atomic Force Microscopy

Projects

- Ray Tracer, *github.com/bcmertz/ray-tracer* July 2020 — August 2020
- Implemented a ray tracer that is capable of rendering shapes, colors, shadows, and lights in Go
- Concurrent Downloader, *github.com/bcmertz/sanic* Oct 2018 — Jan 2019
- Leveraged Go concurrency to create an open source remote file / torrent downloader, with optional built in rate limiting to aid in downloading large video files from the internet
- Search Within Video, *www.searchwithinvideo.com* March 2017 — May 2017
- Built a platform allowing users to upload videos and process them with machine learning and computer vision to make the videos searchable for objects, text, and scenery
 - Engineered a microservice architecture to preprocess video data in order to optimize for scalability and speed

Education

- College of William and Mary, *Williamsburg, VA* May 2018
- B.S. Computational Physics — James Monroe Scholar