

## Skills

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Tools and Software: JavaScript(ES7), Golang, TypeScript, Python3, Bash, Java/Android, AWS/GCP, Elisp, React/Redux, Linux, Postgres, Redis, Webpack, Arduino, HTML5, and of course L<sup>A</sup>T<sub>E</sub>X

Areas of Expertise: Fullstack dev, a11y, build systems / tooling

## Experience

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- Software Engineer, *lantern.io* Oct 2018 - present
- 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
  - 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 Mangement 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

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- 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

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- College of William and Mary, *Williamsburg, VA* May 2018
- B.S. Computational Physics - 3.92 GPA, James Monroe Scholar