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BRENNEN GREEN

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EDUCATION

Lexington, KY **University of Kentucky** **Aug. 2019 – May 2023**

- **Major:** Computer Engineering, B.S. (GPA: 4.0) *Minor: Math*
- **Coursework:** Object Oriented Programming in C++ and Java, Intro to Software Engineering, Computational Engineering, Systems Programming, Linear Algebra, Digital Logic Design

EMPLOYMENT

Software Engineer **University of Kentucky** **May 2019 – July 2020**

Department of Communication (comm.uky.edu)

- Improved faculty data comprehension by creating a data visualization web app in PHP, JavaScript and SQL
- Automated job search process by using Python to parse new applicants, saving 2 hours daily
- Integrated Docker into applications department wide while co-leading a project to revitalize department dev ops
- Integrated new code review and management system using version control and GitLab
- Leveraged Knowledge of MVC Architecture, Web Debugging, Docker, Dev Ops, GitLab

Biomedical Imaging Lab Assistant **University of Kentucky** **Mar. 2020 – Present**

- Assisted with optimization of imaging device that allows real-time view of patient blood flow / hemodynamics
- Improved computation time of imaging device by 300% using CUDA GPU acceleration
- Developed a LSTM recurrent neural network in Pytorch that mapped cerebral blood flow to intercranial pressure
- Leveraged Knowledge of System Design, MATLAB, CUDA, Graphics Pipeline, Machine Learning, C#

EXTRA-CURRICULAR

UK Solar Car Team – Electrical AND Programming Team Member **Aug 2019 – Present**

- Improved reliability of steering wheel by designing detachable throttle/brake daughter boards using Eagle PCB
- Contributed to the development of the real time operating system which managed sensor data processing

Bioinformatics Research Assistant **Aug 2018 – Dec. 2018**

- Reduced dependency on legacy-based platforms by integrating Linux Fedora 28 into the lab infrastructure
- Spearheaded the development of a python implementation of the open source software "BioFabric"
- Used Python to analyze sample genome datasets and visualize them using BioFabric

PERSONAL SOFTWARE PROJECTS

Mandelbrot Fractals in OpenGL: https://www.brennengreen.dev/blog/posts/1/

- Created interactive visualizations of the Mandelbrot Set fractal in the core profile of OpenGL
- Used OpenGL Shading Language (GLSL) to create efficient and aesthetically pleasing shaders
- Used C++ to create an interactive program that allowed the user to explore the fractal in real time
- Utilized: C++, GLSL, OpenGL, Shader Development, Graphics Pipeline

GoList (Craigslist Web Scraper in Go): https://github.com/brennengreen/golist

- Implemented a web scraper that scrapes posting data from a craigslist category
- Used Golang's PostgreSQL implementation to categorize all postings in a SQL database
- Maintained an active server for utilizing the web scraper and database using Heroku
- Used Twilio to notify me whenever an item is posted for less than the average price of similar items
- Utilized: Algorithms, SQL / PostgreSQL, Databases, Heroku, Twilio, Go / GoLang, and Web Scraping

Ditto (Discord Media Bot Written in Python): https://github.com/ditto-dev-team/ditto

- Used Python to design the backend to safely access the bot's file structure and store/access media files
- Used Heroku to properly sense when the bot is in use as to save time and money when hosting the bot
- Administrated the version control over the bot to promote proper and safe collaboration amongst the team
- Utilized: UNIX File System, Python, Heroku, Git Version Control, Project Management

SKILLS

- **Technical:** CUDA, Graphics Pipeline, OpenGL, GLSL, C / C++, Shaders, Machine Learning, Neural Networks, Pytorch, C#, Eagle PCB, MATLAB, JavaScript, Python, PHP, Linux, MacOS, Go / GoLang, HTML / CSS, Git, Java, Data Visualization, Databases, Web Design
- **Academic:** Matrix Algebra, Linear Algebra, Calculus 1-3, Discrete Mathematics