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BRENNEN GREEN

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EDUCATION

Lexington, KY **University of Kentucky** **Expected: May 2023**

- **Major:** Computer Science, Mathematics B.S. (GPA: 3.9)
- **Key Courses:** Linear Algebra, Probability, Calculus 1-4, Systems Programming, Physics I, Programming in C, Frontiers in Artificial Intelligence, Algorithms and Data Structures, Statistics**,** Numerical Methods
- **Key Skills:** C, C++, Python, CUDA, Databases, Go, Graphics Programming, OpenGL, Artificial Intelligence and Machine Learning, JavaScript, Optimization, Imaging, Parallel Programming, Automation, Unity Game Engine

EMPLOYMENT

Engineering Intern **Twitch Interactive / Amazon** **June 2021 – Aug. 2021**

- Coming summer 2021!

Integration Engineering Co-op **Intel Corporation** **Oct. 2020 – May 2021**

- Wrote automated test simulations for the Simics platform in C and Python
- Debugged and validated various processor firmware configurations simulated via FPGA
- Used knowledge of computer architecture and systems programming to analyze the processor designs

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

- Improved faculty data comprehension by creating a data visualization web app in PHP, JavaScript, and SQL
- Automated faculty 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 DevOps
- Integrated new code review automation and management system using version control and GitLab

EXTRA-CURRICULAR

Embedded Systems Team **UK Solar Car Team** **Aug 2019 – Present**

- Helped with development of the embedded systems within the car such as RTOS, sensors, and microprocessors
- Contributed to the development of the real-time operating system and telemetry networking
- Helped maintain large scale SVN version control for the team on Linux

Smart Manufacturing Research Assistant **University of Kentucky** **Jan. 2020 – May 2020**

- Developed a convolutional neural network for part prognosis in additive manufacturing in Pytorch
- Wrote custom classes to handle large datasets with labelling and annotation for easy analysis
- Used CUDA acceleration to create fast and efficient models and datasets

Biomedical Imaging Research Assistant **University of Kentucky** **Mar. 2020 – Oct. 2020**

- Assisted with optimization of imaging device that renders real-time model of patient blood flow / hemodynamics
- Optimized computation time of imaging device by over 300% using CUDA GPU acceleration in MATLAB
- Developed a LSTM recurrent neural network in Pytorch that mapped cerebral blood flow to intercranial pressure

PERSONAL PROJECTS

3D Signed Distance Raymarching in Unity:

- Used High-Level Shading Language (HLSL) to create signed distance field shaders
- Created a robust and efficient graphics pipeline using Unity's Shader Framework and C#

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 C++ to create an interactive program that allowed the user to explore the fractal in real time
- Created aesthetic shader using OpenGL Shading Language (GLSL)

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

- Implemented a web scraper that scrapes posting data from a craigslist category
- Used Go's PostgreSQL implementation to categorize all postings in a SQL database
- Maintained an active server for utilizing the web scraper and database using Heroku