JACK J. HAEK

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Summary

Computer Science student who has strived to gain project-based experience varying from high level software applications to low level firmware. Skills such as leadership and time management developed and displayed through inclusion in the MSOE Honors Program.

Education

BS in Computer Science from the Milwaukee School of Engineering   Class of 2024
Fred Loock Scholarship recipient
University Scholars Honors Program participant

Projects

3D Printer & CNC Machine   Aug. 2022 - Present
Worked with a team to design and prototype a device that combines the functionality of a 3D printer and CNC machine. More information is available upon request.

Ray Trace Image with CUDA   2022 Academic Year
GPU rendering technique that uses real life ray tracing physics to simulate the environment from an imager. Traces rays from an imager out to a reflective source to produce an image for the user. Used a super compute cluster to produce results.

AI Self-Driving Simulation using Unity   Aug 2020 – Present
3-D environment to simulate self-driving cars and be able to train a neural network to navigate the course. Current progress includes learning how to implement ray tracing into an environment, how to capture data for a neural net, and learning how to handle control inputs.

Microprocessor compliant with ARM v4 using VHDL   Feb. 2019 – May 2019
Required the creation of a 32-bit wide microprocessor demonstrating compliance with all ARM v4 instructions including all common branch instructions.

Image Editor Using Java   2018 Academic Year
Required a basic GUI and the ability to load and save common image files such as .jpg as well as custom files. Performed functions such as greyscale, hue change, blur, and sharpen.

Skills

- Python
- Numpy, Pandas
- C++, C#, Java
- JavaScript, TypeScript
- ARM
- CUDA
- VHDL
- Angular

Activities and Honors

IEEE Poster Competition Winner: 3D Printer & CNC Machine	2022
American Family Senior Design Scholar Mentor	2022
MSOE SEED Grant Recipient	2022
MSOE Varsity Basketball Assistant Coach	2021 – 2022
Extracurricular Research Group: Digital Signal Processing using AI	2020 – 2021
NASA Lunabotics Competition Team	2019 – 2021
Northern Athletic Collegiate Conference Scholar-Athlete Award	2019 – 2021
MSOE Varsity Basketball	2018 – 2021

Work

- GEOST – Enterprise Software Engineer Intern
  March 2023 – September 2023
- RTM Engineering – Software Engineering Intern
  Summer 2021
- WE Energies STEM Center - Teacher
  2020 – 2021
- Direct Supply – Software Engineering Intern
  Spring 2021