Zachary J. Heathcock

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EDUCATION

Bachelor of Science in Engineering
University of Memphis, Memphis, TN
Major: Computer Engineering
Graduation date: May 2025 GPA 3.72
Awards: Honors College, Tau Beta Pi, IEEE-HKN

RELEVANT COURSEWORK

Computer Organization and Architecture, Discrete Structures, Operating Systems, Mechatronics, Intro to AI, Intro to Neural Networks, Professional Development, Software Engineering.

COMPUTER SKILLS

Languages: Python, VHDL, JavaScript, MATLAB, VBA, Bash, HTML
Operating Environment: Windows 10/11, Ubuntu
Business Tools: Office 365, LTSpice/PSpice, Excel
Other: PyTorch, Keras, TensorFlow, WinSCP, PuTTY

PROJECTS

Relay Kit Design (peak+)

- Developed extensive documentation for a relay kit designed to solve a need of the company.
- Utilized the engineering process to test and assemble the relay kits to fit the specifications provided by the teams' lead engineer.
- Analyzed the timings of each relay kit and adjusted until each resembled a complete 2 seconds of the 4 second signal.

Object Recognition Through CNN (Intro to Neural Networks)

- Utilized **Tensorflow, Pytorch,** and **Keras** to create a convolutional neural network capable of identifying ImageNet images.
- Expanded on **Yolo5v** to identify images in real-world applications, such as blood-cell identification and pneumonia detection.

Intelligent Bi-Directional Energy Controller for Renewable Energy

- Collaborated with a team of fellow students to research, design, and procure a solution with the intention of optimizing energy flow between renewable sources and battery storage systems.
- Maintained strict time schedules to ensure the completion of the project.
- Utilized particle swarm optimization techniques to solve the needs of an intelligent controller

EXPERIENCE

Engineering Intern, June 2024 – Current
Peak+, Memphis, TN

- Utilized Microsoft **VBA** and **Excel** to automate tasks resulting in a 20% increase in productivity in certain circumstances.
- Identified errors in existing **VBA** and **Excel** through extensive debugging and created new and alternative solutions to replace the previous systems.
- Collaborated with sales representatives to Engineer ideal systems given the constraints of the provided sites.
- Indexed site performance to identify issues as well as showcase performance based on requests from customers.

HONORS

Cecil C. Humphreys Presidential Scholarship Recipient, 2021 - Current
Sun-Trust Bank Scholarship Recipient, 2021
Tau Beta Pi, University of Memphis Chapter, 2024 - Current