

Matthew Kukucka

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Education

University of Michigan

Bachelor of Science in Computer Engineering | Minor in Physics | GPA: 4.0/4.0

Ann Arbor, MI

Expected April 2024

- *Relevant Coursework:* VLSI Design*, Embedded System Design*, Computer Organization, Digital Integrated Circuits, Data Structures & Algorithms, Signals & Systems, Logic Design [*Current]

CEA Study Abroad

University of Michigan: International Programs in Engineering

Prague, Czech Republic

May 2022 - June 2022

Work Experience

University of Michigan Science Learning Center

Study Group Facilitator

Ann Arbor, MI

July 2022 - Present

- Developed agendas and preparatory materials for weekly peer-based recitations in physics for up to 12 people.
- Employed collaborative learning techniques and activities that fostered group discussion, encouraging members to teach and learn from each other.

LSA Technology Services

Engineering & Electrical Technician

Ann Arbor, MI

May 2021 – August 2022

- Overhauled the audio-visual systems across the University of Michigan's campus to virtually integrate classrooms and auditoriums for hybrid-model learning.
- Assembled and installed electrical equipment per project requirements, operated bench tools to modify components, and hand-soldered wire connections.

Project Experience

Pipelined Datapath Simulator

EECS 370: Introduction to Computer Organization

- Developed a cycle-accurate behavioral simulator in C for a pipelined implementation of the LC-2K ISA.
- Incorporated explicit data forwarding and branch prediction methods to prevent data hazards during execution.

Dual-Mode Ripple Carry Adder

EECS 312: Introduction to Digital Integrated Circuits

- Designed and simulated 8-bit ripple carry adder that supports addition and accumulation operands with Cadence.
- Implemented an 18-transistor CMOS transmission gate full adder cell, effectively reducing the delay and power consumption by 21% and 81% respectively compared to a conventional full adder.

Leadership Experience

Tau Beta Pi, Engineering Honor Society

MindSET Chair

January 2023 – Present

Chapter Development Officer

May 2022 – December 2022

- Directed the DEI committee and facilitated bi-weekly meetings to compile, filter, and execute improvement ideas.

Publicity Officer

January 2022 - May 2022

- Managed the organization's social media and devised advertisements to promote external outreach events.

Prestigious Active Member

September 2021 - Present

- Dedicated over 32 hours of community service per semester in the greater Ann Arbor region.

Additional Skills

- Software: C/C++, Verilog, Python, MATLAB/Simulink, SolidWorks, Cadence Virtuoso, HSPICE, LTspice
- Hardware/Other: Soldering, Oscilloscope, Git, Microsoft Office