Jacob N Pickos

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Research and Career Interests: *Embedded Systems, Computer Architecture, Operating Systems, Edge AI*

Education

University of Michigan — **Ann Arbor, MI**

Computer Engineering BSE, 3.65 GPA — *August, 2024 - May, 2027*

- **Selected Coursework:** Embedded System Design, Digital Logic Design, Computer Organization, Electronic Circuits, Web Systems, Data Structures and Algorithms, Discrete Mathematics, Principles of Optics, Intro to Nuclear Engineering
- **Awards:** Michigan Engineering Continuing Student Scholarship

Nashville State Community College — **Nashville, TN**

Computer Science AS, Economics AA, 4.00 GPA — *January, 2022 - May, 2024*

- **Selected Coursework:** Calc-based Physics I & II, General Chemistry I & II, Calculus I - III, Linear Algebra, Computer Science I & II, Statistics
- **Awards:** Benjamin A. Gilman International Scholarship, Mathematics Academic Achievement Award, Physics Galileo Award, Academic Service Scholarship, S.O.A.R. Student Leadership Distinction

Research Experience

Incoming at Oak Ridge National Laboratory — **Oak Ridge, TN**

Summer Research Intern — *May 2026 - July 2026*

- Extracting insights from unstructured DOE power grid reports using local LLMs with Ollama and Codex.

University of Tennessee — NSF REU program — **Knoxville, TN**

Summer Research Intern — *May 2024 - August 2024*

- Trained a Deep Q-Network from scratch and implemented it into a reinforcement learning agent.
- Developed autonomous vehicle simulations in SUMO to imitate traffic patterns in the presence of emergency vehicles.
- Coded rule-based vehicle movements in MATLAB to control the SUMO simulations.
- Created and presented a research poster titled "Making Way: Using Vehicle-Vehicle Communication and A.I. to Clear a Path for an Ambulance through Heavy Traffic."

Fisk University — NSF CREST (BioSS) program — **Nashville, TN**

Summer Research Intern — *June 2023 - August 2023*

- Applied crystallography to further research on superoxide dismutase, a protein found in S. aureus.
- Cultured E. coli for protein expression, ran nickel columns for protein purification, and tested protein purity using gel electrophoresis. Grew protein crystals via the vapor diffusion method.
- Processed data from .pdb files for use in PyMOL molecular modeling software to visualize protein structures.
- Created scientific presentations and shared findings before a panel of university faculty.

Project Experience

Multidisciplinary Design Program (MDP) — Walbridge — *Jan 2026 - Present*

- Built a multi-agent verification pipeline between Microsoft Copilot Studio, Power Automate, SharePoint and Excel to judge the quality and grounding of LLM responses after RAG on company data.
- Led an 8-person undergraduate team in an engineering Design Review before a panel of industry professionals.

Michigan Aeronautical Science Association — Apogee Detection Project Lead — *Sept 2024 - Sept 2025*

- Created `baro_sim`, a Python library with a C++ back end which gives users access to realistic barometers in software, for use in rocket flight simulations.
- Wrote high-quality C++ code for simulating a multi-stage apogee detection system, integrating data from barometric and IMU sensors.
- Operated within a large team-based firmware repository on GitHub, applying best-practice version control.
- Led a Preliminary Design Review for the apogee detection system, inviting contributions from multiple engineers across our team.

EECS Class Highlights

- EECS 373 - Engineered major aspects of a fully functional vending machine, including a PS/2 magstripe reader (via GPIO interrupts), stepper motors (via PWM), and circuits that delivered power to 12 individual components.

- EECS 485 - Built a full-stack web application with a JavaScript client-side frontend, Flask REST API backend, SQLite database, and authenticated user sessions, deployed on AWS EC2.
- EECS 370 - Programmed a complete ISA toolchain in C: assembler, linker, ISA simulator, cache simulator, and a multi-pipelined processor with hazard detection and forwarding.
- EECS 270 - Applied RTL design principles to implement a sequential four-function calculator on an FPGA that responds to button presses and displays output on an LED HEX display.
- EECS 215 - Integrated deep understanding of electrical circuits with engineering aptitude to build, analyze, and debug complex filters and amplifier circuits in lab.

Technical Skills

Languages: C++, C, MATLAB, Verilog, Assembly (ARMv8 subset), Python, HTML, LaTeX
Developer Tools: VS Code, Git, Unix shell, Flask, React, REST APIs, STM32CubeIDE
Technologies: LTspice, ModelSim, MATLAB's Deep Learning Toolbox, SUMO

Work Experience

Nashville State Community College **Nashville, TN**
Academic Tutor *Oct 2022 - April 2023*

- Assisted students in C++ programming, mathematics (general math through Calc II), and writing.

Uber/Lyft **Nashville, TN**
Rideshare Driver *Oct 2020 - Jan 2024*

- Logged over 2,000 rides in the Nashville area while maintaining a perfect 5-star rating across both Uber and Lyft.

Two Men and a Truck **Nashville, TN**
Crew Leader/Driver *May 2020 - Oct 2020*

- Led crews of professional movers on local and cross-country moves.
- Operated commercial vehicles over state lines while complying with DOT regulations.

L&L Marketplace LLC **Nashville, TN**
Property Maintenance Tech/Forklift Operator *June 2019 - May 2020*

- Aided in the construction and ongoing maintenance of L&L Marketplace: a new retail outlet in Nashville.

Activities and Interests

Music Album *Released August 2021*

- Wrote, recorded, co-produced, self-funded, and released a 9-track album of original music.
- Collaborated with ten creatives over six months to complete this project mid-pandemic.
- Became intimately familiar with the music production "order of operations," which takes a song from an idea to a collection of recordings and finally to a finished commercial product.

Athletics *Ongoing*

- Bouldering - Working toward lifetime goal of climbing 10 V10 boulders.
- Running - Recently completed a sub 2-hour half-marathon.

Study Abroad *Summer 2023*

- Studied Japanese Fiction while living in Tokyo, Japan during the summer of 2023.