

PETER KIM

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EDUCATION

Wayne State University

Honors Bachelor of Science in Electrical and Computer Engineering

Minor in Computer Science and Mathematics

Relevant Coursework: Digital Logic Design, Computer Architecture & Organization, Discrete Mathematics, MATLAB

Graduation: December 2026

Detroit, MI

GPA: 4.00/4.00

EXPERIENCE

Engineering Capstone Project | [GitHub](#) | Arduino, 3D Printing, Computer Vision

September 2024 – May 2024

Designer, Engineer, Programmer

Canton, MI

- Developed an automated snowplow model capable of navigating a 3ft x 3ft area by programming and wiring an Arduino and designing a 3D-printed chassis.
- Achieved a data transmission speed of 6 MB/s via MQTT over Wi-Fi, a **2457%** increase from 250 KB/s using an NRF module.
- Detected April Tags with an **85%** detection rate during optimal runs using a Raspberry Pi and camera.

Plymouth District Library

August 2023 – August 2024

Internship

Plymouth, MI

- Managed lab equipment, including 3D printers, while assisting patrons with software such as Fusion 360.
- Developed a Problem Bank website, leveraging **JavaScript** and **HTML/CSS**, which streamlined the process for users to access and solve programming problems, resulting in improved user engagement and satisfaction.
- Contributed to the successful execution of library programs for the lab, enhancing community engagement.

PROJECTS

Hand Gesture Race Car Game | [GitHub](#) | PixiJS, Google MediaPipe, Express.js | Hack Dearborn 3

October 2024

- Developed a top-down race car video web game that utilizes a webcam and hand gestures for control, significantly reducing the need for expensive racing wheels and other peripherals.
- Implemented hand gesture recognition using Google MediaPipe, achieving an accuracy of over **90%** for real-time hand detection and gesture recognition.

Decimal to IEEE 754 Converter | [GitHub](#) | Flask, Unicorn, Heroku

September 2024

- Developed a **Flask** web app that converts decimal numbers into IEEE 754 floating-point format with up to **256-bit** precision allowing high precision calculations and resulted improved accuracy for large computations beyond the typical 64-bit format.
- Implemented user authentication and a clean UI for an enhanced user experience, allowing users to save and manage their conversion history seamlessly.

3D Math Rendering Software | [GitHub](#) | C++, SFML

April 2024

- Developed a 3D rendering software for math functions capable of plotting **9 billion points** simultaneously using the SFML library.
- Implemented a dynamic camera in the software from linear transformations to enhance visual representation and user interaction.

Missile Pathfinding Simulation | [GitHub](#) | C++, SFML

March 2024

- Developed a missile pathfinding simulation that successfully intercepts moving targets **88%** of the time across **100 trials** with various obstacles, utilizing a combination of ray marching and pursuit curve algorithms.
- Developed a hit detection system with **O(nh)** time complexity using the Jarvis March method due to simplicity.

ORGANIZATIONS

Wayne State Robotics

October 2024 - Present

Society of Computer Developers - Computer Science Club at Wayne State University

September 2024 - Present

Institute of Electrical and Electronics Engineers - ECE Club at Wayne State University

September 2024 - Present

Filipino Society at Wayne State University

September 2024 - Present

Irvin D. Reid Honors College at Wayne State University

August 2024 – Present

SKILLS & ASSETS

Languages: C++, Python, JavaScript, Java, HTML5/CSS3, MATLAB

Software/Hardware: ROS2, Node.js, Express.js, Git/GitHub, Xcode, React, Flask, Arduino, 3D Printing