

PETER KIM

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SKILLS & ASSETS

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

Software/Hardware: Git/GitHub, Xcode, React, Flask, Node.js, Express.js, Autodesk Inventor & Fusion

EDUCATION

Wayne State University

Bachelor of Science in Electrical and Computer Engineering

Minor in Computer Science and Mathematics

GPA: 4.00/4.00

Relevant Coursework: Discrete Mathematics, Differential Equations and Matrix Algebra, MATLAB

Graduation: December 2026

Detroit, MI

Washtenaw Community College

Dual Enrollment

Relevant Coursework: Calculus III, Linear Algebra, Differential Equations, Introduction to Programming with C++

August 2023 – May 2024

Washtenaw County, MI

Object Features of C++, Data Structures with C++

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 using Arduino and a 3D-printed chassis as a part of a team of four
- 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

Hand Gesture Race Car Game | [GitHub](#) | PixiJS, Google MediaPipe, Express.js, Node.js, Heroku | 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, as part of a team of four
- Implemented hand gesture recognition using Google MediaPipe, achieving an accuracy of over **90%** for real-time hand detection and gesture recognition

PERSONAL PROJECTS

Tic Tac Toe | [GitHub](#) | React, Express.js, Node.js, Heroku

October 2024

- Developed a dynamic Tic Tac Toe web game using **React**, featuring real-time gameplay and an interactive user interface.

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

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

WORK EXPERIENCE

Plymouth District Library

August 2023 – August 2024

Intern

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

Math-Corps UM Dearborn

July 2023 – August 2023

Volunteer

Dearborn, MI

- **Assisted** middle and high school students in enhancing their mathematics skills to improve their understanding and confidence

ORGANIZATIONS / ACCOLADES

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

AP Scholar with Distinction Award

July 2023 & July 2024

National Honors Society

September 2022 - September 2023