JIN WOOK SHIN

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EDUCATION

University of Michigan - Ann Arbor **Ann Arbor, MI**
B.S.E. Computer Engineering *August 2023 – Expected April 2026*

- GPA: **4.0**
- Relevant Course Highlights:
  - F23: **Discrete Math** (EECS 203), **Programming & Data Structures** (EECS 280), **Robotics Mechanisms** (ROB 103)
  - W24: **Computer Organization** (EECS 370), **Data Structures & Algorithms** (EECS 281), **Linear Algebra** (ROB 101)
  - F24: **Electronic Circuit** (EECS 215), **Logic Design** (EECS 270), **Machine Learning** (EECS 445)
  - W25 (expected): **Signals & Systems** (EECS 216), **Embedded System Design** (EECS 373), **Computer Vision** (EECS 442)

EXTRACURRICULAR ACTIVITIES

Solar Car **Ann Arbor, MI**
Strategy Division, Member *August 2023 – March 2024*

- Designed and developed a race simulation program to analyze and optimize vehicle energy consumption and racing speed, and implemented advanced algorithms to calculate optimal racing strategies
- Worked on a Machine Learning Optimizer project by developing a Reinforcement Learning algorithm to simulate and produce the most efficient speed incorporated with environmental and kinematic factors for sectors of the race

WolverBot Kickers **Ann Arbor, MI**
Strategy Team, Member *August 2023 – Present*

- Conducted small-scale projects on Raspberry Pi and ROS to acquire practical skills in robotics development
- Implemented a complex A* pathfinding algorithm for a team of soccer robot agents to be used in 2025 RoboCup

PROFESSIONAL EXPERIENCE

Qeexo **San Jose, CA**
Intern *Summer 2022*

- Created a machine learning demonstration of the industrial application of Qeexo's AutoML software
- Published an instructional blog on utilizing AutoML for classifying a motor's state and detecting issues
- Currently designing a commercial humanoid robot in cooperation with a manufacturing company

RESEARCH & PROJECTS

LC2K CPU *June 2024*

- Implemented the LC2K CPU in Verilog (LC2K: a simple ISA designed by the EECS 370 team at the UofM)
- Synthesized the code to run a simple program on the Tang Nano 20K FPGA board
- **https://github.com/jinw06k/lc2k-cpu**

Bark Detector *June 2024 - Present*

- Trained a machine learning model using TensorFlow to detect dog barks in the presence of house noises
- Deployed TFlite model on Arduino 33 BLE Sense to build a device that "shushes" the dog when barking
- https://github.com/jinw06k/bark-detector

Pseudo CD Player *July 2024 - Present*

- Built a device that plays the corresponding CD album on Spotify when the RFID tag of the CD is scanned
- Developed a supplementary code to automatically authorize and refresh tokens to use Spotify API
- https://github.com/jinw06k/Pseudo_CD_Player_SP

"Optimizing the Signal Traffic Time via Simulations and Learning Approaches" *August 2022 – January 2023*

- Conducted in-depth research on traffic signal optimization to maximize traffic flow and minimize wait time
- Programmed and simulated traffic intersections using agent-based modeling techniques in NetLogo
- Designed and implemented a supervised machine learning program to calculate the optimal stop signal pattern

ADDITIONAL ACTIVITIES

- **USA Coding Olympiad, Platinum Division** *April 2022*
- **Coding Club, Seoul International School, President** *August 2022 – May 2023*
- **Korean International Student Association, Vice President** *August 2023 – Present*

SKILLS

Languages: C/C++, Java, Python, Verilog, HTML, CSS, Javascript, NetLogo
Skills/Framework: ML (TensorFlow, PyTorch, Keras, TinyML), OpenCV, YOLO, Flask, ROS2