Junseo Lee

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EDUCATION

University of Michigan - College of Engineering **Ann Arbor, MI**
B.S.E. Electrical Engineering Expected June 2029
GPA: 4.00/4.00, University Honors, Dean's List
Coursework: Differential Equations, Discrete Math, Computers and Programming, Linear Algebra, General Physics II, Multivariable and Vector Calculus, Food Science and Engineering, Probabilistic Methods in Engineering, Mind and Machines
Awards: William J. Branstrom Freshman Prize

RELEVANT WORK EXPERIENCE

University of Michigan Battery Lab **Ann Arbor, MI**
Undergraduate Research Assistant May 2024 – October 2024

- Developed deep learning model predicting EIS characteristics online using voltage data at low sampling rates, fitting equivalent circuit models to model-generated EIS for degradation diagnostics and second-life evaluation under various cell conditions
- Conducted in-depth analysis of lithium-ion battery degradation by examining effects of pressure, temperature, and SoC windows–acknowledged in "Degradation and expansion of lithium-ion batteries with silicon/graphite anodes"
- Facilitated battery chamber operations for GM and Arbin cells, managing cell placement, removal, and optimizing fixtures with inductive sensing and Python calibration for precision, recording cell expansion data and reassembling fixtures for experiments

Engineering 100 Food Science and Engineering **Ann Arbor, MI**
Pet Treat Innovation, Process, and Packaging Design October 2023 – December 2023

- Conducted comprehensive market research and competitive analysis for 30+ companies in pet industries about package design, health benefits, cost, flavor, sensory experience, nutritional impact, and pricing to propose General Mills' target demographic
- Invented cat treat Health Bites with formulated recipe and packaging design to aid dental, digestive, and dermal health with nutritional constraints by conducting 15+ experiments, varying ratios of each ingredient to provide broad health benefits
- Proposed mass production of Health Bites through process flow diagram, nutritional and cost analysis, compiling results into formal report and poster to General Mills Client, UofM leadership team, and students at Poster Expo for further development

Lexington Catholic High School **Lexington, KY**
Autonomous Object Recognition and Retrieval System Design January 2022 – May 2022

- Built autonomous robot equipped with vision, distance, and bumper sensors with motor and V5 robot brain that locates thrown object, tracks its movement, retrieves it, and autonomously returns it to user in less than 2 minutes by using C++ and VEXcode
- Programmed diagonal search algorithm that efficiently locates randomly placed object by automatically adjusting robot's movement angles and trajectory until detecting and retrieving object with enhanced precision for repetitive tasks
- Implemented optimization of robot's movement by calculating minimal motor revolutions for left or right turns as well as 360-degree rotation, allowing efficient search and retrieval of objects while minimizing unnecessary movement and time

ADDITIONAL WORK EXPERIENCE

United Nations Command Joint Security Area **Panmunjom, South Korea**
Sergeant, Intelligence Analyst · Security Manager October 2024 – April 2026

- Executed quarterly intelligence reports and threat assessments on KPA activities for ROK I Corps, coordinating O&I briefings with USFK and disseminating intelligence to UNC Commander to support allied situational awareness and decision-making
- Directed monthly security inspections for 600-person JSA battalion and annual corps-level inspections, overseeing personnel and cyber security and deploying electronic clearance tracking, improving corps audit rating from "Excellent" to "Outstanding."

ACTIVITIES

SPARK Electric Racing **Ann Arbor, MI**
Low Voltage Systems Subteam Technician January 2024 – May 2024

- Devised new fuse box that consolidates power-carrying wires and redesigned arrangement of low voltage elements, resulting in convenient access during maintenance, enhanced wire protection, and protection of critical system components
- Coordinated assembly of wires to create main harness and several sub harnesses for electric bike by routing and securing wires, while streamlining voltage diagnosis process for entire system, ensuring optimal maintainability, bike performance, and safety
- Collaborated with other members to integrate sensors and electronics, building framework for interconnection of components

SKILLS, CERTIFICATIONS, AND INTERESTS

Computer: C++, MATLAB, Python, CATIA, NX, Fusion 360, Onshape, Excel, Word
Certification: Algorithms for Battery Management Systems - University of Colorado
Languages: Korean (native), English (native), Latin (intermediate), Mandarin (beginner), Spanish (beginner)
Fabrication: Michigan Embedded Systems' Hub Soldering, Wilson Center Basic Workshop Safety Training I, II
Volunteer Experience: played piano for individuals living with dementia through Music For Dementia