

Ethan Ku

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EDUCATION

University of Michigan, Ann Arbor

Graduation: May 2027

B.S.E. Electrical Engineering, Minor in Computer Science

GPA: 3.7/4.0

Coursework: Analog Circuits, Digital Integrated Circuits, Signals & Systems, Logic Design, Data Structs. & Algor.

Languages (including class experience): C/C++, Verilog, MATLAB, ROS2, HTML/CSS

Developer Tools: Altium Designer, LTspice, Simulink, STM32, SLAM, Git, VS Code, Linux, CATIA, NX, Office 365

Libraries: HAL, RTAB-Map, OpenCV, NumPy, Matplotlib

TECHNICAL EXPERIENCE

UM Solar Car Racing Team

August 2024 – Present

Microsystems Engineer

Altium, Siemens NX

- Led project for **4** Supermodule PCBs to unify **7** battery modules of 8-12 cells each in 4S2P hybrid configuration, eliminating bus bars from previous design for safety and allowing **100%** functionality of high voltage battery
- Increased limited travel storage for race team by **50%** by designing Brake Light PCB with solder jumper to manage multiple brake light systems with one board, complete with MCU, MOSFETs, CAN control, regulator, oscillator

Atombots Research Group - Z Lab

January 2025 – Present

Research Assistant

Altium, ROS2, SLAM

- Led design of PDB on mobile robot chassis by reviewing and implementing past practices and new component requirements, ensuring power needs for **4** new components, and verifying criteria for continued V1 components
- Integrating **2** new sensors on robot chassis for real-time localized navigation via SLAM, communicating with ROS2
- Implemented Notion with team of 5-10 by reviewing old Google Drive inefficiencies and matching identified team needs with modern management software for **85%** increased information access and task deployment efficiency

Revolution Chinese Yoyo

August 2024 – Present

Phototech Electrical Engineer, Creative Chair

Solder, Heat shrink, Adobe Creative Suite

- Redesigned **5** glow suits by rerouting and soldering new, thicker electrical lighting wires to replace old, faulty wires for **50%** increased consistency during intensive dance routines during Yotonix 2025 show for an audience of 300+
- Leads **100%** of creative efforts, including quarterly recap videos using Adobe Premiere Pro, performance audio selection and mixing and cutting using Adobe Audition, and directing annual glowsuit design team of 5-6 members

PUBLICATIONS

D. T. Islam, E. Telli, N. Telli, H. Fatteh, I. Ma, **E. Ku**, S. Kotaru, W. Hanim, P. Hatzinger, B. Upham, M. Williams, G. Zylstra, D. Fennell, A. Cupples, S. Hashsham. (2023). “**Targeted Sequencing Panel to Characterize the Respiration of Polychlorinated Dibenzo-p-dioxins and Dibenzofurans by Dehalococcoides mccartyi Strains**”. *Annual Superfund Research Project Meeting, Albuquerque, New Mexico, 2023*

PROJECTS

Rescue Robot | C++, Controls Design, Arduino

August 2024 – December 2024

- Developed autonomous thermal-sensing robot with team of 4 that navigated obstacles and sensed simulated human thermal signature, achieving **100%** autonomous movement corrections and **100%** thermal sensing accuracy
- Consolidated **2** sonar sensors input to multiplexer for navigation guidance and thermopile sensor to detect target

Hovercraft | C++, Arduino, CATIA

August 2024 – December 2024

- Developed **2** full-scale remote controlled hovercraft with team of 5, capable of delivering payloads up to **100g**
- Led integration of MOSFET connections to battery, directional servo firmware, and LEDs per nautical regulations

LEADERSHIP EXPERIENCE

AACCOM Chinese School

August 2022 – Present

Chinese Yoyo Teacher

- Teaches weekly Chinese Yoyo classes for up to **10** students and choreographs annual Lunar New Year performances
- Increased outreach performances by **50%**, volunteering for neighborhood performances for cultural visibility

ADDITIONAL

Extracurriculars: UM Solar Car Racing Team, Revolution Chinese Yoyo, Taiwanese-American Student Association

Spoken Languages: English (Fluent), Mandarin (Fluent)