

ETHAN ANDREW ZHANG

1005 Eton St, West Lafayette, IN, 47906 | ethan.a.zhang@gmail.com | [linkedin.com/in/ethan-a-zhang/](https://www.linkedin.com/in/ethan-a-zhang/)

EDUCATION

Columbia University, Fu Foundation School of Engineering and Applied Science

2026 – 2030

C. P. Davis Scholar

New York, NY

- Matriculating Fall 2026

Purdue University

2023 – 2026

Non-Degree Student | GPA: 4.0/4.0

West Lafayette, IN

- Coursework: C Programming (CS159), Multivariate Calculus (MA261)

West Lafayette Jr/Sr High School

2022 – 2026

GPA: 4.0/4.0

West Lafayette, IN

- AP Coursework: Computer Science A, Statistics, Calculus BC, Physics C (Mechanics & E&M)

ACHIEVEMENTS

Selected Honors: National Merit Finalist (2026); FIRST Dean's List Semifinalist (2025); Naval Horizons Essay Contest Winner (2023–2025); FRC World Championship Qualifier (3×), 2023 Galileo Division Winner; USACO Silver.

EXPERIENCE

Research Intern | Full-time, 50+ hrs./week

06/2025 – 08/2025

Computer Systems Lab @ Yale, Yale University

New Haven, CT

- Built a Python RAG agent for medical report generation.
- Led semantic PDF parsing and preprocessing for structured extraction.
- Developed user-facing tools for interacting with generated outputs.

Research Assistant | Part-time, paid

11/2023 – 05/2024

Creative, Compliant, & Collaborative Robotics Lab (C3RL), Purdue University

West Lafayette, IN

- Designed and fabricated a variable-stiffness soft robotic finger (CAD, FEM, TPU), achieving ~60° bending at 15 PSI.
- Iterated through simulation and experimental validation for rehabilitation applications.
- Accepted by Journal of Purdue Undergraduate Research (Spring 2026); presented at 3 symposia and a state science fair.

High School Intern | Part-time

06/2023 – 11/2023

Kihara Bioinformatics Laboratory, Purdue University

West Lafayette, IN

- Applied Python to explore ML methods for bioinformatics; participated in weekly technical discussions.

Summer Intern | Full-time, paid

06/2024

Semiconductors READI Program, Purdue University / Ivy Tech / West Lafayette, IN READI

West Lafayette, IN

- Completed team projects in semiconductor manufacturing and microelectronics.

PROJECTS

Autonomous 6-DOF Robotic Arm | ESP32 | Raspberry Pi | C/C++ | Python | Unity | YOLO

- Built a 6-DOF robotic arm with ESP32 firmware, FK/IK, collision detection, and Cartesian motion planning.
- Built a Unity digital twin and integrated Raspberry Pi + YOLO for vision-guided manipulation.

3D-Printed Quadcopter Drone | CAD | FEA | PID Control | 3D Printing | Raspberry Pi | YOLO

- Designed a PETG airframe with TPU grippers; integrated object detection and PID control for autonomous payload handling.
- Optimized gripper design using FEA.

LEADERSHIP

AI Club: Co-founder & President | **FIRST Robotics Competition (FRC Team 461):** Treasurer; Strategy Lead; Technical Lead |

Science Olympiad: Co-President | **BioSTEM Club:** President | **Hack Club:** Executive Board

SELECTED RESEARCH PRESENTATIONS

Purdue Undergraduate Research Symposium (3×): [Presentation 1](#) | [Presentation 2](#) | [Presentation 3](#)

Indiana Junior Science & Humanities Symposium (2×)

TECHNICAL SKILLS

Languages: Python, C/C++, Java, C#

AI/ML: RAG, YOLO object detection

Simulation & Modeling: FEA (CalculiX), CFD (OpenFOAM), PID control

Engineering Tools: Onshape, FreeCAD, Unity

Hardware: ESP32, Raspberry Pi, I2C, computer vision, motion planning, 3D printing