Elaine Liu

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EDUCATION

Massachusetts Institute of Technology | Cambridge, MA   **August 2022 - May 2026**
- Candidate for Bachelor's in Electrical Engineering and Computer Science, Minor in Philosophy, GPA: 4.5/5.0
- Clubs and Activities: Sloan Business Club DEI Director, Contrary Capital Venture Partner, Chinese Student Club Exec Board
- Relevant Courses: Computation Structures, Introduction to Algorithms, Linear Algebra, Fundamentals of Programming, Mathematics for Computer Science, Intro to Low-Level Programming in C and Assembly

Charlotte Latin School | Charlotte, NC   **August 2018 - May 2022**
- SAT: 1580, GPA: 4.8/4.0 weighted
- *Awards and Leadership*: Student Body President, Charlotte Latin School Cum Laude Society, Leadership & Service Award

EXPERIENCE

VIA Technologies | Taipei, Taiwan   **June 2023 – August 2023**
Software Engineer - Deep Learning Intern
- Optimized data augmentation methods with Kornia and wrote Python data sub-setting script to maintain nuScenes category distributions used for BEV (Bird's Eye View) perception model training, improving mAP by 27% and speed by ~10%
- Built key inference visualization feature script in Python and Gradio, taking six camera images as input from an autonomous vehicle sensor suite to output a BEV visualization of objects surrounding the vehicle

MIT Koch Institute for Integrative Cancer Research | Cambridge, MA   **January 2023 – May 2023**
Undergraduate Researcher
- Developed fabrication process for first batch of micro-flexible PCBs used in controlled drug delivery smart capsules that was 5x more efficient using micro hot plates and solder paste; also added temperature sensors to the original PCB design in Altium
- Spearheaded CAD design of catheter-rotating jigs for bioartificial pancreas therapies, enabling core leg of research to continue

Enventys Partners | Charlotte, NC   **May 2022 – July 2022**
Electrical Engineering Intern
- Programmed IoT sanitizer usage management interface using C++ and Particle that detects when compartments need refills, worked directly with client CEO and to be deployed across NYC subway hand sanitizer network of 400+ stations
- Designed central PCB board with EAGLE (Fusion360) for fire alarm detection product, currently in production

University of North Carolina at Wilmington | Wilmington, NC   **June 2021 – December 2021**
Team Lead Researcher
- Built ML models using scikit-learn to predict pathogenicity of αB-crystallin mutations for hereditary cataracts. Investigated model architectures (KNN, SVC, AdaBoost) and conducted hyperparameter search to optimize models to 96% accuracy
- Created open-source pathogenicity prediction tool using most accurate model (SVC)
- Presented at State of North Carolina Undergraduate Research and Creativity Symposium (SNCURCS); approaching publishing

Fab Academy | Charlotte, NC   **January 2020 – June 2020**
Graduate
- One of 7 high school students worldwide to graduate 2020's Fab Academy, a 20-week professional-level engineering and digital fabrication course run by MIT Professor Neil Gershenfeld covering topics like PCB design and embedded programming
- Completed 19 projects and successfully defended capstone project, Navimap, an interactive IoT copper touch map

sheMakes | Charlotte, NC   **January 2020 – August 2023**
Founder and Executive Director
- Founded initiative that builds a collaborative space for female engineers, emphasizing education and exhibition
- Organized Makeathon events; also design social media content, information campaign "Engineering 101" (read by 4,300+ people), and website with a frequently updated database of 70+ student-made projects to involve outside communities

AWARDS

- American Computer Science League Senior 3 Division Finalist
- US Presidential Scholars Program Semi-Finalist
- National Speech and Debate Association Academic All American; Top 8 in the Nation for World Schools 2021 and 2022

SKILLS

Technical: Python, Java, PyTorch, Arduino, Altium, Fusion360, C++, PCB Design and Production, 3D Printing, LaTeX, Excel
Language: Conversational Chinese and Spanish
Interests: Artificial Intelligence, Computer Vision, Electrical Engineering, Microfabrication, Entrepreneurship, Ethics, Sketching