

Elaine Yiming Liu

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EDUCATION

University of Michigan (UM), Ann Arbor, MI, **Computer Science, B.S.E.** May 2025
GPA: 4.0/4.0 | Honors/Awards: LUMS Scholarship, Dean's List, University Honor

Shanghai Jiao Tong University (SJTU), Shanghai, China, **Electrical and Computer Engineering B.S.E.** Aug. 2025
GPA: 3.83/4.0 | Honors/Awards: National Scholarship 2022, Freshman Scholarship 2021

RESEARCH

Michigan Medicine, Functional Imaging Group, **Research Assistant** | Ann Arbor, MI May 2024 - Present

- Investigated deep learning techniques (CNN, LSTM, INR) to perform photoacoustic image reconstruction.
- Simulated ultrasound propagation with MATLAB's k-Wave toolbox to collect synthesized training data.
- Preprocessed CT images and corresponding contours with Python to assure data quality.
- Proposed a new research pathway in device-specific denoising to address low signal-to-noise ratio challenges.

UM CSE, Interactive Sensing and Computing Lab, **Research Volunteer** | Ann Arbor, MI Nov. 2023 - Apr. 2024

- Conducted the collection and management of user data using a bone-conducted microphone and Arduino board to enhance the accuracy and efficiency of the research process.
 - Developed and implemented data processing and analyzed final results with statistical tools to contribute to the clarity and effectiveness of the academic paper's presentation.
 - Publication Contribution: Y. Li, Y. Irvantchi, H. Park, **Y. Liu**, A. Sample, "[ECG Signal Construction From Heart Sounds via Single Node, Surface Acoustic Sensing](#)" (EMBC '24), 2024
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PROJECT & WORK

UM EECS, *EECS493* User Interface Design, **Project Team Lead** | Ann Arbor, MI Aug. 2024 - Present

- Validated user needs through semi-structured interviews and speed dating sessions to refine design concepts.
- Scheduled the development of a high-fidelity prototype in Figma to streamline design iterations.
- Performed usability testing with iterative improvements to optimize interface functionality and user experience.

Siemens, Innovation Center, **Operation Intern** | Shanghai, China Jan. 2023 - Feb. 2023

- Managed visitor database to ensure efficient scheduling for visiting companies.

SJTU UMJI¹, *ENGR100* SilverFOCS Incubator, **Project Team Lead** | Shanghai, China May 2022 - Aug. 2022

- Spearheaded a game development team and leveraged Git to realize efficient project management.
 - Programmed [two web-based games](#) using Elm as the lead developer to advance software engineering skills.
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TEACHING

UM EECS, *EECS445* Intro Machine Learning, **Grader** | Ann Arbor, MI Sep. 2024 - Present

SJTU UMJI¹, *ECE270* Intro Logic Design, **Teaching Assistant** | Shanghai, China May 2023 - Aug. 2023

SJTU UMJI¹, Writing Center, **Writing Consultant** | Shanghai, China & Hybrid Sep. 2022 - Dec. 2023

SJTU UMJI¹, *ENGL100* Academic Writing, **Teaching Assistant** | Shanghai, China Sep. 2022 - Dec. 2022

ACADEMIC DEVELOPMENT

- Michigan Data Science Team, Member Oct. 2023 - Dec. 2023
 - Mathematical Contest in Modeling 2023, Honorable Mention Award May. 2023
 - University Physics Competition 2022, Silver Medal Winner Jan. 2023
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SKILLS

- Technical Tools: C, C++, CSS, Git, HTML, JavaScript, LaTeX, MATLAB, Git, Python, SQL
 - Professional Skills: Academic & Scientific Writing, Leadership, Project Management, GRE 331 (V164; Q167)
 - Languages: Chinese (Native), English (TOEFL 117/120 with Speaking 28/30; IELTS 8.0), German (Beginner)
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¹ University of Michigan - Shanghai Jiao Tong University Joint Institute