Samantha Shih

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Education

Massachusetts Institute of Technology, Cambridge, MA   June 2028
Bachelor of Science in Computer Science and Engineering
Relevant Coursework: Fundamentals of Programming, Mathematics for Computer Science, Multivariable Calculus

Morrison Academy Taichung, Taichung, Taiwan   May 2024
Valedictorian, GPA: 4.0/4.0 unweighted, 4.21/4.21 weighted; SAT: 1560/1600

Professional Experience

UROP – MIT Mobile Technology Group, MIT D-Lab   February 2025 – Present
Research Assistant to Dr. Rich Fletcher
- Studying and replicating smartphone-based circadian rhythm models using Python and digital phenotyping data pipelines.
- Analyzing phone sensor data to capture behavioral patterns, with the goal of drafting a research paper on methodology and findings.

UROP – MIT CSAIL Networks and Mobile Systems Lab   January 2025 – Present
Research Assistant to Chenning Li
- Built and extended an ML pipeline to predict network flow slowdowns using FlowSim simulations and percentile-based feature maps.
- Added multi-class traffic support by generating class-specific feature maps and training separate ML models per class.

MIT's App Dev @ MIT Club   September 2024 – Present
Backend Engineer
- Developed backend functionality or a centralized MIT club database that consolidates club descriptions and recruitment deadlines, streamlining access for students
- Implemented keyword-filtering system to enhance search precision
- Collaborated with a multidisciplinary team to create a user-centered platform, simplifying the club recruitment process

Medical Informatics Healthcare Lab, Chung Shan Medical University,   June 2021 – May 2024
Research Assistant to Professor Chiun-Li Chin
- Applied AI, TensorFlow, Keras, and machine learning model architectures to classify health problems including nail diseases or larynx problems; designed apps for stargazing and traffic accident prevention, created a safe bike
- Team won finalist in weather and transportation divisions of Taipei City Science and Technology Innovation Hackathon, and 19th National Electronic Design Creative Competition

Publications & Presentations

Coauthor: Chen, I. M., Yeh, P. Y., Hsieh, Y. C., Chang, T. C., Shih, S., Shen, W. F., & Chin, C. L. (2023). 3D VOSNet: Segmentation of endoscopic images of the larynx with subsequent generation of indicators. *Heliyon*, *9*(3), e14242. https://doi.org/10.1016/j.heliyon.2023.e14242
- Assisted with experimentations; contributed reagents, materials, analysis tools, & data; labeled & segmented data

First author & presenter: Shih, S., Sun, T. Y., Lin, J. C., & Chin, C. L. (2022). The Classification of Beau's lines, Terry's nails, and Clubbing through AlexNet with Attention.
- Published & presented paper in 2022 International Conference on Fuzzy Theory and Its Applications
- Wrote, edited, published paper on nail disease classification using machine learning model AlexNet with attention mechanisms; led and collaborated with team to achieve high accuracy and precision

Awards & Accomplishments

United States of America Computing Olympiad Platinum Division   December 2022
State Representative, Pacific Areas, 2021-22 Voice of Democracy   May 2022
1st Place, NSDA Taiwan National Qualifier in Original Oratory   April 2022