

Samantha Shih

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Education

Massachusetts Institute of Technology, Cambridge, MA June 2028

Bachelor of Science in Computer Science and Engineering

GPA: 4.9/5.0, Relevant Coursework: Design & Analysis of Algorithms, Linear Algebra, Computation Structures

Morrison Academy Taichung, Taichung, Taiwan May 2024

Valedictorian, GPA: 4.0/4.0 unweighted, 4.21/4.21 weighted; SAT: 1570/1600

Professional Experience

UROP – MIT Mobile Technology Group February 2025 – Present

Research Assistant to Dr. Rich Fletcher

- Engineered smartphone-based circadian rhythm/disruption and stress-prediction models using Python, regression methods, and digital phenotyping pipelines.
- Analyzed longitudinal data from 39 participants (~50K daily sensor events), supporting data collection and co-authoring manuscripts with avg. AUC 0.87 (with SMOTE augmentation).

App Dev @ MIT Club September 2024 – Present

Software Engineer (Team Lead from Fall 2025)

- MIT Clubs (mitclubs.com): Built backend and frontend features for a centralized recruitment platform consolidating 300+ club descriptions and deadlines, streamlining access for hundreds of students.
- MIT MapIT (mitmapit.org): Developed key frontend components for an interactive MIT campus map with searchable building interiors and room-level navigation, now used by 300+ students.

Summer Internship @ AUO (Semantic Segmentation Software) June 2025 – August 2025

Software Engineer

- Developed a web-based annotation and measurement platform with Python backend, including a monitoring dashboard for pixel channel size (critical for screen resolution and performance).
- Automated error detection and relabeling workflows, saving ~50 staff hours per month by enabling AUO teams to quickly identify inaccuracies, trigger preventive maintenance, and retrain models when needed.

UROP – MIT CSAIL Networks and Mobile Systems Lab January 2025 – May 2025

Research Assistant to Chenning Li

- Built and extended ML pipelines using FlowSim simulations and percentile-based feature maps to predict network flow slowdowns.
- Implemented multi-class traffic modeling with class-specific feature maps and separate ML models, improving prediction accuracy under diverse traffic conditions.

Medical Informatics Healthcare Lab, Chung Shan Medical University, June 2021 – May 2024

Research Assistant to Professor Chiun-Li Chin

- Applied deep learning (AlexNet, 3DVOSNet) for medical image classification/segmentation; published 2 papers and earned competition finalist honors.

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>

- Co-author on peer-reviewed paper (Heliyon, 2023), contributing to data annotation and model development.

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.

- First-author paper on nail disease classification (AlexNet + attention); wrote, published, and presented at the 2022 International Conference on Fuzzy Theory and Its Applications.

Awards & Accomplishments

United States of America Computing Olympiad Platinum Division December 2022

Skills: Python (NumPy, Pandas, scikit-learn, TensorFlow, Keras, LightGBM), ML pipelines, backend (Flask/Django), SQL (PostgreSQL, MySQL), NoSQL (MongoDB, Redis), Git, Bash.