Ingrid Hsu

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EDUCATION

Swarthmore College | Swarthmore, PA   *Expected Graduation*: May 2028
Candidate for B.A. in Computer Science and Philosophy; *Cumulative GPA*: 3.9/4.0, *Departmental GPA*: 4.0/4.0
- *Relevant Coursework*: Data Structures and Algorithms, Introduction to Computer Systems, Competitive Programming, Machine Learning (F25), Linear Algebra with Theory, Several-Variable Calculus with Theory, Real Analysis I (F25)

TECHNICAL SKILLS & PROJECTS

Programming: Proficient in Python, Java, C++, C; Familiar with NumPy, Pandas, Matplotlib, Scikit-learn, TensorFlow, Keras

Systems & Tools: Linux, macOS, Git/GitHub, Terminal (Command-Line Interface), x86_64 Assembly, Blender, Fusion 360

EEG Emotion Classification | Python, *MLP & Neural Net*   GitHub
- Built Multi-Layer Perceptron and Feedforward Neural Network to classify electroencephalogram signals into positive, neutral, or negative emotional states, achieving accuracies of 94% and 98% respectively when tested on the EEG Brainwave Dataset: Feeling Emotions from Kaggle. Explored possible applications in autism communication support.

RELEVANT EXPERIENCE

DEVCOM Army Research Laboratory, *Applied ML Research Intern* | Aberdeen, MD   Jun 2025 – Aug 2025
- Research human cognition enhancement by leveraging foundational AI models to improve memory, decision making, and situational awareness for military applications.
- Collaborate with multi-disciplinary research team to develop novel systems for human-computer interaction.

Swarthmore Computational Memory Lab, *GPredicT2 Research Intern* | Swarthmore, PA   Jan 2025 – Present
- Study how the brain forms and retrieves memories with computational focus by EEG, fMRI, and behavioral methods.
- Compare human memory segmentation to prediction errors computed by next-word probability distributions in GPT-2.
- Run experiments with human subjects and write scientific documents, including papers, presentations, and posters.

Swarthmore College Computer Society, *Member of 3D Campus Map Team* | Swarthmore, PA   Sep 2024 – Present
- Develop 3D map of Swarthmore campus to locate classrooms, water fountains, bathrooms, etc. with C#, Unity, Blender.

Plurilock, *Machine Learning Engineering Intern (Internal Systems)* | Swarthmore, PA (Remote)   Jan 2025 – Apr 2025
- Iteratively applied prompt engineering techniques to leverage LLMs for technical cybersecurity content generation.
- Developed a user manual to improve accessibility of LLMs for company employees, reducing need for additional prompt engineering and enabling integration into internal workflow, specifically for the product and marketing team.

The Greater Boston STEM Program, *CS Director, Curriculum Developer, Instructor* | Boston, MA   Mar 2022 – Jan 2025
- Educated 30+ K-8 students on computer programming fundamentals in various languages including Scratch, Python, and Java through 6 classes over the course of 5 semesters at a non-profit organization with over 1000 students.

George Mason University Virginia Serious Games Institute, *Research Intern* | Fairfax, VA   Jun 2023 – Aug 2023
- Researched game design for ethical and social responsibility by product testing, case studies, and literature review.
- Published paper in GMU's *Journal of Student-Scientists' Research* on gamification to aid recovery from addiction.

LEADERSHIP & ADDITIONAL EXPERIENCE

Relevant High School Coursework: Advanced Topics in AI, Advanced CS: AI and ML, Multivariable Calculus, AP Calculus

Affiliations: Rewriting The Code, National Center for Women & Information Technology (NCWIT), Girls Who Code

Awards: NCWIT Award for Aspirations in Computing, National Merit Finalist, AP Scholar with Honor Award

Languages: English (native), Mandarin Chinese (fluent)

Swarthmore Lang Center of Civic and Social Responsibility, *Literacy Tutor* | Chester, PA   Sep 2024–Present
- Instruct and develop curriculum for one-on-one math tutoring with 8th grade student of Chester Children's Chorus.

The Petey Greene Program, *Student Volunteer* | Swarthmore, PA   Sep 2024–Present
- Tutor math to incarcerated people in the State Correctional Institute at Chester for GED and reentry preparation.

Oxford Map the System, *Participant through Lang Center* | Swarthmore, PA   Oct 2024–Nov 2024
- Apply system mapping frameworks to implement lasting-change on digital rehabilitation of incarcerated individuals.

Girls Who Code Club Milton Academy Sector, *Co-Head* | Milton, MA   Nov 2020–Jun 2024
- Organized/led weekly community meetings, professional alumni speakers, and hackathons for 20+ members/girls in CS.

Hebrew Senior Life, *Student Volunteer* | Milton, MA   Oct 2021–Nov 2023
- Instructed 15+ senior citizens at local elderly homes with technology, including iPad set up, printing, and email login.