Yuwenqian Chen

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Available to work full-time from June 2025 | Open to relocation

Education

Stony Brook University **Expected December 2025**
M.S. in Computer Science | GPA-3.63 *Stony Brook, NY*

Stony Brook University **August 2020 - December 2023**
B.S. in Computer Science and Applied Mathematics & Statistics | GPA-3.53 | Dean's List *Stony Brook, NY*

Technical Skills

Programming: Swiftui, Python, Java, C++, HTML/CSS, JavaScript, MySQL, MIPS, R, MATLAB, LaTeX
Frameworks: LLM (OpenAI, Claude, LLaMA), Huggingface, OpenCV, PyTorch, Tensor flow, Matplotlib, Numpy, Pandas, MongoDB

Experience

Software Engineering Intern **February 2024 – June 2024**
GroupClock Inc. *NY*

- Developed an iOS app for facial data collection using **Swift, SwiftUI, and AVFoundation,** enabling secure and structured image capture for downstream ML processing.
- Designed and integrated **RESTful API** endpoints to transmit biometric data to machine learning pipelines, facilitating real-time model input.
- Deployed the app via **TestFlight**, refining performance and UX through iterative testing.
- Built a **MERN stack** web dashboard to manage user data, streamlining operational oversight and data consistency.

Teaching Assistant **2022 Fall, 2024 Fall**
Undergraduate & Graduate CS Courses | Assist Prof. Pramod Ganapathi, Prof. Christopher Kane *Stony Brook, NY*

- Facilitated learning for 100+ students in CS courses by mentoring, grading, and conducting review sessions, enhancing average exam scores around 12%.

Projects

GNNs for Molecular Dynamics Simulations| *Python, PyTorch, GNN* **May 2025 - Present**

- Optimized GNN models (DimeNet, MACE) for acid dynamics, slashing prediction loss by **80%** and accelerating convergence in solvent simulations.

Health Monitoring System | *Swift, MongoDB, HealthKit* **August 2023**

- Led the development of a patient-centered iOS app for Stony Brook University Hospital, integrating **HealthKit data** (heart rate, blood oxygen) to assist in pre/post-operative evaluations.
- Designed a full pipeline from iPhone-based data collection to Excel-based clinician dashboards, enabling better medical insights and decision-making.
- Collaborated in a team of three to align mobile health technology with clinical workflows using **Swift, RESTful APIs,** and a custom **Node.js** backend.

CICAidA Healthcare Monitoring System | *Swift, Firebase* **January 2023**

- mplemented a **Firestore-based backend** system to store and manage real-time heart rate and oxygen data, enabling timely alerts and improved healthcare provider response.
- Contributed to a cross-functional team to design and deliver a centralized patient monitoring system, culminating in a well-received poster presentation that showcased system effectiveness.

RL Agent for Mahjong | *Python, PyTorch, Reinforcement Learning* **May 2025**

- Developed a Mahjong-playing RL agent using PPO and supervised learning, improving average rank by **55.6%** and score by **19.6%** over baselines through custom rewards, curriculum learning, and training on expert Tenhou data.

The Interpretation of Vanity License Plates| *Python, llama3* **September 2024**

- Built a semantic analysis system for vanity license plates using **LLaMA3** and lexicon heuristics, automating DMV compliance checks with **70%** precision.

Handwritten Symbol Recognition (MathKey)| *Python, PyTorch* **September 2024**

- Created MathKey, a PyTorch-based tool for recognizing hand-drawn math symbols, accelerating LaTeX conversion and document prep by **4x**.

Satellite Image Classification | *Python, PyTorch, TensorFlow, VGG-16, MobileNet V2, Xception* **May 2024**

- Achieved **98% accuracy** in satellite image classification using VGG-16, MobileNet V2, and Xception models, evaluating performance with six metrics: Accuracy, Loss, Precision, Recall, F1 Score, and ROC AUC.