

YUWENQIAN CHEN

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

Education

Stony Brook University

M.S. in Computer Science | GPA-3.63

Expected December 2025

Stony Brook, NY

Stony Brook University

B.S. in Computer Science and Applied Mathematics & Statistics | GPA-3.53 | Dean's List

August 2020 - December 2023

Stony Brook, NY

Technical Skills

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

Experience

Software Engineering Intern

February 2024 – June 2024

GroupClock Inc.

NY

- Engineered an iOS app using **SwiftUI + AVFoundation** to securely capture facial data, ensuring reliable transmission 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

Fall 2022, Fall 2024

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

- Collaborated on developing **Graphic Neural Networks** implicit solvent models(eg. **DimeNet, MACE**) for acid molecular dynamics simulations.
- Fine-tuned DimeNet, achieving an **80% reduction in prediction loss** ($0.6 \rightarrow 0.12$) on the training set.

RL Agent for Mahjong| Python, PyTorch, Reinforcement Learning

May 2025

- Built a Mahjong-playing agent using **Reinforcement Learning** (PPO) with enhancements via custom immediate rewards, curriculum learning, and a supervised discard model trained on high-level Tenhou games.
- Outperformed baseline agents with a **55.6%** improvement in average rank ($2.57 \rightarrow 1.13$) and a **19.6%** increase in average score ($25,045 \rightarrow 29,943$), validated through ablation studies and self-play.

The Interpretation of Vanity License Plates| Python, llama3

September 2024

- Fine-tuned a **LLaMA3-7B model** using **LoRA** on a large-scale vanity license plate dataset (150K+ records from CA and NY), applying **NLP techniques** for semantic understanding and classification.
- Achieved **71% accuracy** in predicting plate approval, significantly outperforming traditional lexicon-based heuristics.
- Demonstrated potential to reduce manual plate screening workload by **around 30%**, based on comparative inference speed and human processing benchmarks.

Handwritten Symbol Recognition (MathKey)| Python, PyTorch

September 2024

- Designed and trained a custom CNN model on 200k samples from the Detexify dataset, converting stroke data into images for input.
- Achieved **95.89% Top-3 accuracy**, enabling fast and accurate conversion of handwritten symbols into text, images, and LaTeX formats.

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

May 2024

- Achieved **96% 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.

Health Monitoring System| Swift, SwiftUI, HealthKit

September 2023

- Developed an **iOS** health monitoring app using **HealthKit**, enabling continuous patient data collection and integration into hospital workflows, improving pre- and post-operative assessments.