Jerome Hsu

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Highlight:
Deep Learning
Video Understanding
NLP & Search
Large-scale Systems

Experience

Professor Jennifer Sun's Lab, Cornell Bowers CIS — Undergraduate Researcher
Feb 2025 – Present

- Designed a 5000-line PyTorch framework for modular video model evaluation (action recognition, temporal reasoning).
- Enables large-scale, plug-and-play benchmarking on marine biology datasets with built-in logging and visualization.
- Reimplements key functionality of DeepMind's Video Reader in PyTorch, with added extensibility and dataset flexibility.
- Co-first author on NeurIPS 2025 dataset submission; open-source release planned.

National Science and Technology Council, Taiwan — NLP Research Intern
Summer 2025

- Leading the development of an LLM-powered semantic search engine to modernize access to Taiwan's national dissertation archives.
- Engine integrates dense retrieval, transformer-based reranking, and named-entity query expansion to improve recall across historical and academic texts.
- Tool will serve as the first AI-enhanced retrieval system in the national library's digital transformation initiative.

SmartSearch Project, Cornell Data Science (5% Acceptance) - Project Team Leader
Spring 2025

- Led a team of student engineers in the design and implementation of **SmartSearch**, an intelligent search engine for GitHub repositories.
- Built end-to-end pipeline integrating repository indexing, code snippet retrieval, semantic ranking, and contextual summarization using LLMs.
- Project awarded **Best Project of the Semester** among all Cornell Data Science teams for innovation, usability, and technical depth.

Bubbleye.ai, Taipei — Data Scientist
Jun 2023 – Dec 2023

- Designed predictive lifetime value algorithms for high-dimensional mobile user acquisition data across time and geography.
- Built a parametric time series smoothing framework that captured complex revenue progression patterns from sparse observations.
- Created interactive visual diagnostics for performance validation over 1000+ campaign factor combinations.
- Supported multimillion-dollar campaigns for clients including Playvalve and Playtika.

Intelligent Information Service Lab, NCU — AI Researcher
Sep 2021 – May 2023

- Published a two-stage NLP and econometrics paper on COVID-19 lockdown sentiment in the Q1-ranked *Journal of Medical Internet Research*.
- Led the end-to-end development of neural models and regression pipelines;

Education

Cornell University — B.A. Computer Science, Mathematics
Aug 2024 – Jun 2028
GPA: **4.2 / 4.3**

Projects & Publications

Simulating Artificial Life
Cornell University, CS2112 Final Project
Built a real-time multithreaded ecosystem simulation with language interpreter, parser, and JavaFX GUI. Team ranked top among 100 honors students for design, concurrency handling, and modularity.

Increased Online Aggression During COVID-19 Lockdowns
Journal of Medical Internet Research (Q1), First Author: Hsu, JT; Tsai, RT
Two-stage study using transformer-based NLP and difference-in-differences econometrics to analyze shifts in sentiment under lockdown policy variation across Taiwan.

LivingStones Multiplayer Game
Developed a full-stack multiplayer game supporting 200+ concurrent players at a summer camp, built with React, Django, and SQLite. Included real-time team mechanics, quizzes, and interactive maps.

Skills

Programming: Python, C++, Java, JavaScript, Bash, SQL
Frameworks: PyTorch, React, Django, Postgres, Git, OpenCV, scikit-learn
Topics: Machine Learning, Deep Learning, NLP, Distributed Systems, Time Series, Video Understanding

Awards

Taipei City First Place Research Award — Taipei City Government
Top 50 — Taiwan Olympiad in Informatics (TOI) National Team Selection
Top 30 — Taipei High School Programming Competition
Top 40 / 3000 — Taiwan National Math Olympiad
Regional Champion — Taiwan Math League
Distinction — Australian AMC Senior Division
Asia Pacific Mathematics Olympiad — National Delegate

Languages

Mandarin (Native), English (Native Proficiency)

Interests

Soccer, Piano, Chinese Cooking, Running, Table Tennis