

# Leo (Yi-Ting) Chao

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Research interests: ML systems; LLM evaluation & tooling; assistive & real-time systems; HCI-for-learning

## Education

**University of California, Irvine** | Irvine, CA

September 2023 - June 2026 (expected)

Bachelor of Science, Computer Science - Intelligent Systems specialization (GPA: 3.98/4.00)

Honors: Dean's Honors List (All Quarters), Accelerated 3-Year Degree

## Publications & Manuscripts

### Submitted to ITiCSE 2026 (Under Review)

**Chao, L.**; Lu, C.; McGrath, M.; Cho, C.; Yeh, T.; Rios, M.; Yeh, E.; Ganesh, S.; Yeh, T. "Chat-Bloom: A Framework for Measuring Cognitive Offloading in CS Education."

### In Revision for Submission at ICER 2026

Park, H.; Ganesh, S.; Chinnaswamy, V.; **Chao, L.**; Yeh, T.; Cho, C.; Lu, C.; Yeh, T. "PREVAIL: Predictive Replay-based Evaluation and Validation of AI's Impact on Learning."

## Research Experience

**University of California, Irvine - ARCALA Research Lab** | Irvine, CA

January 2025 - Present

Undergraduate Research Assistant

- Investigating the effects of LLM use in university level CS education, determining methods to improve student learning
- Co-designed and deployed iGPT, a chatbot app built with Next.js, Vercel AI SDK and KV, in CS0-2 offerings, maintained server stability throughout multiple quarters, and collected anonymized chat logs
- Co-developed Chat-Bloom taxonomy to measure requested vs. provided cognitive offloading, organized and analyzed the CS1 dataset (234 students, 8,076 prompts/responses)
- Ran human-coder validation (75.9% inter-rater reliability), then trained transformer classifiers (BERT/DistilBERT) and an achieving ~90% accuracy on ensemble model
- Co-built and tested PREVAIL evaluation harness: replay and predictive-replay pipelines to estimate how LLM assistants, such as OpenAI study mode, change student's next-turn offloading and learning signals
- Assisted in data validation for paper accepted to SIGCSE 2026: "Pacing for mastery: Optimizing LLM Interactions for Learning"

## Professional Experience

**Acer** | Taipei, Taiwan

June 2025 - August 2025

Software Engineering Intern

- Automated key SDLC phases (SRS, HLD, coding, testing, and deployment) via a multi-agent AI system built with Google's Agent Development Kit and deployed to internal Vertex AI Agent Engine, reducing manual iteration time by 35% in testing
- Developed a LangGraph-based prototype then migrated to Google's ADK by refactoring workflows, memory management and prompt logic, enabling tighter integration with 6 enterprise-grade GCP services such as Cloud Storage and Firestore
- Designed and orchestrated 10+ dynamic subtask execution e.g. SRS-to-architecture diagram translation, API stub generation, and test case drafting, by integrating Vertex AI APIs and Gemini models with persistent agent memory
- Containerized and deployed the agent system to GCP, architecting production path for integration into internal Google Agentspace

**EZ Intelligent Technology** | Taipei, Taiwan

June 2024 - August 2024

Software Engineering Intern

- Co-developed an AI pedestrian flow management system deployed in Keelung Harbor, utilizing Python, OpenCV, and PyTorch
- Prototyped a self-attention-based neural network, achieving 98% accuracy on validation set by optimizing dropout parameters
- Doubled in-motion object detection precision compared to stationary images by refining OpenCV image preprocessing pipelines
- Boosted model generalization by 20% on live data by systematically evaluating and tuning data augmentation strategies

## Teaching

**University of California, Irvine - Discrete Mathematics for Computer Science** | Irvine, CA

March 2025 - June 2025

## *Learning Assistant*

- Supported a 250-student course during lectures, facilitated in-class Q&A and small-group discussions on proofs, relations, and combinatorial problems, co-proctored 4 exams
- Held weekly office hours (avg ~10 students/week) for homework and exam prep, coached students through problem solving steps, saw noticeable increase in exam scores
- Actively monitored Ed Discussion, resolving students' logistical and content questions while routing significant ones to lead-TA
- Received certification as Certified Learning Assistant (UCI DTEI)

## **Leadership**

### **Taiwanese Programming Outreach Association (TPOA)** | Tainan / Kaohsiung, Taiwan

*April 2022 - August 2023*

*Founder, Program Director, Speaker*

- Founded a student-led outreach program delivering intro-to-programming workshops across 10+ public schools, coordinated with the Taiwanese Education Bureau, school administrators, and teachers for scheduling and course content
- Handled session logistics including materials, room setup, attendance, and remote support during COVID-19
- Hosted and delivered lessons to classes of ~30 students, including honors cohorts

### **Taiwanese Student Association (TSA)** | Irvine, CA / Taipei, Taiwan

*September 2023 - March 2025*

*Treasurer, Board Member*

- Managed event budgets for 20+ events serving ~600 participants, maintained expense tracking and reimbursement workflows, and coordinated vendor payments
- Coordinated with 10+ other universities' clubs to host professional, social, and cultural events across the academic year

## **Coursework**

**Completed:** Computational Photo & Vision, Computational Geometry, Principles in System Design, Discrete Mathematics, Boolean Logic, Computer Organization, Information Retrieval, Introduction to AI, Machine Learning & Data Mining, Data Structure Implementation & Analysis, Software Design, Linear Algebra, Programming in C++

**In progress (Winter 2026):** Design and Analysis of Algorithms, Concepts in Programming Languages, Project in AI, User Interaction Software

## **Programming Projects**

### **HeadsUp** | Python, Selenium, PySide6, XGBoost, Scikit-learn, Pandas, eval7

*July 2025 - Present*

- Built a real-time NLHE assistant by integrating a Selenium-based API to poll live game state data, displaying suggested actions via a multi-threaded PySide6 overlay with < 20ms internal processing latency
- Trained and deployed a GTO-Lite XGBoost model to classify postflop actions, achieving a 95.6% test accuracy on validation data after training on a 50,000 sample dataset generated with a custom eval7-based GTO oracle
- Developed an action-inference engine to log hero decisions vs. GTO advice in csv for post-session evaluation with Pandas

### **PDFim** | Python, curses, PyMuPDF

*January 2025 - February 2025*

- Built a Vim-like terminal PDF viewer enabling keyboard-based navigation, quick citation, and visual mode for academic reading
- Improved parsing accuracy on multi-column papers by developing an adaptive layout engine, tested across 80+ research papers
- Reduced memory usage by 30% through a GUI-less rendering system with PyMuPDF to support low-resource environments

### **Zot Events (2024 Irvine Hacks)** | React, Selenium, Node.js

*January 2024*

- Scrapped 500+ UCI events and mapped them with Google Maps/Geocoding APIs, delivered an MVP in <48 hrs as part of a 4-person team.

## **Skills and Awards**

**Languages:** Python, C++, SQL, JavaScript/TypeScript

**ML/AI:** PyTorch, VertexAI, Google Agent Development Kit, scikit-learn

**CV/OCR:** OpenCV, Tesseract

**Data & DB:** pandas, NumPy, SQLite

**Systems/Tools:** Git, Linux, LangGraph/LangChain, FastAPI, React/Node.js, Selenium

**Concepts:** information retrieval, LLM evaluation, software design & testing