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

In Revision for Submission at ITiCSE 2026

Ganesh, S.; Yeh, T.; **Chao, L**.; Chinnaswamy, V.; Yeh, E.; Cho, C.; Yeh, T. *"Chat-Bloom Taxonomy: Reimagining Bloom's to Empirically Evaluate Human–LLM Interactions in CS Education*."

- Previously submitted to Koli Calling '25

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.*"

- Previously submitted to EAAI-26

Research Experience

University of California, Irvine - ARCALA Research Lab | Irvine, CA *January 2025 - Present*

Undergraduate Research Assistant

- Researching the effects of LLM use in university level CS education, determining methods to improve student learning
- Co-designed then 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 (accuracy up to 75.9% for experienced coders), then trained transformer classifiers (BERT/DistilBERT mid-70% accuracy) and an ensemble to ≈85–90% accuracy at adjustable coverage
- 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 proofreading full 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 ex. 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: 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 (Fall 2025): Computational Photo & Vision, Computational Geometry, Principles in System Design

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; achieved < 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*

- Scraped 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