

Liang-Yuan “Leo” Wu

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🏠 binomial14.github.io

🌐 github.com/binomial14

🎓 Liang-Yuan Wu

Education

New York University <i>Doctor of Philosophy in Computer Science</i>	Sep 2026 - June 2030 (expected) New York, USA
University of Michigan <i>Master of Science in Computer Science & Engineering</i>	Sep 2022 - May 2024 Michigan, USA
National Taiwan University <i>Bachelor of Science in Electrical Engineering</i>	Sep 2017 - Aug 2021 Taipei, Taiwan

Research Experience

BiAlign Lab <i>Research Associate (remote), advised by Prof. Hua Shen, Dr. Chao-Han Huck Yang, and Prof. Tongshuang Wu</i>	Aug 2025 – Present Shanghai, China
<ul style="list-style-type: none">Led a project investigating the emotional intelligence of audio-language models, developing a novel psychometrically grounded benchmark dataset, and submitted a paper to COLM 2026.	
Soundability Lab <i>Research Assistant, advised by Prof. Dhruv Jain</i>	May 2023 – Oct 2025 Michigan, USA
<ul style="list-style-type: none">Led 4 research projects integrating machine learning, HCI, and medical school collaboration to design accessible audio AI systems; also delivered 1 filed patent and 1 Android application.Developed a real-time speech-to-text captioning system for lab meetings and clinical scenarios, improving accessibility and communication for DHH researchers and patients.	
Computational Human Artificial Intelligence Lab <i>Student Researcher, advised by Prof. Emily Mower Provost</i>	Aug 2022 – Apr 2023 Michigan, USA
<ul style="list-style-type: none">Developed speech emotion recognition models using multimodal approaches, incorporating silence tokens and audio energy features to improve activation state prediction and emotion classification.Applied domain adversarial loss to enable personalized emotion recognition by mitigating speaker-dependent biases across diverse user data.	
Speech Processing and Machine Learning Laboratory <i>Student Researcher, advised by Prof. Lin-Shan Lee and Prof. Hung-Yi Lee</i>	Aug 2019 – Aug 2021 Taipei, Taiwan
<ul style="list-style-type: none">Developed a Mandarin ASR training pipeline and investigated code-switching speech patterns, presenting findings at Machine Learning Summer School 2021.Implemented and demonstrated explainable AI algorithms in natural language processing and computer vision, delivering these as interactive homework examples in a machine learning course with 1,000+ students.	

Work Experience

Ucarer Inc. <i>AI Platform Engineer Intern</i>	May 2021 – Aug 2021 Taipei Taiwan
<ul style="list-style-type: none">Developed a backend system using JavaScript and PHP for an e-commerce platform to assist Sarcopenia patients in scheduling physical therapy sessions and purchasing health-supportive foods.Built a customer relationship management system using PyTorch to analyze time-series data, enabling dynamic evaluation and ranking of customer needs based on health engagement patterns.	
Dragon Cloud AI <i>Machine Learning Engineer Intern (remote)</i>	May 2020 – May 2021 California, USA
<ul style="list-style-type: none">Developed an AWS-based speech processing software to transcribe classroom recordings, detecting English portions in Mandarin-English bilingual classrooms to analyze teaching effectiveness.Implemented an English accent scoring system using PyTorch, providing automated numerical feedback to assist non-native speakers in evaluating their pronunciation.	

Teaching Experience

EECS 592 Foundations of AI (Fall 2023) <i>Graduate Student Instructor</i>	Aug 2023 – Dec 2023 University of Michigan
EE 5184 Machine Learning (Spring 2021) <i>Teaching Assistant</i>	Feb 2021 – Jun 2021 National Taiwan University
EE 1006 Cornerstone EECS Design and Implementation (Spring 2020) <i>Teaching Assistant</i>	Feb 2020 – Jun 2020 National Taiwan University

Publications

* indicates Equal Contribution [J#] = Journal Paper [C#] = Conference Paper [P#] = Short Paper [U#] = Under Review / Preprint

- [C4] **Liang-Yuan Wu** and Dhruv Jain, “**SoundNarratives: Rich Auditory Scene Descriptions to Support Deaf and Hard of Hearing People**”, in *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*.
- [C3] **Liang-Yuan Wu**, Andrea Kleiver, Dhruv Jain, “**CARTGPT: Real-Time Correction of CART Captions Using Large Language Models**”, in *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*.
Best Paper Honorable Mention
- [C2] Jeremy Zhengqi Huang, Caluã de Lacerda Pataca, **Liang-Yuan Wu**, Dhruv Jain, “**CapTune: Adapting Non-Speech Captions With Anchored Generative Models**”, in *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*.
- [C1] Jeremy Zhengqi Huang, Jaylin Herskovitz, **Liang-Yuan Wu**, Cecily Morrison, Dhruv Jain, “**Weaving Sound Information to Support Real-time Sensemaking of Auditory Environments: Co-designing with a DHH User**”, in *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25)*.
- [J1] Sarah E Hughes*, **Liang-Yuan Wu***, Lindsay J Ma, Dhruv Jain, Michael M McKee, “**Assessing the Role of Medical Caption Technology to Support Physician-Patient Communication for Patients with Hearing Loss: A Pilot Study**”, in *JMIR Rehabilitation and Assistive Technologies (forthcoming)*.
- [P3] **Liang-Yuan Wu** and Dhruv Jain, “**EvolveCaptions: Real-Time Collaborative ASR Adaptation for DHH Speakers**”, in *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*.
- [P2] Jeremy Zhengqi Huang, Caluã de Lacerda Pataca, **Liang-Yuan Wu**, Dhruv Jain, “**Demo of CapTune: Adapting Non-Speech Captions With Anchored Generative Models**”, in *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '25)*.
- [P1] **Liang-Yuan Wu**, Andrea Kleiver, Dhruv Jain, “**CARTGPT: Improving CART Captioning using Large Language Models**”, in *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '24)*. **Best Poster Award**
- [U2] **Liang-Yuan Wu**, Virginia Chen, Tongshuang Wu, Chao-Han Huck Yang, Hua Shen, “**SpeechEQ: Benchmarking Emotional Intelligence Quotient in Socially Aware Voice Conversational Models**”, under submission at an anonymous conference.
- [U1] **Liang-Yuan Wu** and Dhruv Jain, “**EvolveCaptions: Empowering DHH Users Through Real-Time Collaborative Captioning**”, under submission at an anonymous conference.

Presentations

SoundNarratives: Rich Auditory Scene Descriptions to Support DHH People <i>Presented in Generative AI and Accessibility Workshop, CHI 2025.</i>	Apr 2025
Automatic Speech Recognition in Clinical Care <i>Presented in Disability Research Symposium, hosted by the Center for Disability Health and Wellness (CDHW), Michigan Medicine.</i>	Oct 2024
Improving User Experience in Speech Recognition with Large Language Model <i>Presented in 2023 AI Symposium, hosted by the AI Lab, University of Michigan.</i>	Oct 2023
Code-Switching Text Data Augmentation <i>Presented in Machine Learning Summer Schools (MLSS) 2021.</i>	Aug 2021

Honors

MICDE Fellowship (\$4500) , UM (Offered but declined)	Apr 2026
Tandon Fellowship , NYU	Mar 2026
Best Paper Honorable Mention (10/83) , ASSETS '25	Aug 2025
Best Poster Award (1/44) , ASSETS '24	Oct 2024
Dean's List (top 5%) , NTU	Dec 2021
Y.L. Lin Scholarship (\$15,000) , Y.L. Lin Hung Tai Education Foundation	Jul 2021
Outgoing Exchange Student Scholarship (\$2,500) , NTU	Dec 2020
Social Devotion Special Award , NTU	Nov 2020
2nd Prize, Undergraduate Innovation Award , NTUEE	Jun 2020

Services

External Reviewer: ACM CHI 2026, ACM UIST 2026, SAGE Trends in Hearing 2025, AAAI ICWSM 2024
Volunteer: Discover Engineering Workshop (UMich), Xplore Engineering Workshop (UMich)