Chun-Wei (Patrick) Chiang

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Summary

Ph.D. candidate in Computer Science with expertise in Human-AI Interaction and Applied Machine Learning. Specializing in recommendation systems, I applied this expertise during two internships, developing a food recommendation model and implementing collaborative filtering for item recommendations. I applied my expertise in human-computer interaction during my internship at Honda Research Institute to improve safety and human-vehicle interactions. Published 10+ papers and skilled at conveying complex insights to non-technical audiences.

Education

Ph.D. in Computer Science, Purdue University 2020 - May 2025
M.S. in Computer Science, West Virginia University 2016 - 2018

Skills

Programming Language	Python, Java, JavaScript, HTML, R, SQL
Machine Learning/ AI Tools	TensorFlow, Pytorch, Sklearn
Research Skills	Quantitative Research, Qualitative Research, Experimental Design A/B Testing, Survey Research, Interview Research, Data Analysis
Web development	Vue.js, Django, AWS

Professional Experience

Purdue University January 2020 - Present
Graduate Research Assistant

- Led and executed qualitative and quantitative research, conducting **A/B tests** to evaluate human-AI teaming performance and identify key interaction variances, improving usability and engagement.
- Built and deployed a full-stack web application using **Vue.js** and **Django**, hosted on **AWS Elastic Beanstalk**, supporting data collection and analysis for over 4 research projects.
- Designed and implemented a **Large Language Model**-based chatbot to enhance human-AI teaming, improving collaboration performance by 13% in decision-making and also reducing decision bias.

Twitch June 2023 - August 2023
Applied Science Intern

- Engineered and deployed a sequential-based **collaborative filtering algorithm**, improving item recommendation precision by 15% in pilot studies.
- Analyzed large-scale user behavior datasets using data science tools (Python, SQL), uncovering patterns and trends to refine machine learning models and improve recommendation performance.
- Collaborated with cross-functional teams including data engineers, product managers, and software developers to integrate new algorithms into the production pipeline.

Honda Research Institute January 2023 - May 2023
Research Intern

- Researched driver behavior and user experience in autonomous vehicles, using quantitative analysis to improve safe, user-friendly interfaces.
- Analyzed large-scale data on driver interactions with autonomous systems, uncovering patterns that enhanced usability and driver satisfaction.

Brain Technologies June 2022 - August 2022
Natural Language Processing (NLP) Research Intern

- Developed personalized product recommendation systems using Large Language Models (LLMs), leveraging user behavior data from YouTube watch history to enhance recommendation system.
- Integrated GPT-3 with online search technology to create a dynamic knowledge base, enabling real-time web information processing and delivering more accurate, context-aware responses to user queries.

West Virginia University January 2017 - August 2019
Graduate Research Assistant

- Created a **Google Chrome extension** to collect 10K real-world data points on crowdsourcing tasks, analyzing worker's completion time and enabling better time estimation through data collection.
- Modeled task completion time, achieving approximately 70% prediction accuracy for hourly wages based on task content and metadata.
- Developed an online peer support tool to help crowd workers improve professional skills, resulting in a 32% increase in work efficiency and improving task completion rates across multiple online platforms.

Covoir January 2019 - August 2019
Co-founder

- Secured $500K in seed funding, successfully leading the company's initial investment round, which enabled the transition from concept to operational startup.
- Spearheaded the development of a decentralized Oracle service for blockchain applications, providing real-time access to off-chain data and enhancing blockchain functionality.

Mitake Information November 2014 - June 2016
Software Engineer

- Developed and maintained eight high-performance Android applications for stockbrokers, utilizing the Android SDK and ensuring smooth performance across devices. The apps reached over 1 million downloads, significantly enhancing user engagement and satisfaction in the financial services industry.

Honor and Certification

- Google Certificate: Foundations of Project Management
- Best Poster Honorable Mention, The World Wide Web Conference (WWW'19)
- Gary Marsden Travel Awards, Conference on Human Factors in Computing Systems
- NSF Student Travel Award, AAAI Conference on Human Computation and Crowdsourcing

Publications

Published 10+ peer-reviewed papers on Human-AI interaction in top conferences, including CHI, IUI, and CSCW. [Google Scholar]

[1] Chun-Wei Chiang, Zhuoran Lu, Zhuoyan Li, and Ming Yin. "Enhancing AI-Assisted Group Decision Making through LLM-Powered Devil's Advocate". In: *Proceedings of the 29th International Conference on Intelligent User Interfaces*. 2024, pp. 103–119.

[2] Chun-Wei Chiang, Zhuoran Lu, Zhuoyan Li, and Ming Yin. "Are Two Heads Better Than One in AI-Assisted Decision Making? Comparing the Behavior and Performance of Groups and Individuals in Human-AI Collaborative Recidivism Risk Assessment". In: *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. 2023, pp. 1–18.

[3] Chun-Wei Chiang and Ming Yin. "Exploring the effects of machine learning literacy interventions on laypeople's reliance on machine learning models". In: *27th International Conference on Intelligent User Interfaces*. 2022, pp. 148–161.

[4] Chun-Wei Chiang and Ming Yin. "You'd better stop! Understanding human reliance on machine learning models under covariate shift". In: *Proceedings of the 13th ACM Web Science Conference 2021*. 2021, pp. 120–129.

[5] Chun-Wei Chiang, Anna Kasunic, and Saiph Savage. "Crowd coach: Peer coaching for crowd workers' skill growth". In: *Proceedings of the ACM on Human-Computer Interaction* 2.CSCW (2018), pp. 1–17.