Jingxian(Jing) Liao

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Education

Ph.D. in Computer Science and Human-Computer Interaction, University of California, Davis (Sep 2018 - present)
Thesis: Restructuring Unstructured Video Resources for Collaborative Learning and Work

M.S in Computer Science, University of California, Davis (Sep 2018 – Dec 2020)

M.S in Statistics, University of California, Davis (Sep 2016 – June 2018)

Bachelor in Statistics, Hunan University (Sep 2012 – June 2016)

Research Interests

My research area is Human-Computer Interaction (HCI) and Data Science (DS), with a focus on social collaboration. My studies use social interaction mechanisms and human-centered AI approaches to understand and facilitate general online users to forage, evaluate, and apply knowledge online individually and in group.

Keywords: Computer-supported Cooperative Work and Social Computing (CSCW), Social Computing, Knowledge Organization and Retrieval, Human-AI Collaboration, Human-centric Data Science, Peer Production, Online Learning

Publications

Conference Regular Papers and Journal Papers

- **Jingxian Liao**, Wei Wang, Jason Xue, Anthony Lei, Xue Han, Kun Lu. 2022. Combating Sampling Bias: A Self-Training Method in Credit Risk Models. In Proceedings of the 34th Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-22)

🏆 Chien-Lin Tang*, **Jingxian Liao***, Hao-Chuan Wang, Ching-Ying Sung, Wen-Chieh Lin. 2021. ConceptGuide: Supporting Online Video Learning with Concept Map-based Recommendation of Learning Path. In Proceedings of the Web Conference 2021. *These authors contributed equally to this work
[Best Student Paper Award] DOI: https://doi.org/10.1145/3442381.3449808

- **Jingxian Liao** and Hao-Chuan Wang. 2020. Gestures as Intrinsic Creativity Support: Understanding the Usage and Function of Hand Gestures in Computer-Mediated Group Brainstorming. In Proceedings of ACM Human-Computer Interaction 3, GROUP, Article 243 (GROUP 2020) DOI: https://doi.org/10.1145/3361124
- **Jingxian Liao**, Guowei Yang, David Kavaler, Vladimir Filkov, Prem Devanbu. 2019. Status, identity, and language: A study of issue discussions in GitHub. In PLOS ONE 14(6): e0215059. DOI: https://doi.org/10.1371/journal.pone.0215059

- Chang Shu*, **Jingxian Liao***, Pengfei Wang*, Xiangning Zhu*, Yinghua Ren. 2015. The Empirical Research on the Real Economy and Financial Services based on the Effective Liquidity. In Financial Statistics Research. vol1, 2015. *These authors contributed equally to this work

Conference Late Breaking Work, Workshop Papers, Posters

- **Jingxian Liao**. Restructuring Unstructured Video Resources for Collaborative Learning and Work. In The 2023 ACM International Conference on Supporting Group Work (GROUP '23)
- **Jingxian Liao**, Hao-Chuan Wang. 2022. Nudge for Reflective Mind: Understanding How Accessing Peer Concept Mapping and Commenting Affects Reflection of High-stakes Information. In Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems (CHI EA '22)
- **Jingxian Liao**, Wei Wang, Jason Xue, Anthony Lei. 2021. Data Augmentation Methods for Reject Inference in Credit Risk Models. In AAAI-21 Workshop on Knowledge Discovery from Unstructured Data in Financial Services [link]
- Chien-Lin Tang, **Jingxian Liao**, Hao-Chuan Wang, Ching-Ying Sung, Yu-Rong Cao, Wen-Chieh Lin. 2020. Supporting Online Video Learning with Concept Map-based Recommendation of Learning Path. In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20). DOI: https://doi.org/10.1145/3334480.3382943
- **Jingxian Liao**, Hao-Chuan Wang. 2020. Beyond Consciousness: Studying Intrinsic and ImplicitGesture Use in Group Brainstorming through a Data ScienceLens. In Human-Centered Data Science Workshop at GROUP 2020

Professional Experience

Research Intern June 2022 - Sep 2022

Google Research, Google, Inc.

With Nick Furlotte, Farhad Hormozdiari, Justin Cosentino, Andrew Carroll, Cory McLean

- Created latent representations of environmental and behavioral traits with UK biobank data with human explanations
- Found statistical links among the interplay of air and noise pollution, exercises, and sleep phenotypes on health status such as hypertension, diabetes, which implies future Fitbit health suggestion design and research directions

Data Scientist Intern June 2020 - Sep 2021

Intuit AI+Data, Intuit, Inc.

With Wei Wang, Jason Xue, Xue Han, Kun Lu

- Created novel semi-supervised techniques to combat sampling bias on credit scoring
- Proposed innovative two-stage methods to estimate revenue through peer benchmarking

Research Summer Intern July 2019 - Sep 2019

Intel-NTU Connected Context Computing Center, Taipei, Taiwan

With Chuang-Wen You, Hao-Chuan Wang

- Designed experiment to explore social sensemaking for professional drivers' health
- Applied multivariate time-series qualitative and quantitative analysis for efficient rest suggestion

Graduate Student Researcher Sep 2017 - Aug 2018

DECAL lab, University of California, Davis
With Vladimir Filkov, Prem Devanbu

Graduate Student Researcher Aug 2017 - Oct 2017

California Civic Engagement Project

Research Assistant Sep 2018 – Present
Department of Computer Science, University of California, Davis, USA
Advisor: Hao-Chuan Wang

Teaching Assistant 2020 – 2023
Department of Computer Science, University of California, Davis, USA
TA in Discrete Mathematics in Computer Science
TA in Evaluating User Interactions with Computing Artifacts
TA in Introduction to Human-Computer Interaction

Invited Talks

Restructuring Unstructured Video Resources for Learning, Thinking and Work
Google Research July 2022

ConceptGuide -- A web of learning: Supporting Online Video Learning with Concept Map-based Recommendation of Learning Path
Computing Education Research Discussion (CERD) seminar Feb 2022

Selected Award, Patent, Coverage, and Community service

- Best Student Paper Award, the Web Conference 2021
- Google PhD Fellowship nominee, 2020
- First class scholarship, Hunan University, 2013-2015

- US patent. "Method of Machine Learning Training for Data Augmentation". Filed
- US patent. "Combining Unsupervised and Supervised Machine Learning to Estimate SMB (Small Business) Revenue in Lending". Filed

- Reviewer for ACM CHI, CSCW, DIS, mobileHCI, IUI
- Special Recognitions for Outstanding Reviews in CSCW, DIS

- University News Coverage on paper. "A Guide for Learning from YouTube". Sep 2021.

Skills and expertise

- Skilled in Quantitative research, Social computing, User interaction design, Prototyping, Wireframing, Data collection and visualization, surveys, Experiment design, Usability testing, System evaluation
- Skilled in Natural Language Processing, Machine Learning, Explainable AI, Data Analysis, Causal Inference
- Language and tool: Python, Spark, TensorFlow, PyTorch, SQL, NoSQL, R, SPSS, MATLAB, JavaScript, HTML, D3.js, React, Figma
- Skilled in AWS, Google Cloud, Microsoft Azure, Git, Databricks, Hadoop, Linux