Jeng-Yu Chou

jchou@umass.com https://jelchou.github.io/ linkedin.com/in/jelchou jelchou

Education

University of Massachusetts Amherst Expected Graduation: May 2027
PhD in Computer Science

- Advised by Brian Levine

University of Massachusetts Amherst Sep 2022 - May 2025
MS in Computer Science

- GPA: 3.925/4.0
- Advised by Brian Levine in the MS/PhD program
- **Main Coursework:** Secure Distributed Systems, Adv. Algorithms, Natural Language Processing, Neural Networks

University of Massachusetts Amherst Sep 2018 – Dec 2021
BS in Computer Science

- GPA: 3.869/4.0
- **Main Coursework:** Computer & Network Security, Applied Cryptography, Algorithms for Data Science

Publications

A Quantitative Analysis of Inappropriate Content, Age Rating Compliance, and Risks to Youth on the Whisper Platform ARES (COSH) Jul 2024

Jeng-Yu Chou, Brian Levine

Enabling Cross-Platform Comparison of Online Communities Using Content and Opinion Similarity EMNLP (Findings) Nov 2024

Prasanna Lakkur Subramanyam, **Jeng-Yu Chou**, Kevin K. Nam, Brian Levine

Research Experience

Graduate Research Assistant Amherst, MA
University of Massachusetts Amherst, UMass Rescue Lab Sep 2022 – Present

- Research into improving moderation of harmful internet content, characterization of large online communities, and the application of ML to child rescue topics
- Designed and implemented an automated data collection and classification pipeline using Android Studio, Appium, and LLMs for detecting sexual, illicit, and inappropriate content in social media posts, providing quantitative insights into platform safety, community behavior, and age rating compliance challenges
- Implemented knowledge distillation using VLM synthetic supervision to improve CLIP's performance on harmful content detection across multiple moderation tasks while maintaining computational efficiency

Undergraduate Research Assistant Amherst, MA
University of Massachusetts Amherst, UMass Rescue Lab Jun 2021 – Dec 2021

- Advisor: Brian Levine
- Evaluated the danger social applications pose to minors
- Utilized Python libraries and Twitter and Discord APIs to scrape and analyze toxicity patterns in text data

Industry Experience

Software Development Engineer Amherst, MA
Automated Controversy Detection, Inc. Mar 2022 – Jul 2022

- Engineered full-stack dashboard platform with React frontend and FastAPI backend, implementing JWT authentication, automated data refresh intervals, and real-time visualization of Twitter analytics including toxicity scoring, controversy detection, and sentiment analysis across multi-service architecture

- Developed NLP service integrations and data pipeline infrastructure, including text summarization and stance detection services, implementing PDF keyword search with context extraction and highlighting capabilities, and integrating third-party APIs for geographic interest mapping and news article aggregation

Software Developer Amherst, MA
Automated Controversy Detection, Inc. May 2020 – May 2021

- Developed Chrome extension for content filtering and constructed data mining web crawlers for text analysis using Elasticsearch and Kibana

Other Experience

Teaching Assistant Amherst, MA
University of Massachusetts Amherst Jan 2024 - May 2025

- Supported course instruction across three courses: CMPSCI 345 (Data Management, Spring'25), CMPSCI 563 (Internet Law & Policy , Fall'24), and CMPSCI 220 (Programming Methodology, Spring'24)
- Conducted laboratory sessions, created grading rubrics and exam material, held office hours, monitored course forums, delegated tasks to course staff, and delivered classroom instruction during faculty absences

CSWomen Social Events Coordinator Amherst, MA
University of Massachusetts Amherst Dec 2023 - Present

- Organized networking and professional development events including collaborations with Voices of Data Science '24, UMass Amherst CICS Careers CSWomen resume workshop, and a series of professor and PhD student talks on research, career advice, and job search practice

Director of Outreach Boston, MA
TechTogether Boston Hackathon May 2020 - Apr 2021

- Oversaw outreach initiatives at the high school, collegiate, and post-grad levels

Co-Founder Amherst, MA
Microbial Identifier: iSPY Startup Feb 2019 - May 2020

- Utilized Google AutoML Vision to identify morphology of bacteria
- UMass Innovation Challenge third place (raised $7,500) and won three categories at HackHer413

Projects

A Survey on Privacy and Safety in Diffusion Models Dec 2024

- Conducted comprehensive survey of attack vectors and defense mechanisms for diffusion models, systematically categorizing privacy threats that exploit generative model vulnerabilities including membership inference attacks, backdoor insertion, training data leakage, and adversarial perturbations
- Evaluated mitigation strategies for ensuring safe deployment of diffusion models, examining differential privacy techniques, content filtering, bias prevention, and backdoor detection while identifying trade-offs in computational cost, output fidelity, and scalability for real-world sensitive applications

Stochastic Meta-Learning for Augmentation Policy (SMAP): Enhancing Fine-Grained Image Classification Dec 2023
github: SMAP

- Developed a novel optimized augmentation policy, Stochastic Meta-Learning for Augmentation Policy (SMAP), that leverages meta-learning to optimize augmentation strategies for enhanced classifier performance
- Utilized a ResNet-50 model as the backbone classifier and compared the impact of SMAP against traditional usage of augmentation techniques

Examining Medical Narratives of Eating Disorder Recovery on Reddit May 2023
github: narrative-analysis

- Fine-tuned BERT-based models to identify narratives in Reddit data
- Utilized ChatGPT instruction prompting for trigger and factor extraction and experimented with custom and NLTK stop words for topic modeling
- Employed SentProp (Hamilton et al., 2016) algorithm to generate domain-specific sentiment lexicons