Qihan Wang

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https://mangocyann.github.io/

Research Interests Natural Language Processing, Machine Learning, Data Mining, Computational Social Science, Social Network Analysis

Education

B.S. Psychology, Peking University — Sep 2019 - Jul 2023

- **Academics:** Overall GPA: 3.70/4.0
- **Mathematical skills:** Calculus, Linear Algebra, Probability, Statistics (Hypothesis Testing, Bayesian Inference, Causal Inference, Machine Learning), Data Structure and Algorithms.
- **Coding Skills:** Python, Matlab, C/C++. Familiar with Machine Learning (Tensorflow, Pytorch), Deep Learning, Natural Language Processing and Network Analysis.
- **Standardized Tests:** TOEFL 109 (L29+R29+S23+W28), GRE 325 (AW:3.5)

Publications

[1] **Qihan Wang**, Keith Burghardt, "Uncovering violence radicalization in online communities", in preparation to be submitted to *NAACL'24*.

[2] **Qihan Wang**, Anique Tahir, Zeyad Alghamdi and Huan Liu, "Exploring Musical, Lyrical, and Network Dimensions of Music Sharing Among Depression Individuals", submitted to *WWW'24*, arxiv: https://arxiv.org/abs/2310.11557

[3] **Qihan Wang**, Daniel Avrahami and Gary Hsieh, "A Like for #Happy, A Comment for #Unhappy: Exploring the Relationship between Emotion in Social-Media Posts and Audience Engagement", submitted to *CSCW'24*

Experience

Aalto University, Department of Computer Science — Aug 2023 - Present
Project: Analyzing Users' Concerns and Perspectives about Mental Health Apps at Scale
Independent Research, Advised by Talayeh Aledavood.

- Proposed methodology for analyzing user reviews of mental health applications at scale.
- Collected user review data by scraping Google Play and App Store.
- Fine-tuned BERT models using PyTorch to categorize mental health app reviews.
- Identified user concerns and perspectives in each category through machine learning techniques such as clustering and topic modeling.

University of Southern California, Information Sciences Institute — Aug 2023 - Present
Project: Uncovering Violence Radicalization in Online Communities
Independent Research, Advised by Keith Burghardt.

- Develop violence classification algorithm and investigated violence radicalization in online communities.
- Fine-tuning deep learning-based NLP models (such as BERT and Roberta) for violence detection.
- Developed a novel multi-task architecture to address label disagreements between annotators.
- Developed a multi-label classification approach for hate-speech-related labels.
- Compared user's frequency of advocating violence before and after joining hate group.
- In preparation to be submitted to NAACL'24 with me as the first author.

Arizona State University, School of Computing and Augmented Intelligence — Jun 2023 - Oct 2023
Project: Towards Understanding Depression through Music Preferences
Independent Research, Advised by Huan Liu.

- Proposed methodology to quantify and compare music preferences between individuals diagnosed with/without depression.

- Extracted songs' musical features by Spotify API and identify significant variations in music preference.
- Leveraged NLP methods such as LDA and LIWC to analyze the difference in topics and language use in lyrics.
- Conducted community detection to study the clustering of depression and non-depression playlists.
- Submitted to WWW'24 with me as the first author

University of Washington, Dept of Human Centered Design & Engineering Jun 2022 - Jul 2023
Project: Exploring the Relationship between Emotion and Audience Engagement on Social Media
Independent Research, Advised by Gary Hsieh.

- Scraped emotional posts from X and categorized them based on the circumplex of affect model.
- Analyzed the relationship between emotion and audience engagement by statistic methods.
- Conducted survey to investigate the reasons of engaging in emotional posts on social media.
- Submitted to CSCW 2024 with me as the first author

AWARDS

Award of Excellent Graduate Student	2023
Scholarship of Peking University	2021, 2022
Scholarship of The School of Cognitive and Psychological Science	2021, 2022
Award of Merit Student	2021, 2022