Julie Jiang

juliejiang112@gmail.com | Personal Website | Google Scholar | Twitter | Linkedin

I am interested in learning about **people** online—how user preferences, social cues, and contextual factors influence and drive user behavior online. I combine expertise from computer science and social science and adopt a variety of deep learning, network analysis, NLP/LLMs, and statistical methods.

Education

University of Southern California (USC) | *Los Angeles, CA*   Aug 2019—May 2024
PhD Candidate in Computer Science—GPA: 4.00/4.00
Research Interests: computational social science & machine learning
Dissertation: "Socially-infused Content Mining of Online Human Behavior"
Advisor: Dr. Emilio Ferrara

Tufts University | *Medford, MA*
BS in Computer Science and Mathematics—GPA 3.72/4.00 *magna cum laude*   2015—2019

Experience

Research Intern at Spotify Research | *Virtual, CA*   Summer 2023
- Advised by Dr. Sam Way in the Human in AI lab of Spotify Tech Research
- Lead an end-to-end research project on the consumption of new music releases from the perspective of genres with ML methods
- Identified recommendation strategies to improve user experience in new release discovery
- Developed music consumption metrics and devised genre-driven insights to support music creation and emerging artists

Data Science Intern at TikTok/ByteDance | *Virtual, CA*   Fall 2022
- Applied Machine Learning team
- Created a series of metrics to measure the hierarchical diversity of ads a user sees on TikTok
- Quantified the effect that varying granularity of ad diversity has on user engagement and retention rates

Research Intern at Snap Research | *Santa Monica, CA*   Summer 2022
- Advised by Dr. Francesco Barbieri in the Computational Social Science Team
- Conducted a large-scale observational experiment on communication behavior on social media (published at **CHI 2023**)
- Discovered that Bitmoji sticker usage is homophilous, reciprocal, and contagious on Snapchat using graph analysis and causal inference methods

Research Assistant at USC Information Sciences Institute (ISI) | *Marina del Rey, CA*   2021—2022
- **DARPA INCAS-UPSCALE** (PI: Dr. Emilio Ferrara): Universal population segmentation and characterization algorithms for online environments

Research Intern at Snap Research | *Santa Monica, CA*   May—Nov 2021
- Advised by Dr. Francesco Barbieri in the Computational Social Science Team
- Examined the link between weather and other contextual impact on and expressed sentiment on millions of Snapchat stories (published at **ICWSM 2022**)
- Validated the effects of good/bad weather and the change in weather on sentiment with ML models

Research Assistant at USC Information Sciences Institute (ISI) | *Marina del Rey, CA*   2019—2021
- **DARPA TAILOR-Bespoke** (PI: Dr. Kristina Lerman): Learning bespoke interventions for performance optimizations in heterogeneous users

Software Engineering Intern at Google | *Mountain View, CA*   Summer 2019
- Adwords API Team

Research Assistant at Tufts University | *Medford, MA*   2018—2019
- Advised by Dr. Li-Ping Liu and Dr. Soha Hassoun
- Developed graph embedding models for biochemical molecular reaction prediction (paper published in **Bioinformatics**)

Software Engineering Intern at Bose Corporation | *Framingham, MA*   Summer 2017
- Developed deep neural network to separate noise from audio signals

# Publications *equal contribution*   **Citations: 282**

CONFERENCES

C9. Julie Jiang, Xiang Ren, and Emilio Ferrara. **Retweet-BERT: Characterizing Echo Chambers by Leveraging Language Features and Information Diffusion in Social Media.** In *Proceedings of the International AAAI Conference on Web and Social Media,* 17(1), 459-469 (**ICWSM '23**). Paper

C8. Julie Jiang, Ron Dotsch, Mireia Triguero Roura, Yozen Liu, Vítor Silva, Maarten W. Bos, and Francesco Barbieri. **Reciprocity, Homophily, and Social Network Effects in Pictorial Communication: A Case Study of Bitmoji Stickers.** In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (**CHI '23**). Paper

C7. Julie Jiang, Jesse Thomason, Francesco Barbieri, and Emilio Ferrara. **Geolocated Social Media Posts are Happier: Understanding the Characteristics of Check-in Posts on Twitter.** In *Proceedings of the 15th ACM Web Science Conference* (**WebSci '23**). Paper arXiv

C6. Julie Jiang, Kristina Lerman, and Emilio Ferrara. **Zero-Shot Meta-Learning for Small-Scale Data from Human Subjects.** *The 11th IEEE International Conference on Healthcare Informatics* (**ICHI '23**). arXiv

C5. Rebecca Dorn, Negar Mokhberian, Julie Jiang, Jeremy Abramson, Fred Morstatter, and Kristina Lerman. **Non-Binary Gender Expression in Online Interactions.** To appear at the *16th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation* (**SBP-BRiMS '23**). Preprint

C4. Julie Jiang, Nils Murrugarra-Llerena, Maarten W. Bos, Yozen Liu, Neil Shah, Leonardo Neves, and Francesco Barbieri. **Sunshine with a Chance of Smiles: Weather Impacts Expressed Sentiment on Social Media**. *The 16th International AAAI Conference on Web and Social Media, 2022* (**ICWSM'22**). Paper

C3. Alexander J. Bisberg*, Julie Jiang*, Yilei Zeng, Emily Chen, and Emilio Ferrara. **The Gift That Keeps on Giving: Generosity is Contagious in Multiplayer Online Games.** In *Proceedings of the ACM on Human-Computer Interaction (PACM HCI)*, 2022, 6, CSCW2 (**CSCW '22**). Paper arXiv

C2. Julie Jiang, Danaja Maldeniya, Kristina Lerman, and Emilio Ferrara. **The Wide, the Deep, and the Maverick: Types of Players in Team-based Online Games.** In *Proceedings of the ACM on Human-Computer Interaction (PACM HCI)*, 2021, 5, CSCW1 (**CSCW '21**). Paper Video

C1. Yuzi He, Christopher Tran, Julie Jiang, Keith Burghadt, Emilio Ferrara, Elena Zheleva, and Kristina Lerman. **Heterogeneous Effects of Software Patches in a Multiplayer Online Battle Arena Game.** In

Proceedings of The 16th International Conference on the Foundations of Digital Games (**FDG '21**). [Paper](#)

JOURNALS

J4. Emily Chen*, **Julie Jiang***, Ho-Chun Herbert Chang, Goran Murić, and Emilio Ferrara. **Charting the Information and Misinformation Landscape to Characterize Misinfodemics on Social Media: COVID-19 Infodemiology Study at a Planetary Scale.** *JMIR Infodemiology* 2022; 2(1):e32378. [Paper](#)

J3. **Julie Jiang,** Xiang Ren, and Emilio Ferrara. **Social Media Polarization and Echo Chambers in the Context of COVID-19: Case Study.** *JMIRx Med* 2021; 2(3):e29570. [Paper](#)

J2. **Julie Jiang**, Emily Chen, Shen Yan, Kristina Lerman, and Emilio Ferrara. **Political Polarization Drives Online Conversations About COVID-19 in the United States.** *Human Behavior and Emerging Technologies* 2(3), 200—211, 2020. [Paper](#) [cited > 150 times]

J1. **Julie Jiang**, Li-Ping Liu, and Soha Hassoun. **Learning Graph Representations of Biochemical Networks and Its Application to Enzymatic Link Prediction.** *Bioinformatics* 37(6), 793—799, 2021. [Paper](#)

WORKSHOPS

W1. **Julie Jiang**, Emily Chen, Luca Luceri, Goran Murić, Francesco Pierri, Ho-Chun Herbert Chang, and Emilio Ferrara. **What are Your Pronouns? Examining Gender Pronoun Usage on Twitter.** In *Workshop Proceedings of the 17th International AAAI Conference on Web and Social Media* (**ICWSM '23**). [Paper](#)

W2. **Julie Jiang**, Kristina Lerman, and Emilio Ferrara. **Individualized Context-Aware Embeddings for Online Games Predictions.** *20th IEEE International Conference on Data Mining* (**ICDM '20**)*, Workshop on High Dimensional Data Mining.* [Paper](#) [arXiv](#)

PRESENTATIONS

4. **Julie Jiang**, Nils Murrugarra-Llerena, Maarten W. Bos, Yozen Liu, Neil Shah, Leonardo Neves, and Francesco Barbieri. **Sunshine with a Chance of Smiles: Weather Impacts Expressed Sentiment on Social Media**. *2022 International Society for Research on Emotion* (**ISRE**)*,* oral presentation.

3. Emily Chen*, **Julie Jiang***, Fred Morstatter, Kristina Lerman, and Emilio Ferrara. **Ageism in Traffic Policing.** *6th International Conference on Computational Social Science* (**IC2S2**), oral presentation. [Extended Abstract](#)

2. **Julie Jiang**, Li-Ping Liu, and Soha Hassoun. **Enzymatic Link Prediction for Biochemical Route Synthesis.** *2020 MIT AI Powered Drug Discovery and Manufacturing* (**AIDM**). [Poster](#)

1. **Julie Jiang**, Li-Ping Liu, and Soha Hassoun. **Predicting Reactions for Biochemical Networks Using Graph Embeddings.** *2019 Machine Learning in Computational Biology* (**MLCB**), co-located with NeurIPS '19. [Poster](#)

WORK-IN-PROGRESS

- **Julie Jiang**, Ang Li, Aditiya Ponnada, Ben Lacker, Samuel F. Way. **Understanding the Consumption of New Music Releases From the Perspectives of Genres.**

- **Julie Jiang**, Luca Luceri, Joseph B. Walther, Emilio Ferrara. **Socially-Motivated Online Hate Speech.**

- Yulin Yu, **Julie Jiang**, Paramveer Dhillon. **Seeing the Forest for the Trees: Characterizing Online Conversations Structure Across Subreddits.**

- Mireia Triguero Roura, Maarten W. Bos, Francesco Barbieri, **Julie Jiang**, Yozen Liu, and Ron Dotsch. **The Ties that Bound: Online Pictorial Communication Reveals Cultural Boundaries In the World.**

Teaching

USC
Teaching Assistant, **CSCI591** CS Research Colloquium Fall 2022 & Spring 2023

Tufts University
Teaching Fellow (Head TA), **COMP11** Intro to Computer Science Spring 2018, Fall 2018, & Spring 2019
Teaching Assistant, **COMP105** Programming Languages Spring 2018
Teaching Assistant, **COMP15** Data Structures Spring 2017 & Fall 2017
Grader, **MATH32** Calculus I and **MATH34** Calculus II Spring 2017 & Fall 2017
Tutor, **MATH** Calculus Fall 2016 & Spring 2017

Awards

ACM WebSci Student Travel Grant	2023
Snap Research Fellowship ($10,000)	2022
USC Graduate School nomination for the Google PhD Fellowship	2021
USC Viterbi nomination for the Microsoft PhD Fellowship	2021
USC ISI Distinguished Graduate Student Research Fellowship ($5K)	2019—2020
USC Viterbi Travel Grant for Graduate Engineering Preview Day	2019
Tufts Tisch Summer Scholars Fellowship	2018
Tufts University Dean's List (7/8 semesters)	2015—2019

Professional Service

Reviewing
The ACM Web Conference (**TheWebConf**/WWW): 2020, 2021, 2023 (PC)
The ACM Conference on Human Factors in Computing Systems (**CHI**): 2023
The ACM Conference on Computer-Supported Cooperative Work and Social Computing (**CSCW**): 2023
The International AAAI Conference on Web and Social Media (**ICWSM**): 2022, 2023, 2024
The ACM Web Science Conference (**WebSci**): 2020–2023
International Journal of Communication (**IJoC**): 2022
Conference for Truth and Trust Online (**TTO**): 2021
International Conference on Complex Networks (**CompleNet**): 2020
PLOS ONE: 2023

Mentoring
Jinyi Ye (MS @ USC Annenberg): 2023

Admissions
USC Viterbi CS PhD Admissions: 2021, 2022
Tufts Admissions Network: 2020, 2022

Media Coverage

PsyPost 2021. [Segregated communities of polarized Twitter users are shaping online conversations about COVID-19.](#)