

# Serina Chang

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| EDUCATION | <p><b>Stanford University</b>, Stanford, CA 2019-present<br/>Ph.D. candidate, Computer Science<br/>Advised by Prof. Jure Leskovec and Prof. Johan Ugander</p> <p><b>Columbia University</b>, New York, NY 2015-2019<br/>B.A., Computer Science, concentration in Sociology, <i>magna cum laude</i><br/>Advised by Prof. Kathleen McKeown<br/>GPA: 3.97/4.00, Dean's List (all semesters)</p>  |
| HONORS    | <p><b>PhD Fellowship, Computational Social Science</b>, Meta 2022</p> <p><b>Best Paper Award</b>, KDD 2021 (Applied Data Science Track) 2021</p> <p><b>Outstanding Undergraduate Researcher Award</b>, Computing Research Association 2019</p> <p><b>Graduate Research Fellowship</b>, National Science Foundation 2019</p> <p><b>The Finch Family Fellowship</b>, Stanford University, School of Engineering 2019</p> <p><b>Phi Beta Kappa</b>, Columbia University 2019</p> <p><b>Theodore R. Bashkow Award</b>, Columbia University, Computer Science 2019</p> <p><b>Academic Excellence Award</b>, Columbia University, Computer Science 2019</p> <p><b>King's Crown Leadership Award, Innovation and Enhancement</b>, Columbia University 2018</p>   |
| PAPERS    | <p>*indicates co-first authorship.</p> <p>[1] <b>Serina Chang</b>, Adam Fourney, and Eric Horvitz. <a href="#">Accurate measures of vaccination and concerns of vaccine holdouts from web search logs</a>. Under review. Also accepted at IC<sup>2</sup>S<sup>2</sup> 2023 (oral).</p> <p>[2] <b>Serina Chang</b>, Damir Vrabac, Jure Leskovec, and Johan Ugander. <a href="#">Estimating geographic spillover effects of COVID-19 policies from large-scale mobility networks</a>. AAAI 2023. Also presented at KDD 2022 Workshop on Data-driven Humanitarian Mapping (oral) and IC<sup>2</sup>S<sup>2</sup> 2022.</p> <p>[3] Dallas Card, <b>Serina Chang</b>, Chris Becker, Julia Mendelsohn, Rob Voigt, Leah Boustan, Ran Abramitzky, and Dan Jurafsky. <a href="#">Computational analysis of 140 years of US political speeches reveals more positive but increasingly polarized framing of immigration</a>. PNAS, 2022.</p> <p>[4] <b>Serina Chang</b> and Johan Ugander. <a href="#">To recommend or not? A model-based comparison of item-matching processes</a>. ICWSM 2022. Also presented at IC<sup>2</sup>S<sup>2</sup> 2021 (oral).</p> <p>[5] Zakaria Mehrab, Mandy L. Wilson, <b>Serina Chang</b>, Galen Harrison, Bryan L. Lewis, Alex Tellionis, Justin Crowe, Dennis Kim, Scott Spillman, Kate Peters, Jure Leskovec, and Madhav Marathe. <a href="#">Data-driven real-time strategic placement of mobile vaccine distribution sites</a>. AAAI 2022 (IAAI Technical Track on Emerging Applications of AI).</p> <p>[6] <b>Serina Chang</b>, Mandy L. Wilson, Bryan Lewis, Zakaria Mehrab, Komal K. Dudakiya, Emma Pierson, Pang Wei Koh, Jaline Gerardin, Beth Redbird, David Grusky, Madhav Marathe, and Jure Leskovec. <a href="#">Supporting COVID-19 policy response with large-scale mobility-based modeling</a>. KDD 2021 (Applied Data Science Track, <b>Best Paper Award</b>). Oral presentation.</p> <p>[7] <b>Serina Chang</b>*, Emma Pierson*, Pang Wei Koh*, Jaline Gerardin, Beth Redbird, David Grusky, and Jure Leskovec. <a href="#">Mobility network models of COVID-19 explain inequities and inform reopening</a>. <i>Nature</i>, 2021. Also presented at Networks 2021 (oral) and NeurIPS 2020 ML for Health Workshop. Coverage in 380+ news outlets, including The New York Times, The Washington Post, Bloomberg, CNN, Fox Business, Wired, NPR, The Telegraph, MIT Technology Review, and Nature News. Ranked at #7 most online impact among 88,000+ papers ever published by <i>Nature</i> (<a href="#">Altmetric</a>).</p> <p>[8] Kyle Kawagoe*, Mark Rychnovsky*, <b>Serina Chang</b>, Greg Huber, Lucy M. Li, Jonathan Miller, Reuven Pnini, Boris Veytsman, and David Yllanes. <a href="#">Epidemic dynamics in inhomogeneous populations and the role of superspreaders</a>. <i>Physical Review Research</i>, 2021.</p> <p>[9] Maya Josifovska, <b>Serina Chang</b> and Jure Leskovec. The socioeconomic mobility gap: disparities in the COVID-19 pandemic. Extended abstract, IC<sup>2</sup>S<sup>2</sup> 2021.</p> <p>[10] <b>Serina Chang</b> and Kathleen McKeown. <a href="#">Automatically inferring gender associations from language</a>. EMNLP 2019 (short paper). Oral presentation.</p> |

- [11] **Serina Chang**, Ruiqi Zhong, Ethan Adams, Fei-Tzin Lee, Siddharth Varia, Desmond Patton, William Frey, Chris Kedzie, and Kathleen McKeown. [Detecting gang-involved escalation on social media using context](#). EMNLP 2018 (long paper). Oral presentation.
- [12] Jessica Ouyang, **Serina Chang**, and Kathleen McKeown. [Crowd-sourced iterative annotation for narrative summarization corpora](#). EACL 2017 (short paper). Oral presentation.

## WORK EXPERIENCE

- Research Intern**, Microsoft Research 2022-2023
- Advised by Eric Horvitz and Adam Fourney
  - Developed methods using graph ML to detect user intents from search logs and derive insights for public health
- Software Engineering Intern**, Google, Geo Assistant 2018
- Built a new, user-facing feature for Google Search and Assistant
  - Implemented backend to parse queries in Search, worked with UX designer and PM to create frontend
- Engineering Practicum Intern**, Google, Search Site Reliability Engineering (SRE) 2017
- Improved internal tools for monitoring and tracking requests to Google Now

## TEACHING & MENTORSHIP

- Head course assistant (CA)**, Stanford University, Machine Learning with Graphs ([CS224W](#)) 2021
- Managed CA team and class of over 300 students; oversaw lecture slides, assignments, exams, and final projects
  - Course material covers the foundations and state-of-the-art of machine learning with graphs, including representation learning, graph neural networks, reasoning over knowledge graphs, and algorithms for large-scale networks
- Research mentor**, Stanford University 2020-present
- Mentoring PhD and masters students on research projects
  - Mentoring students in Stanford CS undergraduate research program (CURIS)
- Mentor**, Stanford Computer Science, Undergraduate Mentoring Program 2022
- Mentor**, Stanford Engineering, Summer Undergraduate Research Fellowship 2021
- Instructor**, Girls Who Code, Summer Immersion Program 2019
- Served as the primary teacher for a classroom of 20 high school girls
  - Taught a 7-week curriculum including Python, HTML, CSS, JavaScript, and Arduino
- Instructional assistant**, Columbia University, Data Structures in Java (COMS 3134) 2017
- Peer tutor**, Columbia University, Computer Science Theory (COMS 3261) 2017

## INVITED TALKS

- NIH National COVID Cohort Collaborative (N3C), Machine Learning Seminar 2023
- Stanford, Algorithmic Fairness Seminar 2023
- Stanford, Networks (MS&E 135), Guest Lecture 2023
- Meta, Computational Social Science Seminar 2023
- Stanford, Introduction to Computational Social Science (MS&E 231), Guest Lecture 2022
- Stanford, Fundamental Concepts in MS&E (MS&E 302), Guest Lecture 2022
- Cornell Tech, Urban Data (INFO 5430), Guest Lecture 2022
- Stanford, Big Data Methods for Behavioral, Social, and Pop. Health (EPI 270), Guest Lecture 2022
- OECD-ODISSEI Webinar on Open Data Infrastructure 2021
- Stanford, Fundamental Concepts in MS&E (MS&E 302), Guest Lecture 2021
- Data Science Connect Conference 2021
- March for Science Podcast 2021
- PathCheck Global Health Innovators Seminar 2021
- Stanford, Networks (MS&E 135), Guest Lecture 2021
- Cornell Tech, Urban Data (INFO 5430), Guest Lecture 2021
- Stanford, Big Data Methods for Behavioral, Social, and Pop. Health (EPI 270), Guest Lecture 2021
- Diaries of Social Data Research Podcast 2021
- NeurIPS, COVID-19 Symposium 2020
- AI Science Spotlight Series 2020
- Global Pervasive Computational Epidemiology Seminar 2020
- The Octavian Report Podcast 2020
- Placekey Community Seminar 2020
- Stanford, Stats ML Retreat 2020
- Columbia, NLP Seminar 2019
- Columbia, Emerging Scholars Program (COMS 1404), Guest Lecture 2018

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| SERVICE    | <b>Professional committees</b>  |              |
|            | Program Chair, Machine Learning for Health (ML4H)   | 2023         |
|            | Organizer, KDD Full-Day Workshop, Data Science for Social Good  | 2023         |
|            | Faculty Search Committee, Stanford Data Science and School of Engineering   | 2023         |
|            | Organizer, NYC Digital Humanities Week, Using Computation to Analyze Gender in Film   | 2019         |
|            | <b>Journal reviewer</b>   |              |
|            | PLOS ONE  | 2023         |
|            | Nature Human Behaviour  | 2022         |
|            | American Journal of Sociology   | 2021         |
|            | ACM Transactions on Spatial Algorithms and Systems  | 2021         |
|            | npj Urban Sustainability  | 2021         |
|            | <b>Conference reviewer</b>  |              |
|            | EMLNP   | 2023         |
|            | KDD, Epidemiology Meets Data Mining and Knowledge Discovery (epiDAMIK) Workshop   | 2023         |
|            | ACL Rolling Review  | 2023         |
|            | ICWSM   | 2023         |
|            | ACL Rolling Review  | 2022         |
|            | Machine Learning for Health   | 2022         |
|            | ACL, NLP for Positive Impact Workshop   | 2022         |
|            | KDD, Epidemiology Meets Data Mining and Knowledge Discovery (epiDAMIK) Workshop   | 2022         |
|            | ACL-IJCNLP  | 2021         |
|            | Machine Learning for Health   | 2021         |
|            | ACL, NLP for Positive Impact Workshop   | 2021         |
|            | ICLR, AI for Public Health Workshop   | 2021         |
| OUTREACH   | <b>Queer in CS</b> , Stanford University, Organizer   | 2023-present |
|            | ▪ Organize social events to build community between LGBTQ researchers in CS   |              |
|            | <b>Womxn in CS (WiCS)</b> , Columbia University, Academic Chair   | 2016-2019    |
|            | ▪ Founded WiCS Lightning Talks, a series for underrepresented student researchers to share their research   |              |
|            | ▪ Organized panels with faculty and mentorship events with upperclassmen to help students navigate academics in CS  |              |
|            | <b>Lean In at Columbia</b> , Columbia University, Co-President & Senior Advisor   | 2016-2019    |
| ACTIVITIES | ▪ Grew active membership by 5x to reach over 100 committed members attending weekly meetings  |              |
|            | ▪ Founded a mentorship program that connected over 70 student-mentor pairs  |              |
|            | ▪ Organized the first Lean In at CU conference, sponsored by Microsoft, Facebook, IBM, and others   |              |
|            | <b>Intercollegiate Chamber Music Festival (ICMF)</b> , NYC  | 2017-2019    |
|            | ▪ Co-founded with Cindy Liu and Dean Deng, in collaboration with the Chamber Music Society of Lincoln Center  |              |
|            | ▪ ICMF is an annual, weekend-long music festival for collegiate chamber musicians; events include a performers' showcase at Lincoln Center, masterclasses with world-renowned artists, and talks with industry leaders                        |              |
|            | <b>Music Performance Program (MPP)</b> , Columbia University  | 2015-2019    |
|            | ▪ Took lessons in chamber music and piano   |              |
|            | ▪ Selected 3 times to perform in MPP's end-of-year concert at Carnegie Weill Hall   |              |
|            | <b>Precollege Program</b> , Manhattan School of Music (MSM)   | 2003-2015    |
|            | ▪ Took lessons in piano, violin, chamber music, orchestra, music theory, and ear training   |              |
|            | ▪ Recipient of the Rosetta Goodkind Scholarship and the Ralph Zola Scholarship  |              |
|            | ▪ Multi-time winner of MSM's concerto and chamber music competitions  |              |
|            | ▪ Featured on NPR's <i>From The Top</i> ; recipient of the National YoungArts Merit Award; winner of international piano competitions including American Protégé, American Fine Arts Festival, and New York International Artists Association |              |