

David Mingfei Liu

Contact Information

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Education

Northeastern University (2020 - 2025 *Expected*)
Ph.D. Candidate, Computer Science
Khoury College of Computer Sciences and Network Science Institute
Advisor: Professor Tina Eliassi-Rad

Princeton University (2018)
B.S.E in Computer Science with Certificate in Statistics and Machine Learning
summa cum laude

Publications

David Liu, Virginie Do, Nicolas Usunier, Maximilian Nickel. 2023. Group Fairness Without Demographics Using Social Networks. In *2023 ACM Conference on Fairness, Accountability, and Transparency (FAccT '23)*. [\[pdf\]](#)

David Liu and Tina Eliassi-Rad. 2023. Identifying and Mitigating Instability in Embeddings of the Degenerate Core. In *Proceedings of the 2023 SIAM Data Mining Conference (SDM)*. [\[pdf\]](#)

Agapi Rissaki*, Bruno Scarone*, **David Liu**, Aditeya Pandey, Brennan Klein, Tina Eliassi-Rad, and Michelle A. Borkin. 2022. BiaScope: Visual Unfairness Diagnosis for Graph Embeddings. *Symposium on Visualization in Data Science at IEEE VIS (VDS '22)*. [\[pdf\]](#)

David Liu*, Priyanka Nanayakkara*, Sarah Sakha, Grace Abuhamad, Su Lin Blodgett, Nicholas Diakopoulos, Jessica Hullman, and Tina Eliassi-Rad. 2022. Examining Responsibility and Deliberation in AI Impact Statements and Ethics Reviews. In *Proceedings of the 2022 AAAI/ACM Conference on AI, Ethics, and Society (AIES '22)*. [\[pdf\]](#)

David Liu, Zohair Shafi, William Fleisher, Tina Eliassi-Rad, and Scott Alfeld. 2021. RAWLSNET: Altering Bayesian Networks to Encode Rawlsian Fair Equality of Opportunity. In *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society (AIES '21)*. [\[pdf\]](#)

David Liu and Matthew J. Salganik. Successes and struggles with computational reproducibility: Lessons from the fragile families challenge. *Socius*, 5:1–21, 2019. [\[pdf\]](#)

Preprints

David Liu, Arjun Seshadri, Tina Eliassi-Rad, Johan Ugander. 2024. Re-visiting Skip-Gram Negative Sampling: Dimension Regularization for More Efficient Dissimilarity Preservation in Graph Embeddings. [\[pdf\]](#)

	<p>David Liu, Jackie Baek, and Tina Eliassi-Rad. 2023. When Collaborative Filtering is not Collaborative: Unfairness of PCA for Recommendations. [pdf]</p>	
Public Scholarship	<p>Cynthia Conti-Cook, Roya Pakzad, Sarah Ariyan Sakha, and David Liu. 2023. A Guiding Framework for Vetting Technology Vendors Operating in the Public Sector. A research report by the Ford Foundation. [link].</p>	
	<p>David Liu and Sarah Sakha. Power: The exclusionary costs of large-scale computing. In <i>A New AI Lexicon</i> by The AI Now Institute. [link]</p>	
Tutorials	<p>2023 ACM Conference on Fairness, Accountability, and Transparency (FAccT '23): Translation/Dialogue Tutorial: A Guiding Framework for Vetting Technology Vendors Operating in the Public Sector (with Cynthia Conti-Cook, Roya Pakzad, and Sarah Ariyan Sakha), Chicago, IL, June 2023.</p>	
Posters	<p>David Liu. Disaggregating bike-share mobility data to measure urban segregation over time. <i>The 9th International Conference on Computational Social Science (IC2S2)</i>, Copenhagen, Denmark, July 2023.</p>	
	<p>David Liu and Tina Eliassi-Rad. Increasing the Stability of Embeddings of the Degenerate Core. <i>The 2022 International Conference on Network Science (NetSci)</i>, Virtual Conference, July 2022. (oral presentation)</p>	
	<p>David Liu. Uncovering the Evolution of Mukbang Videos on Youtube. <i>The 7th International Conference on Computational Social Science (IC2S2)</i>, Virtual Conference, July 2021.</p>	
	<p>David Liu. Uncovering the Evolution of Mukbang Videos on Youtube. <i>Networks 2021: A Joint Sunbelt and NetSci Conference</i>, Virtual Conference, July 2021. (poster presentation)</p>	
Professional Experience	Meta	May 2024 - Aug 2024
	<i>Research Scientist Intern</i> Graph Science and Statistics Research Team	
	University of California, Berkeley	Fall 2022
	<i>Visiting Graduate Student</i> Simons Institute Program on “Graph Limits and Processes on Networks: From Epidemics to Misinformation”	
	Meta AI (FAIR)	May 2022 - Aug 2022
	<i>AI Research Intern</i> Supervisor: Maximilian Nickel	
	Taraaz	Feb 2022 - Aug 2022, Oct 2023 - Dec 2023
	<i>Researcher</i>	
	Bloomberg LP	Jul 2018 - Sep 2020
	<i>Software Engineer</i>	
	The New York Times	Jun 2017 - Aug 2017
	<i>Software Intern</i>	

Teaching	DS 4400: Machine Learning and Data Mining I Northeastern University - <i>Instructor of Record</i> 4 credits, 86 undergraduate students, syllabus	Spring 2024
Awards and Honors	2023 SDM Doctoral Forum and Travel Award 2021 NSF Graduate Research Fellowship (GRFP) 2018 Sigma Xi Nomination	
Activities	2021 Subtle CSCW Traits: Tensions around Identity Formation and Online Activism in the Asian Diaspora, workshop participant. 2020 ML Reproducibility Challenge, participant.	
Invited Talks	2024 MSR New England ML Ideas Seminar, Invited Speaker. Cambridge, MA. 2021 MD4SG Working Group on Discrimination in Algorithmic Decision-making, Invited Speaker. Online. 2019 RabbitMQ Summit, Keynote Speaker. <i>Growing a farm of rabbits to scale financial applications</i> . London, UK. 2016 Fragile Families Challenge Scientific Workshop, Invited Speaker. Princeton, NJ.	
Academic Service	KDD '24 Program Committee ICLR '23 Program Committee AIES '21 - 24 Program Committee FAccT '23 - 24 Program Committee The Web '24 Program Committee NeurIPS '21 Student Volunteer	