Tara Safavi

Email: tsafavi@umich.edu
Phone: +1-630-809-5732
Website: tsafavi.github.io

Education

PhD in Computer Science, *University of Michigan Ann Arbor*   *2017–2022*
— Research adviser: Danai Koutra

BS in Computer Science, *University of Michigan Ann Arbor*   *2013–2017*
— Graduated with Highest Distinction and High Honors

Research interests

Relational learning and reasoning, knowledge representations, graph-based machine learning

Awards and honors

Rackham Predoctoral Fellowship, *University of Michigan*	*2021–2022*
Outstanding Reviewer Award, *EMNLP*	*Dec 2020*
Best Student Paper Award, *IEEE ICDM*	*Nov 2019*
NSF Graduate Research Fellowship	*2018–2021*
Best paper nominee, *IEEE ICDM*	*Nov 2017*
Rackham Dean's and Named Fellowship, *University of Michigan*	*2017–2018*
Women Techmakers Scholarship, *Google*	*April 2017*
Outstanding Research Award, *University of Michigan CSE Department*	*March 2017*
Marian Sarah Parker Prize, *University of Michigan College of Engineering*	*March 2017*
Stamps Leadership Scholarship, *University of Michigan*	*2013–2017*

Publications

Preprints and articles in peer-reviewed (nonarchival) workshops

[2] *Relational World Knowledge Representation in Contextual Language Models: A Review*
T. Safavi, D. Koutra
Preprint – arXiv, 2021

[1] *Generating Negative Commonsense Knowledge*
T. Safavi, D. Koutra
NeurIPS KR2ML20 – NeurIPS Knowledge Representation + Machine Learning Workshop, 2020

Articles in peer-reviewed conference proceedings

[9] *CoDEx: A Comprehensive Knowledge Graph Completion Benchmark*
T. Safavi, D. Koutra
EMNLP – The 2020 Conference on Empirical Methods in Natural Language Processing, 2020
Full paper, acceptance rate 24.6%

[8] *Evaluating the Calibration of Knowledge Graph Embeddings for Trustworthy Link Prediction*
T. Safavi, D. Koutra, E. Meij
EMNLP – The 2020 Conference on Empirical Methods in Natural Language Processing, 2020
Full paper, acceptance rate 24.6%

[7] *Toward Activity Discovery in the Personal Web*
T. Safavi, A. Fourney, R. Sim, M. Juraszek, S. Williams, N. Friend, D. Koutra, P. N. Bennett
WSDM – ACM International Conference on Web Search and Data Mining, 2020
Full paper + oral presentation, acceptance rate 15%

[6] *Distribution of Node Embeddings as Multiresolution Features for Graphs*
M. Heimann, T. Safavi, D. Koutra
ICDM – IEEE International Conference on Data Mining, 2019
Full paper + oral presentation, acceptance rate 9%
Best student paper award

[5] *Personalized Knowledge Graph Summarization: From the Cloud to Your Pocket*
T. Safavi, C. Belth, L. Faber, D. Mottin, E. Müller, D. Koutra
ICDM – IEEE International Conference on Data Mining, 2019
Full paper + oral presentation, acceptance rate 9%

[4] *Smart Roles: Inferring Professional Roles in Email Networks*
D. Jin*, M. Heimann*, T. Safavi, M. Wang, W. Lee, L. Snider, D. Koutra
KDD – ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2019
Full paper + poster presentation, acceptance rate 20%

[3] *REGAL: Representation Learning-based Graph Alignment*
M. Heimann, H. Shen, T. Safavi, D. Koutra
CIKM – ACM International Conference on Information and Knowledge Management, 2018
Full paper + oral presentation, acceptance rate 17%

[2] *Career Transitions and Trajectories: A Case Study in Computing*
T. Safavi, M. Davoodi, D. Koutra
KDD – ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2018
Full paper + poster presentation, acceptance rate 22%

[1] *Scalable Hashing-Based Network Discovery*
T. Safavi, C. Sripada, D. Koutra
ICDM – IEEE International Conference on Data Mining, 2017
Full paper + oral presentation, acceptance rate 9%
Best paper nominee

Articles in peer-reviewed journals and book chapters

[4] *"Network Summarization"*
D. Koutra, T. Safavi, Y. Liu, A. Dighe
Social Media Analytics: Advances and Applications – CRC Press (in press), 2019

[3] *Fast Network Discovery on Sequence Data via Time-Aware Hashing*
T. Safavi, C. Sripada, D. Koutra
KAIS – Knowledge and Information Systems, 2018
Invited from ICDM 2017

[2] *Graph Summarization Methods and Applications: A Survey*
Y. Liu*, T. Safavi*, A. Dighe, D. Koutra – (*equal contribution*)
CSUR – ACM Computing Surveys, 2018

[1] *Reducing Large Graphs to Small Supergraphs: A Unified Approach*
Y. Liu, T. Safavi, N. Shah, D. Koutra
SNAM – Social Network Analysis and Mining, 2018

Industry experience

Research Intern, *Allen Institute for Artificial Intelligence, Seattle, WA (remote)*   *Sep–Nov 2021*
— Mentors: Tom Hope, Doug Downey

Research Intern, *Microsoft Research, Redmond, WA (remote)*   *May–Aug 2021*
— Mentor: Tobias Schnabel

Research Intern, *Bloomberg, London, UK*   *Sep–Dec 2019*
— Mentor: Edgar Meij
— One paper at EMNLP 2020

Research Intern, *Microsoft Research, Redmond, WA*   *May–Aug 2019*
— Mentors: Adam Fourney, Robert Sim, Marcin Juraszek
— One paper at WSDM 2020 + one patent pending

Engineering Intern, *Google, Sunnyvale, CA*   *May–Aug 2017*
— Mentor: Xiang Wang
— One patent pending

Invited talks

Toward activity discovery in the personal web
— PHKG Workshop, The Knowledge Graph Conference, May 2021 (remote talk)

CoDEx: A comprehensive knowledge graph completion benchmark
— Connected Data London, London, UK, April 2021 (remote talk)

Toward activity discovery in the personal web
— Microsoft MSAI, London, UK, Oct 2019

Mining and learning over richly attributed, heterogeneous graphs
— Bloomberg, London, UK, Sept 2019

Improving network-based tasks with interpretable and latent representations
— Microsoft Research, Redmond, WA, Dec 2018

Scalable inference of networks from time series data
— Google, Sunnyvale, CA, June 2017
— University of Michigan Discrete Math (EECS 203), April 2017

Invited workshops

Microsoft Research AI Breakthroughs, *Redmond, WA (remote)*   *September 2020*
CRA-W Grad Cohort, *San Francisco, CA*   *April 2018*

Academic service

Reviewing
ACL 2021, EMNLP 2020, ACL 2020, ICANN 2019, ICDM demos 2018, TKDD

Workshop organizer
— KG-BIAS 2020: 1st Workshop on Bias in Automatic Knowledge Graph Construction at AKBC 2020

Outreach

Peer mentoring, *Ann Arbor, MI*   *Sept 2018—*
Mentored students in applying for the NSF GRFP and other fellowships

Girls Encoded, *Ann Arbor, MI*   *April 2018–2019*
Developed and taught a middle-school computing program

Explore Graduate Studies Symposium, *Ann Arbor, MI*   *Sept 2017, 2018*
Student panel and one-on-one writing feedback for prospective CSE graduate students

Ensemble of CSE Ladies (ECSEL), *Ann Arbor, MI*   *Jan–July 2018*
Board member of the ECSEL group for graduate CSE women

Seven Mile Coding, *Detroit, MI* *April 2017–Jan 2018*
Board member of the Seven Mile Coding initiative in Brightmoor, Detroit
Girls Who Code, *Ann Arbor, MI* *Jan 2016–April 2017*
Co-founder of the U-M Women in Science and Engineering (WISE) Girls Who Code club