

Tara Safavi

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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

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 PhD fellowship 2017–2018

Full first-year PhD fellowship from the University of Michigan

Google Women Techmakers Scholarship April 2017

Formerly known as the Google Anita Borg scholarship, awarded to 20 women nationwide

University of Michigan Outstanding Research Award March 2017

Awarded to a computer science undergraduate for research with a faculty member

University of Michigan Marian Sarah Parker Prize March 2017

Awarded to an outstanding woman undergraduate in the College of Engineering

Stamps Leadership Scholarship 2013–2017

National scholarship administered by the Stamps Family Charitable Foundation: Four-year funding & stipend awarded to 18 incoming University of Michigan undergraduates

Publications

Articles in peer-reviewed (nonarchival) workshops

- [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, *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

— 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*

September 2020

CRA-W Grad Cohort, *San Francisco, CA*

April 2018

Academic service

Reviewing

NAACL 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

Teaching

EECS 280, *Programming and Introductory Data Structures*
Undergraduate TA

Jan–April 2017

EECS 490, *Programming Languages*
Undergraduate TA, first offering of course

Sept–Dec 2016

EECS 183, *Elementary Programming Concepts*
Undergraduate TA

Jan–Dec 2015