

# June Zhang

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## EDUCATION

**Carnegie Mellon University**, Pittsburgh, Pennsylvania, USA

Doctor of Philosophy (Ph.D.) in Electrical and Computer Engineering Aug 2010 – Dec 2015

- Thesis: Network Process: How Topology Impacts the Dynamics of Epidemics and Cascading Failures
- Adviser: José M.F. Moura
- Research areas: Network science, complex systems, stochastic process, signal processing

**Stanford University**, Stanford, California, USA

Master of Science (M.S.) in Electrical Engineering Sep 2005 – Jun 2008

**Georgia Institute of Technology**, Atlanta, Georgia, USA

Bachelor of Science (B.S.) in Electrical and Computer Engineering Aug 2001 – May 2005

- Graduated Summa Cum Laude

## EXPERIENCE

**University of Hawai'i at Mānoa**

Associate Professor, Electrical Engineering Department Jan 2017 – current

**Centers for Disease Control and Prevention (CDC)**

ORISE Research Fellow, Division of Viral Hepatitis Feb 2016 – Dec 2016

## GRANTS

**Current**

(co-PI) NSF AI Institute in Dynamic Systems Oct 2021 – Sep 2026

(co-PI) NSF Research Traineeship (NRT) Program Aug 2023 – Jul 2028

**Completed**

(PI) DARPA: GroundTruth TA2 Proposal Feb 2018 – Aug 2020

(PI) DARPA: Studying the Spread of Fake News with Population Genetic Models via Longitudinal Data  
May 2019 – May 2021

(PI) NSF CSoI Seed Grant: Dynamics and inference in stochastic models of epidemics on networks  
Aug 2017 – Jul 2018

(co-PI) NSF: CIF:Small: Coding and Description Length Analysis for Graph-based Data Oct 2019 –  
Sep 2022

(co-PI) NIH: Novel Disease Electrocardiogram Jul 2022 – Jun 2024

## PUBLICATIONS

**JOURNALS**

- 10) M. Zaeri, M. Abolfazli, A. Høst-Madsen, J. Zhang, and A. Bratincsak, “Out-of-Distribution Detection using Minimum Description Length (MDL),” *in preparation*.
- 9) M. Abolfazli, J. Zhang, A. Høst-Madsen “Structure Learning of Bayesian Networks using Graph Compression,” *in preparation*.
- 8) H. Zhang, J. Zhang, “Contrastive Koopman Neural Network,” *in preparation*.
- 7) M. Abolfazli, A. Høst-Madsen, J. Zhang, and A. Bratincsak, “Gaussian Graphical Model Selection Using Graph Compression,” *ACM Transactions on Probabilistic Machine Learning*, Apr 2025.
- 6) A. C. Schmidt et al., “Searching for Explanations: Testing Social Scientific Methods in Synthetic Ground-Truthed Worlds,” *Computational and Mathematical Organization Theory*, Jan 2022.
- 5) J. Zhang, J.M.F. Moura, “Cascading edge failures: a dynamic network process,” *IEEE Transactions on Network Science and Engineering*, vol. 5, no. 4, pp. 288-300, Oct 2018.
- 4) D.S. Campo, J. Zhang, S. Ramachandran, Y. Khudyakov, “Transmissibility of intra-host hepatitis C virus variants,” *BMC Genomics*, vol. 18, no. 10, pp. 881, Dec 2017.

- 3) J. Zhang, J.M.F. Moura, "Contact process with exogenous infection and the scaled SIS process," *Journal of Complex Networks*, vol. 5, no. 5, pp. 712–733, Oct 2017.
- 2) J. Zhang, J.M.F. Moura, "Roles of subgraphs in network epidemics under the scaled SIS process," *Journal of Complex Networks*, vol. 3, no. 4, pp. 330–352, Mar 2015.
- 1) J. Zhang, J.M.F. Moura, "Diffusion in social networks as SIS epidemics: beyond full mixing and complete graphs," *IEEE Journal of Selected Topics Signal Processing on Social Networks*, vol. 12, no. 4, pp. 330–352, Jun 2014.

#### CONFERENCES & WORKSHOPS

- 21) H. Zhang, X. Zhao, I. Molybog, J. Zhang, "REAL: Response Embedding-based Alignment for LLMs," in *Proc. of the 34th International Joint Conference on Artificial Intelligence (IJCAI)*, Montreal, Canada, Aug 2025.
- 20) H. Zhang, X. Gao, J. Zhang, L. Lai, "mRNA2vec: mRNA Embedding with Language Model in the 5' UTR-CDS for mRNA Design," in *Proc. of the 39th Annual AAAI Conference on Artificial Intelligence*, Philadelphia, Pennsylvania, Feb 2025.
- 19) M. Abolfazli, M. Z. Amirani, A. Høst-Madsen, J. Zhang and A. Bratincsak, "Out-of-Distribution Detection Using Maximum Entropy Coding and Generative Networks," in *Proc. of the 2024 International Symposium on Information Theory and Its Applications (ISITA)*, Taipei, Taiwan, Nov 2024.
- 18) H. Zhang, J. Zhang, and I. Molybog, "HaSa: Hardness and Structure-Aware Contrastive Knowledge Graph Embedding," in *Proc. of the ACM Web Conference 2024 (WWW)*, Singapore, Singapore, May 2024 (25% acceptance rate).
- 17) M. Abolfazli, A. Høst-Madsen, J. Zhang, and A. Bratincsak, "Graph Coding for Model Selection and Anomaly Detection in Gaussian Graphical Models," in *Proc. of the IEEE International Symposium on Information Theory 2021 (ISIT)*.
- 16) M. Abolfazli, A. Høst-Madsen, and J. Zhang, "Differential Description Length for Hyperparameter Selection in Supervised Learning," in *Proc. of the International Symposium on Information Theory and Its Applications 2020 (ISITA)*.
- 15) M. Abolfazli, J. Zhang, and A. Kuh, "User Empathy in Smart Energy Management," in *Proc. of the IEEE Power & Energy Society General Meeting 2019 (PESGM)*, Atlanta, Georgia, Aug 2019.
- 14) A. Høst-Madsen, J. Zhang, "Coding of graphs with application to graph anomaly detection," in *Proc. of the 2018 IEEE International Symposium on Information Theory (ISIT)*, Vail, Colorado, Jun 2018.
- 13) C. Wu, W. Chen, J. Zhang, "Greedy Algorithm with Approximation Ratio for Sampling Noisy Graph Signals," in *Proc. of the 43rd International Conferences on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Canada, Apr 2018.
- 12) J. Zhang, J.M.F. Moura, "Who is more at risk in heterogeneous networks?," in *Proc. of the 43rd International Conferences on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Canada, Apr 2018.
- 11) J. Zhang, J.M.F. Moura, "Spectral radius and network processes with spontaneous infection/failure rate," in *Proc. of the 4th Global Conference on Signal and Information Processing (GlobalSIP)*, Washington DC, USA, Dec 2016.
- 10) J. Zhang, J.M.F. Moura, "Finding unique dense communities," in *Proc. of the 41st International Conferences on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, Mar 2016.
- 9) J. Mohammadi, J. Zhang, S. Kar, G. Hug, J.M.F. Moura, "Multilevel distributed approach for DC optimal power flow," in *Proc. of the 3rd IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Orlando, USA, Dec 2015.

- 8) J. Zhang, J.M.F. Moura, "Individual vs. network preferences," in *Proc. of the 49<sup>th</sup> Asilomar Conference on Signals, Systems and Computers (Asilomar)*, Orange Grove, USA, Nov 2015.
- 7) J. Zhang, J.M.F. Moura, "Dynamic bond percolation in networks," in *Proc. of the 2<sup>nd</sup> IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, Atlanta, USA, Dec 2014.
- 6) J. Zhang, J.M.F. Moura, "Subgraph density and epidemics over networks," in *Proc. of the 39<sup>th</sup> International Conferences on Acoustics, Speech, and Signal Processing (ICASSP)*, Florence, Italy, May 2014.
- 5) J. Zhang, J.M.F. Moura, "Threshold behavior of epidemics in regular networks," in *Proc. of the 38<sup>th</sup> International Conferences on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, CA, May 2013.
- 4) J. Zhang, J.M.F. Moura, "Epidemic process on fixed networks," in *1st IEEE/ACM Workshop on Signal Processing Advancement in Sensor Networks*, Philadelphia, CA, May 2013.
- 3) J. Zhang, J.M.F. Moura, "Accounting for topology in spreading contagion in non-complete networks," in *37<sup>th</sup> Proc. of the IEEE International Conferences on Acoustics, Speech, and Signal Processing (ICASSP)*, Kyoto, Japan, Mar 2012.
- 2) J. Zhang, "LightCast: a tangible user interface creativity support tool for visual design," in *Proc. of 2006 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, Orange County, USA, Mar 2006.
- 1) K U-Yen, M. Ahn, J. Zhang, J.S. Kenney, "Effects of microwave switch isolation on a butler matrix beamforming network in smart antenna systems," in *Proc. of Radio and Wireless Conference (RAW)*, Atlanta, USA, Mar 2004.