June Zhang

zjz@hawaii.edu • +1 (678) 899-2492 • http://junezhang.net (ORCID: 0000-0002-4578-5759)

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

Assistant 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: CIF:Small: Coding and Description Length Analysis for Graph-based Data ($487,106) Oct 2019 – Sep 2022

(co-PI) NSF AI Institute in Dynamic Systems ($599,998) — Oct 2021 – Sep 2026

(co-PI) NIH: Novel Disease Electrocardiogram ($30,000) — Jul 2022 – 2024

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

Completed

(PI) DARPA: GroundTruth TA2 Proposal ($182,277) — Feb 2018 – Aug 2020

(PI) DARPA: Studying the Spread of Fake News with Population Genetic Models via Longitudinal Data ($125,406) — May 2019 – May 2021

(PI) NSF CSoI Seed Grant: Dynamics and inference in stochas- tic models of epidemics on networks ($161,855) — Aug 2017 – Jul 2018

(co-PI) NSF:Phase II IUCRC University of Hawaii: Center for Electromagnetic Compatibility (CEMC) ($200,064) — Aug 2017 – Jul 2018

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) S.A. Fatemi, J. Zhang, "Estimating Dynamics Parameters of Contact and Reversible Contact Process using Holding Times," *in preparation*.

7) M. Abolfazli, A. Høst-Madsen, J. Zhang, and A. Bratincsak, "Graph Graphical Model Selection using Graph Coding," *submitted for publication*.

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

19) M. Abolfazli, M. Zaeri, A. Høst-Madsen, J. Zhang, and A. Bratincsak, "Group Anomaly Detection using Minimum Description Length," *submitted*

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 49th 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 2nd 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 39th 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 38th 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 *37th 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.

COURSES

EE 342: Probability and Statistics	Fall 2019, 2020, 2022
EE 415: Digital Signal Processing	Fall 2017, 2018, 2021
EE 445: Machine Learning	Spring 2018, 2022
EE 615: Statistical Signal Processing	Spring 2019, 2020, 2023
EE 693D: Special Topics in Graph Signal Processing	Spring 2017
EE 693B: Special Topics in Monte Carlo Analysis	Spring 2022

INVITED TALKS

Graph Signal Processing workshop,	2017
Heriot-Watt University seminar	2017
United Technologies Research Center Ireland	2017
APSIPA (Asian-Pacific Signal and Information Processing Annual Summit and Conference)	2018
AMS Spring Central and Western Joint Sectional	2019
8th Workshop on Computational Advances in Molecular Epidemiology (CAME)	2019

ADVISING

Mojtaba Abolfazli (ECE Ph.D. Student) Fall 2017
Project: Lossless graph coding and model selection

Honggen Zhang (ECE Ph.D. Student) Fall 2019
Project: Contrastive learning for knowledge graph embedding and dynamical systems

Joseph Chong (ECE M.S. Student) Graduated Summer 2018
Project: Estimate second large eigenvalue of transition probability matrix

Michael Rodriguez (ECE M.S. Student) Graduated Fall 2019
Project: Model Twitter dynamic using epidemics process

Beemnet Alemayehu (ECE Non-thesis M.S. Student) Graduated Spring 2022

Kale Beever-Riordon (ECE Non-thesis M.S. Student) Graduated Fall 2022

Nicolas Atkins, Johnathan Hollis, Johan Kaye, Kristine Locquiao, Wei Yang (ECE Undergraduate Students) Fall 2023
VIP Project: Energy and Sustainability Using Matlab to analyze building energy usage on campus and solar generation capacity