Sadamori Kojaku

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Email: skojaku@iu.edu **GitHub**: https://github.com/skojaku/ **Homepage**: https://skojaku.github.io/
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RESEARCH INTERESTS

Methods and Applications: Network Science; Machine learning; Statistical inference
Data: Scientific knowledge; Social interactions; Natural language

ACADEMIC POSITION

Postdoctral Research Fellow 02/2020–present
School of Informatics, Computing and Engineering, Indiana University Bloomington, USA

Specially Appointed Professor (Postdoc) 04/2019–01/2020
Research Institute for Economics and Business Administration Kobe University, Japan

Research Associate 04/2016–03/2019
Department of Engineering Mathematics, University of Bristol Bristol, UK.

INDUSTRY

Internship. IBM Research, Tokyo. Yamato, Kanagawa, Japan. 01/2011–03/2011

EDUCATION

Ph.D. Computer Science, *Hokkaido University, Japan* 09/2015
Thesis supervisor: Prof. Mineichi Kudo

MS. System Engineering, *Hokkaido University, Japan* 03/2012
Thesis supervisor: Prof. Hajime Igarashi

B.S. System Engineering, *Hokkaido University, Japan* 03/2010
Thesis supervisor: Prof. Hajime Igarashi

GOOGLE SCHOLAR

https://scholar.google.com/citations?hl=en&user=IyWt4R4AAAAJ

MANUSCRIPTS UNDER REVIEW

[A1] Dakota Murray, Jisung Yoon, Sadamori Kojaku, Rodrigo Costas, Woo-Sung Jung, Staša Milojević, and Yong-Yeol Ahn. Unsupervised embedding of trajectories captures the latent structure of mobility. *Preprint arXiv*, 2012.02785, 2020

PUBLICATIONS (REFEREED)

[B1] Sadamori Kojaku, Jisung Yoon, Isabel Constantino, and Yong-Yeol Ahn. Residual2Vec: Debiasing graph embedding with random graphs. NeurIPS, 2021 (acceptance rate 26%).

[B2] Sadamori Kojaku, Giacomo Livan, and Naoki Masuda.
Detecting anomalous citation groups in journal networks.
Scientific Reports, 11, 14524, 2021 (2-year IF: 3.998)

[B3] Sadamori Kojaku, Laurent Hébert-Dufresne, Enys Mones, Sune Lehmann, and Yong-Yeol Ahn.
The effectiveness of backward contact tracing in networks.
Nature Physics, 1745-2481, 2021 (2-year IF: 19.256)

[B4] Sadamori Kojaku and Naoki Masuda.
Constructing networks by filtering correlation matrices: A null model approach.
Proceedings of the Royal Society A, 475, 2231, 2019 (2-year IF: 2.741)

[B5] Sadamori Kojaku, Mengqiao Xu, Haoxiang Xia, and Naoki Masuda.
Multiscale core-periphery structure in a global liner shipping network.
Scientific Reports, 9, 404, 2019 (2-year IF: 3.998)

[B6] Sadamori Kojaku, Giulio Cimini, Guido Caldarelli, and Naoki Masuda.
Structural changes in the interbank market across the financial crisis from multiple core-periphery analysis.
Journal of Network Theory in Finance, 4, 33-51, 2018

[B7] Naoki Masuda, Sadamori Kojaku, and Yukie Sano.
A configuration model for correlation matrices.
Physical Review E, 98, 012312, 2018 (2-year IF: 2.296)

[B8] Sadamori Kojaku and Naoki Masuda.
A generalised significance test for individual communities in networks.
Scientific Reports, 8, 7351, 2018 (2-year IF: 3.998)

[B9] Sadamori Kojaku and Naoki Masuda.
Core-periphery structure requires something else in the network.
New Journal of Physics, 20, 043012, 2018 (2-year IF: 3.539)

[B10] Sadamori Kojaku and Naoki Masuda.
Finding multiple core-periphery pairs in networks.
Physical Review E, 96, 052313, 2017 (2-year IF: 2.296)

[B11] Sadamori Kojaku, Ichigaku Takigawa, Mineichi Kudo, and Hideyuki Imai.
Dense core model for cohesive subgraph discovery. Social Networks.
Social Networks, 44, 143-152, 2016 (2-year IF: 2.376)

[B12] Sadamori Koujaku, Mineichi Kudo, Ichigaku Takigawa, and Hideyuki Imai.
Community change detection in dynamic networks in noisy environment.
24th International Conference on World Wide Web. Florence, Italy, May 18 - 22 (2015)

[B13] Sadamori Koujaku, Mineichi Kudo, Ichigaku Takigawa, and Hideyuki Imai.
Structual change point detection for social networks.
The World Congress on Engineering. London, the United Kingdom, July 3-5 (2013)

[B14] 幸若完壮, 渡辺浩太, 五十嵐一

合理的な忘却型Profit Sharing強化学習法.
電気学会論文誌C (電子・情報・システム部門誌), 3, 448-454, 2012

[B15] Sadamori Koujaku, Kota Watanabe, and Hajime Igarashi.
Adaptive profit sharing reinforcement learning for dynamic environment.
10th International Conference on Machine Learning and Applications and Workshops. Hawaii, the United States (2011)

COMMENTARY

[C1] 幸若完壮
埋め込み法が拓くネットワーク科学の新展開.
特集号「複雑ネットワーク研究の最前線」システム制御情報学会論文誌, 65, 5, 185-191 (2021)

ORAL PRESENTATION (REFEREED)

[D1] *[1]Sadamori Kojaku, Laurent Hébert-Dufresne, Enys Mones, Sune Lehmann, and Yong-Yeol Ahn. The effectiveness of backward contact tracing in networks. NetSci. Virtual, 05-10 July (2021).

[D2] *Sadamori Kojaku, Jisung Yoon, and Yong-Yeol Ahn. Residual2Vec: A null model approach for graph embedding. NetSci. Virtual, 05-10 July (2021).

[D3] Dakota Murray, *Jisung Yoon, Sadamori Kojaku, Rodrigo Costas, Woo-Sung Jung, Staša Milojević, and Yong-Yeol Ahn. Unsupervised embedding of trajectories captures the latent structure of mobility. NetSci. Virtual, 05-10 July (2021).

[D4] *Sadamori Kojaku, Attila Varga, Xiaoran Yan, Filipi N. Silva, Staša Milojević, Alessandro Flammini, and Yong-Yeol Ahn. The landscape of the COVID-19 research: A neural embedding approach. Netsci. Rome, Italy, 17-25 September (2020).

[D5] *Sadamori Kojaku, Giacomo Livan, and Naoki Masuda. Detecting citation cartels in journal networks. Netsci. Rome, Italy, 17-25 September (2020)

[D6] *Sadamori Kojaku, Giulio Cimini, Guido Caldarelli, and Naoki Masuda. Structural changes in the interbank market across the financial crisis from multiple core-periphery analysis. Netsci. Vermont, U.S., May 26-31 (2019)

[D7] *Xia Cui, Sadamori Kojaku, Naoki Masuda, and Danushka Bollegala. Solving feature spareness in text classification using core-periphery decomposition. In Proceedings of the 7th Joint Conference on Lexical and Computational Semantics, 225-264 (ACL, New Orleans, USA, 2018)

[D8] *Sadamori Kojaku and Naoki Masuda. Core-periphery structure in degree-heterogeneous networks. Netsci-X. Hangzhou, China (2018)

[D9] *Sadamori Kojaku and Naoki Masuda. Finding multiple core-periphery structure with random walks. 5th International Workshop on Complex Networks and their Applications. Milan, Italy November 30-December 2 (2016)

[1] * refers to the presenter

[D10] *Keigo Kimura, Mineichi Kudo, Lu Sun, and Sadamori Kojaku. Fast random k-labelsets for large-scale multi-label classification. 23rd International Conference on Pattern Recognition. Cancun, Mexico December 4-8 (2016)

POSTER PRESENTATION (REFEREED)

[E1] *Sadamori Kojaku and Naoki Masuda. Constructing networks from correlation matrices: An application to economical data. Threshold Networks. Nottingham 22-24 July (2019)

[E2] *Sadamori Kojaku and Naoki Masuda. A generalised significance test for individual communities in networks. Netsci. Paris, France, June 11–15 (2018)

[E3] *Sadamori Kojaku and Naoki Masuda. Multi-scale organisation of core-periphery structure in networks. 1st Latin American Conference on Complex Networks. Puebla, Mexico September 25-29 (2017)

[E4] *Sadamori Kojaku and Naoki Masuda. Core-periphery structure of networks: Consideration for random heterogeneous networks. Netsci. Indianapolis, Indiana, USA (2017)

[E5] *Sadamori Kojaku and Naoki Masuda. An extension of modularity for finding multiple core/periphery structure in networks. Netsci-X. Tel Aviv, Israel January 15-18 (2017)

INVITED TALK

[F1] *幸若完壮 ネットワークコアの検出アルゴリズムとその応用. ネットワーク科学セミナー. 統計数理研究所. 8.28-30 (2019)

[F2] *Sadamori Kojaku, Laurent Hébert-Dufresne, Enys Mones, Sune Lehmann, and Yong-Yeol Ahn. The effectiveness of backward contact tracing in networks. The State University of New York at Buffalo, 06.04 (2021)

HONORS

[G1] Best Contribution on Financial Networks Award. *NetSci-X* [1/58 presenters]. 2017

[G2] Dean Award. *Graduate School of Information Science and Technology, Hokkaido Univ.* 2015

[G3] Best Student Award. *The World Congress on Engineering* 2013

GRANT

[H1] Sadamori Kojaku, Giulio Cimini, Guido Caldarelli, Daigo Uemoto, and Takashi Kamihigashi. Correlation-based reconstruction of financial networks for systemic risk control. JSPS二国間交流事業。 (海外転出のため辞退) 2020

PATENT

[I1] 幸若完壮／上東貴志。学術論文の査読者検索装置、査読者検索方法、及び査読者検索プログラム [特願2020-14904]

[I2] Prediction method, prediction system and program [Patent No: 9087294].

SERVICE

[J1] **Referee work**: Nature communications; Scientific Reports; Journal of Complex Networks; Journal of Computational Social Science; PLOS ONE

[J2] **Program committee**: International Conference on Network Science, 2020

[J3] **Organizing committee**: International Conference on Network Science X, 2020

OTHER INTERESTS

Sailing (Advanced; Started in 1996), Kendo (3rd-Dan; Started in 2006), and tennis (Beginner, but I love it; Started in 2020)