

Jianxi Gao, Ph.D.

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RESEARCH INTEREST

- *Theories* Network Science, Control Theory, Data Science, Information Science, Operations Research
- *Algorithms* Graph Theory, Statistical Mechanics, Data Mining, Info. Visualization, Multi-Agent Model
- *Applications* Critical Infrastructure, Cyber Physical, Ecological, Biological, & Social-economical Systems

APPOINTMENTS

Assistant Professor of CS, Rensselaer Polytechnic Institute Aug. 2017 -

Research Assistant Professor, Northeastern University Sep. 2016 - Aug. 2017

Advisor: Albert-Laszlo Barabasi, Robert Gray Dodge Professor of Network Science

Postdoctoral Research Associate, Northeastern University Nov. 2013 - Aug. 2016

Advisor: Albert-Laszlo Barabasi, Robert Gray Dodge Professor of Network Science

Vis Post-Doc Research Assoc, Northeastern University Nov. 2012 - May 2013

Advisor: Albert-Laszlo Barabasi, Robert Gray Dodge Professor of Network Science

Research Assistant, Boston University Sep. 2010 - May 2012

Advisor: H. Eugene Stanley (NAS), William Fairfield Warren Distinguished Professor

Visiting Scholar, Boston University Sep. 2009 - Aug. 2010

Advisor: H. Eugene Stanley (NAS), William Fairfield Warren Distinguished Professor

Research Assistant, Intelligent Information Control Lab at SJTU 2006-2009

Advisor: Xiaoming Xu, Past Vice President of Shanghai Jiao Tong University, Professor of Automation

EDUCATION

Ph.D. SJTU, Control Theory and Control Engineering 2008-2012

Advisor: Xiaoming Xu, Thesis: Robustness and synchronization of network of networks.

Co-Advisor: H. Eugene Stanley (NAS) and Shlomo Havlin (Past President of Israel Physical Society).

M.S. SJTU, Control Theory and Control Engineering 2006-2009

Advisor: Xiaoming Xu; Thesis: Convergence of dynamic networks based on Vicsek model

B.S. DLUT, Chemical and Mechanical Engineering 2002-2006

Advisor: Hongguang Dong; Thesis: Real-time optimization of process system – Data Rectification

JOURNAL & CONFERENCE PAPERS [\[Google Scholar\]](#) [\[Researcher ID\]](#)

- [1] Lu Zhong, Mamadou Diagne, Weiping Wang, *Jianxi Gao* Country distancing increase reveals the effectiveness of travel restrictions in stopping COVID-19 transmission **Submitted**
- [2] Jiannan Yang, Qingpeng Zhang, Zhidong Cao, *Jianxi Gao*, Dirk Pfeiffer, Lu Zhong, Daniel Dajun Zeng The impact of non-pharmaceutical interventions on the prevention and control of COVID-19 in New York City **Submitted**
- [3] Huixin Zhang, Qi Wang, Weidong Zhang, Shlomo Havlin, and *Jianxi Gao** A unified framework determines distances of mutualistic systems from tipping points **Submitted**.
- [4] Xiang Niu, Christopher Brissette, Chunheng Jiang, *Jianxi Gao*, Gyorgy Korniss, and Boleslaw Szymanski. Heuristic assessment of the economic effects of pandemic control **Submitted**

- [5] Chunheng Jiang, Boleslaw K. Szymanski, Shlomo Havlin, *Jianxi Gao*^{*} Nuclear Reaction Network Unveils Novel Reaction Patterns and Nuclei Stability *Under Review*

Papers Under review

- [6] Hengfang Deng, *Jianxi Gao*, Qi Wang Finding adaptive bridges during the COVID-19 spread in the U.S. *Under Review*
- [7] Hengfang Deng, Daniel P. Aldrich, Michael M. Danziger, *Jianxi Gao*, Nolan E. Phillips, Sean P. Corneliuss, Qi Wang High-resolution human mobility data reveal race and wealth disparities in disaster evacuation patterns *Under Review*.
- [8] Xinyu Gao, Shangjia Dong, Ali Mostafavi, *Jianxi Gao*^{*} Macroscopic and Microscopic Characteristics of Networks with Time-variant Functionality for Evaluating Resilience to External Perturbations *Under review*
- [9] Yanli Gao, Shiming Chen, *Jianxi Gao*, and Jie zhou. Robustness of edge-coupled interdependent networks *Under review*
- [10] Xiangyi Meng, *Jianxi Gao*^{*}, and Shlomo Havlin Concurrence percolation enables better entanglement transmission in quantum networks than classical percolation. *Under review*
- [11] Xueming Liu, Daqing Li, Manqing Ma, Boleslaw K. Szymanski, H. E. Stanley, and *Jianxi Gao*^{*} Network Resilience *Under review*
- [12] Haoifei Meng, *Jianxi Gao*, Jinhu Lv, and Haitao Zhang Event-triggered semi-global robust output regulation for a class of nonlinear systems *Under review*

Papers Accepted

- [13] Xueming Liu, Enrico Maiorino, Arda Halu, Joseph Loscalzo, *Jianxi Gao*^{*}, Amitabh Sharma Lethality in multilayer biological molecular networks *Nature Communications, Accepted*

Papers published after RPI

- [14] Chaoyang Chen, Yang Zhao, *Jianxi Gao*^{*1}, and Harry Eugene Stanley Nonlinear model of cascade failure in weighted complex networks considering overloaded edges *Scientific Reports*, 10 (1), 1-12, 2020.
- [15] Huixin Zhang, Xueming Liu, Qi Wang, Weidong Zhang, and *Jianxi Gao*^{*} Co-adaptation enhances the resilience of mutualistic networks *Journal of the royal society interface*, 17(168), 20200236, 2020.
- [16] Chunheng Jiang, *Jianxi Gao*, and Malik Magdon-Ismael Inferring Nodes' Degrees from Partially Observed Networks *Proceedings of the IJCAI International Joint Conferences on Artificial Intelligence*, 2020.
- [17] Guanwen Zeng, *Jianxi Gao*, Daqing Li, Shlomo Havlin, H.E. Stanley Multiple functional networks in urban traffic *Proceedings of the National Academy of Sciences*, 117(30), 17528-17534, 2020.
- [18] Shi-Ming Chen, Yan-Li Gao, Xue-Ming Liu, H. E. Stanley, *Jianxi Gao*^{*}, Shlomo Havlin Robustness of interdependent networks based on bond-percolation *EPL* 130 (2020), 38003, 2020.
- [19] Weiping Wang, Saini Yang, *Jianxi Gao*, Fuyu Hu, Wanyi Zhao, H. Eugene Stanley, An integrated approach for impact assessment of large-scale future floods on the road transport system *Risk Analysis*, 40(9), 1780-1794, 2020.

¹Symbol * indicates that I am the corresponding author or the co-corresponding author.

- [20] Zejie Zhou, Boleslaw Szymanski, and *Jianxi Gao** Modeling competitive evolution of multiple languages *Plos One*, 15(5), e0232888, 2020
- [21] Chunheng Jiang, *Jianxi Gao*, and Malik Magdon-Ismael True Nonlinear Dynamics from Incomplete Networks *The Thirty-Fourth AAAI Conference on Artificial Intelligence, AAAI-2020*, Full Oral (4.5%).
- [22] Yongtao Zhang, Cunqi Shao, Shibo He, and *Jianxi Gao** Resilience centrality in complex networks *Physical Review E*, 101(2), 022304, 2020.
- [23] Alireza Mostafizi, Shangjia Dong, Haizhong Wang, *Jianxi Gao*, Xiaopeng Li, Measuring the Topological Robustness of Transportation Networks to Disaster-induced Failures: A Percolation Approach *Journal of Infrastructure Systems*, 26(2), 04020009, 2020.
- [24] W. Guo, S. Zhang, T. Zeng, Y. Li, *J. Gao**, and L. Chen A novel network control model for identifying personalized driver genes in cancer *Plos Computational Biology*, 15(11): e1007520, 2019.
- [25] D. Duan, C. Li, S. Si, Z. Wang, D. Li, *J. Gao*, S. Havlin, H.E. Stanley, S. Boccaletti Universal Behavior of Cascading Failures in Interdependent Networks *Proceedings of the National Academy of Sciences*, 16(45), 22452-22457, 2019.
- [26] F. An, X. Gao, N. Liu, Z. Wang, Y. Li, *J. Gao*, and H. E. Stanley Cluster-based topological features of nodes in a multiplex network – from a network of networks perspective *New Journal of Physics*, 21(10), 103014, 2019.
- [27] D. Li, *J. Gao** Towards perturbation prediction of biological networks using deep learning *Nature Scientific Reports* 9(1), 2019.
- [28] S. Dong, H. Wang, A. Mostafizi, *J. Gao* Robust Component: A Robustness Measure that Incorporates Access to Critical Facilities under Disruptions *Journal of the royal society interface* 16 (157), 2019.
- [29] X. Lu, *J. Gao*, and B. Szymanski The evolution of polarization in the legislative branch of government *Journal of the royal society interface*, 16 (156), 2019.
- [30] H. Zhang, and W. Zhang, *J. Gao** Synchronization of interconnected heterogeneous networks: The role of network sizes *Nature Scientific Reports*, 9, 6154, 2019.
- [31] W. Wang, S. Yang, H. E. Stanley, *J. Gao** Local floods induce large-scale abrupt failures of road networks *Nature Communications*, 10, 2114, 2019.
- [32] H-T. Zhang, M.-C. Fan, Y. Wu, *J. Gao*, H. E. Stanley, T. Zhou, and Y. Yuan [Ultrafast Synchronization via Local Observation](#) *New journal of Physics*, 21, 013040, 2019.
- [33] X. Liu, H. E. Stanley, and L. Pan, and *J. Gao** [Multiple phase transitions in networks of directed networks](#) *Physical Review E*, 99(1), 012312, 2019.
- [34] H. Zhang, W. Zhang, *J. Gao** The Critical Penetration Level in Oscillator-Based Smart Grid *IEEE Power Electronics, Drives and Energy Systems Conference*, 2018.
- [35] U. Bhatia, S. Chatterjee, A. R. Ganguly, *J. Gao*, Ma. Halappanavar, M. Oster, K. Clark, R. Brigantic, and R. Tipireddy. TAViation Transportation, Cyber Threats, and Network-of-Networks: Modeling Perspectives for Translating Theory to Practice. *In 2018 IEEE International Symposium on Technologies for Homeland Security (HST)*, (pp. 1-7). IEEE.

- [36] R., Rasoul, A. Bagheri, A. Ramezani, S. P. Cornelius, and *J. Gao* [Designing pinning network controllability for interdependent dynamical networks](#) *In 2018 Annual American Control Conference (ACC)* ,3478-3483 (2018).
- [37] Huang, Zhiren, Pu Wang, Fan Zhang, Jianxi Gao, and Maximilian Schich [A mobility network approach to identify and anticipate large crowd gatherings](#) *Transportation Research Part B: Methodological* ,147-170 (2018).
- [38] Gu, Yupeng and Sun, Yizhou and Gao, Jianxi [The Co-Evolution Model for Social Network Evolving and Opinion Migration](#) *Proceedings of the 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*,175–184 (2017).
- [39] N. K. Panduranga, *J. Gao*, X. Yuan, H. E. Stanley, and S. Havlin. [Generalized model for \$k\$ -core percolation and interdependent networks](#) *Phys. Rev. E*, 96, 032317 (2017).
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- Papers before RPI
-
- [40] X. Liu, L. Pan, H. E. Stanley, and *J. Gao**. [Controllability of giant connected components in a directed network](#). *Phys. Rev. E*, 95, 042318 (2017).
- [41] M. Posfai, *J. Gao*, S. Cornelius, R. D’Souza, and A.-L. Barabasi. [Controllability of multiplex, multi-time-scale networks](#). *Phys. Rev. E*, 94, 032316 (2016).
- [42] *J. Gao*, B. Barzel, and A-L. Barabasi. [Universal Resilience Patterns in Complex Networks](#). *Nature*, 530(7590), 307-312 (2016). (MATLAB software, NuRsE.)
- [43] X. Liu, H. E. Stanley, and *J. Gao**. [Breakdown of Interdependent Directed Networks](#). *Proceedings of the National Academy of Sciences*, 113(5), 1138-1143 (2016).
- [44] J.-H. Cho and *J. Gao**. [Cyber War Game in Temporal Networks](#). *PLOS ONE*, 11(2), e0148674 (2016).
- [45] *J. Gao*, X. Liu, D. Li, and S. havlin. [Recent Progress on the Resilience of Complex Networks](#). *Energies*, 8(10), 12187–12210 (2015).
- [46] H. Peng, D. Zhao, X. Liu, and *J. Gao**. [Collective Motion on A Network of Self-propelled Agent Systems](#). *PLOS ONE*, 10(12): e0144153 (2015).
- [47] X. Liu, H. Peng, and *J. Gao**. [Vulnerability And Controllability of Networks of Networks](#). *Chaos, Solitons & Fractals*, 80, 125-138 (2015).
- [48] *J. Gao*, Y.-Y. Liu, R. D’Souza, and A.-L. Barabasi. [Target Control of Complex Networks](#). *Nature Communication* 5, 5415 (2014).
- [49] S. Havlin, H. E. Stanley, A. Bashan, *J. Gao*, and D. Y. Kenett. [Percolation of Interdependent Network of Networks](#). *Chaos, Solitons & Fractals* 72, 4-19 (2014).
- [50] S. Havlin, D. Y. Kenett, A. Bashan, *J. Gao*, and H. E. Stanley. [Vulnerability of Network of Networks](#). *Eur. Phys. J. Special Topics* 223, 2087 (2014).
- [51] *J. Gao*, D. Li, and S. Havlin. [From Single Network to Network of Networks](#). *Nati. Sci. Rev.* 1, 346 (2014).
- [52] *J. Gao**, S. V. Buldyrev, H. E. Stanley, X. Xu, and S. Havlin. [Percolation of A General Network of Networks](#). *Phys. Rev. E*, 107, 195701 (2013).
- [53] D. Zhou, *J. Gao*, H. E. Stanley, and S. Havlin [Percolation of Partially Interdependent Scale-free Networks](#). *Phys. Rev. E*, 88, 062816 (2013).

- [54] G. Dong, *J. Gao*, R. Du, L. Tian, H. E. Stanley, and S. Havlin. [Robustness of Network of Networks Under Targeted Attack](#). *Phys. Rev. E*, 87, 052804 (2013).
- [55] *J. Gao*, S. V. Buldyrev, S. Havlin, and H. E. Stanley. [Networks Formed From Interdependent Networks](#). *Nature Physics*, 8, 40-48 (2012). (C++ software, [NON](#))
- [56] *J. Gao*^{*}, S. V. Buldyrev, S. Havlin, and H. E. Stanley. [Robustness of A Network Formed by n Interdependent Networks With A One-to-one Correspondence of Dependent Nodes](#). *Phys. Rev. E*, 85, 066134 (2012).
- [57] G. Dong, *J. Gao*^{*}, L. Tian, R. Du, Y. He [Percolation of Partially Interdependent Networks Under Targeted Attack](#). *Phys. Rev. E*, 85, 016112 (2012).
- [58] *J. Gao*^{*}, S. V. Buldyrev, S. Havlin, and H. E. Stanley. [Robustness of a Network of Networks](#). *Phys. Rev. Lett.*, 107, 195701 (2011).
- [59] X. Huang, *J. Gao*, S. V. Buldyrev, S. Havlin, and H. E. Stanley. [Robustness of Interdependent Networks Under Targeted Attack](#). *Phys. Rev. E*, 83, 065101(R) (2011).
- [60] *J. Gao*^{*}, S. Havlin, X. Xu, and H. E. Stanley. [Angle Restriction Enhances Synchronization of Self-propelled Objects](#). *Phys. Rev. E*, 84, 046115 (2011).
- [61] Z. Chen, *J. Gao*, Y. Cai, and X. Xu [Evolutionary Prisoners Dilemma Game in Flocks](#). *Physica A*, 390, 50-56 (2011).
- [62] Z. Chen, *J. Gao*, Y. Cai, and X. Xu. [Evolution of Cooperation among Mobile Agents](#). *Physica A*, 390, 1615-1622 (2011).
- [63] Y. Cai, L. Xu, *J. Gao*, and X. Xu. [Study on Robust \$H_\infty\$ Filtering in Networked Environments](#). *International Journal of Automation and Computing*, 8, 465–471 (2011).
- [64] *J. Gao*^{*}, Z. Chen, Y. Cai, and X. Xu [Enhancing The Convergence Efficiency of A Self-propelled Agent System Via A Weighted Model](#). *Phys. Rev. E*, 81, 041918 (2010).

Book and Book chapters

- [1] D. Kenett, *J. Gao*, X. Huang, S. Shao, I. Vodenska, S. Buldyrev, G. Paul, H. E. Stanley, S. Havlin. [Network of Interdependent Networks: Overview of Theory and Applications](#). *Networks of Networks: The Last Frontier of Complexity*. Springer, 107, 3–36 (2014).
- [2] *J. Gao*, A. Bashan, S. Havlin. [Introduction to Network of Networks](#). IOP ebooks (2021) In preparation (invited).

Patents

- [1] *J. Gao*, Y. Cai, C. Wen, X. Xu. Optimization method for multi-agent synchronization. *China Patent*, CN102393709A, 2012.

Journal Publication in Chinese (Mainly Undergraduate Work)

- [1] L. Song, Y. Cai, *J. Gao*, X. Xu. Multi-Sensor Data Fusion for Delayed Systems. *Control Engineering*, 2, (2010).
- [2] R. Li, Y. Cai, *J. Gao*, X. Xu. A Multi-Sensor Fusion Estimation Method. *Control Engineering*, 2, (2010).
- [3] *J. Gao*, Z. Chen, Y. Cai, X. Xu. Approach to Enhance Convergence Efficiency of Vicsek Model. *Control and Decision*, 24(8), 1269-1272 (2009).
- [4] *J. Gao*, H. Dong, Y. Liu, S. Cui, X. Qin. Analysis and Simulation of Stock Market Based on Cellular Automata. *Mathematics in Practice and Theory*, 39(4), 6-12 (2009).
- [5] Y. Liu, H. Dong, *J. Gao*, S. Cui, X. Qin. Analysis of Investor's Psychology And Fluctuations of Stock's Price in Stock Market Based on Cellular Automata. *Bulletin of Science and Technology*, 24(3), 427-432 (2008).
- [6] *J. Gao*, H. Dong, J. Huang, Z. Han, X. Xu. Data Rectification Based on Fuzzy Self-Adaptability Genetic Algorithm. *Control and Instruments in Chemical Industry*, 34(4), 9-14 (2007).
- [7] H. Dong, Z. Han, *J. Gao*, Y. Cui, P. Yao, Y. Yuan. Realization of Integral Frame of Separation Sequence Synthesis by Intelligent Search Algorithm. *Applied Science and Technology*, 33(1), 55-58 (2006).
- [8] *J. Gao*, H. Dong, Y. Liu, J. Liu. Algorithm for Portfolio Based on The Strategy of Equal-Risk. *Journal of Xi'an Institute of Technology*, 25(5), 425-428 (2005).

FUNDED GRANT

- [1] KIP 141529 1092, Fostering the Resilience of Connected Autonomous Urban Transportation Systems, Sean (Xiaozheng) He, Jianxi Gao, Yury Yatsynovich, \$71,714, Jan.1 2018 – Dec. 31 2018.
- [2] IBM AIRC A72045, Training Neural Network with Few-Shot Data and Applications to AI automation, PI: Jianxi Gao, \$200,000, Sep.1 2020 – Dec. 31 2021.

TEACHING EXPERIENCE

Teaching <i>Rensselaer Polytechnic Institute</i> "Network Resilience (CSIC4977/6962)".	2020 Fall
Teaching <i>Rensselaer Polytechnic Institute</i> "Introduction to Algorithms (CSIC2300)".	2020 Spring
Teaching <i>Rensselaer Polytechnic Institute</i> "Network Resilience (CSIC4977/6962)".	2019 Fall
Teaching <i>Rensselaer Polytechnic Institute</i> "Introduction to Network Science (CSIC4964/6964)".	2019 Spring
Teaching <i>Rensselaer Polytechnic Institute</i> "Network Resilience (CSIC4977/6962)".	2018 Fall
Teaching <i>Rensselaer Polytechnic Institute</i>	2018 Spring

"Social Processes and Networks (CSIC4964/6964)".

Teaching 2017 Fall
Rensselaer Polytechnic Institute

"Network Resilience (CSIC4977/6962)".

Co-Teaching 2016 Fall
Boston University

"Network Science (PY895)" with H. E. Stanley.

Co-Teaching 2015 Fall
Boston University

"Network Science (PY895)" with H. E. Stanley.

Teaching 2007–2008
Continuing Education School, Shanghai Jiao Tong University

"Computer Graph" and "Operating System". The students were from Department of Computer Science.

Training Mar. 2009
Baosteel Company

I trained Matlab to 13 employees of Baosteel Company (8 hours/day × 4 days).

CURRENT STUDENTS

Chunheng Jiang Ph.D. student
Research: Transportation Networks, Nuclear Networks

Manqing Ma Ph.D. student
Research: Social Networks

STUDENTS GRADUATED

Xiang Niu Ph.D. student
Research: Ecological Networks

Working in Google Now

Jihui Nie Master student
Research: Ecological Networks

Working in Google Now

Varun Rao Master student
Research: Ecological Networks

PH.D. Indiana University now

Milo Trujillo Master student
Research: Ecological Networks

PH.D. University of Vermont now

INVITED TALKS

[18] "Network Nuclear", Nuclear Science and Engineering at MIT, March 4th, 2019.

[17] "Structures and Dynamics of Complex Networks", American Control Conference, Milwaukee, WI, June 27-29 2018.

[16] "Network Resilience", First Northeast Regional Conference on Complex Systems, BINGHAMTON, NY, April 11-13 2018.

[15] "Resilience of complex networks", Scalable cooperation group in MIT Media Lab, Boston, June, 2016.

[14] "Network of Networks: from structures to dynamics", **NetSci Satellite: Netonets2016**, Seoul, South Korea, 2016.

[13] "Network of Networks: from theory to applications", **NetSci Satellite: Multiscale Characterization of the Human Diseases by Multinetworks**, Seoul, South Korea, 2016.

- [12] “Universal resilience patterns in complex networks”, Channing Lab, Harvard Medical School, February 2016.
- [11] “The extreme vulnerability of network of networks”, **NetSci Satellite: Physics of multilayered interconnected networks**, Berkeley, California, USA, 2014.
- [10] “The Extreme Vulnerability of Network of Networks”, **SIAM on Applications of Dynamic Systems**, Snowbird, USA, 2013, Featured Minisymposium Video ([Link](#)).
- [9] “Extremely vulnerability of a network of networks”, **FuturICT Workshop at MIT Media Lab**, Boston, USA, 2013.
- [8] “From single network to Network of networks”, **East Lake International Forum**, Wuhan, China, 2013.
- [7] “Controlling network of networks”, Automation Department, Shanghai Jiao Tong University, June 2013.
- [6] “Target control a complex network”, Automation Department, Huazhong University of Science and Technology, November 2013.
- [5] “Robustness of a network of networks”, **Workshop Networks’ Emergence and sustainability**, Venice, Italy, 2012.
- [4] “Networks of Networks”, **Workshop Complex networks**, Shanghai, China, 2012.
- [3] “Collective Motion”, Department of Mechanical Engineering and Department of Automation, Huazhong University of Science and Technology, June 2012.
- [2] “Extremely vulnerability of network of networks”, Physics Department, Bar-Ilan University, Sep. 2012.
- [1] “Networks of Networks”, Department of Electronic Engineering, Fu dan University, January 2012.

CONTRIBUTED TALKS AND CONFERENCES

- [6] *J. Gao*, B. Barzel, and A.-L. Barabasi. “Universal resilience patterns in complex networks”, Netsci2016, Seoul, South Korea, 2016. (Abstract + Oral)
- [5] *J. Gao*, Y.-Y. Liu, R. D’Souza, and A.-L. Barabasi. “Target Control of complex networks”, APS March meeting, Denver, USA, 2014. (Abstract + Oral)
- [4] Di Zhou , Jianxi Gao , Shlomo Havlin , H.Eugene Stanley, “Percolation of Double-Layer Networks with Different Topologies Under Random Attacks”, APS March meeting, Boston, USA, 2012. (Abstract)
- [3] Jianxi Gao , Sergey V. Buldyrev , H. Eugene Stanley , Shlomo Havlin, “Robustness of a Network of Networks”, APS March meeting, Boston, USA, 2012. (Abstract + Oral)
- [2] Xuqing Huang , Jianxi Gao , Sergey Buldyrev , Shlomo Havlin , H. Eugene Stanley, “Robustness of interdependent networks under targeted attack”, APS March meeting, Boston, USA, 2012. (Abstract)
- [1] Jianxi Gao, Zhuo Chen, “An Approach to Enhance Convergence Efficiency of Self-propelled Agent System”, First International Conference, Complex 2009, Shanghai, China, 2009. (Paper+Oral)

PUBLIC MEDIA & ARTS

- [20] “The Complex Networks of Our Planet”, **Next Nature Net**, April 25, 2016. ([Link](#))
- [19] “Resilience and complex systems (Translated from Italy)”, **Alekoslab**, April 17, 2016. ([Link](#))
- [18] “Prophecy given to scientists: when the extinction of bees? (Translated from Hebrew)”, **YNET**, Mar. 25, 2016. ([Link](#))
- [17] “How resilient is a complex system? Is it near collapse?”, **The Connectivist**, Mar. 17, 2016. ([Link](#))

- [16] “Patterns of Resilience and Collapse”, **Andrew Zolli**, Mar. 13, 2016. ([Link](#))
- [15] “Predicting the resiliency ‘tipping points’ of complex natural and social systems”, **Resilient Investor**, Mar. 9, 2016. ([Link](#))
- [14] “Network Earth”, **Ecology**, Mar. 8, 2016. ([Link](#))
- [13] “A 5-minute video shows why the social network of plants and animals is so fragile (Translated from German)”, **WIRED**, Feb. 26, 2016. ([Link](#))
- [12] “What are the complex networks? (Translated from Italy)”, **WIRED**, Feb. 25, 2016. ([Link](#))
- [11] “We’re Pushing Nature’s Network Architecture To A Catastrophic Crash – Nature can compensate for failure. Until one too many things go wrong.”, **Fast Codesign News**, Feb. 23, 2016. ([Link](#))
- [10] “From Coral Reefs To Power Grids, This Math Tool Can Predict Whether A System Will Collapse”, **Forbes News**, Feb. 22, 2016. ([Link](#))
- [9] “Watch: Can nature handle many more extinctions?”, **Siliconrepublic News**, Feb. 22, 2016. ([Link](#))
- [8] “Social network of Earth’s plants and animals”, **Flowing Data**, Feb. 22, 2016. ([Link](#))
- [7] “Calculating Nature’s Tipping Point ”, **Geo Lounge**, Feb. 21, 2016. ([Link](#))
- [7] “Calculating Nature’s Tipping Point ”, **Remote Device**, Feb. 20, 2016. ([Link](#))
- [6] “Witness the Stunning Complexity of Network Earth”, **Stash Media**, Feb. 19, 2016. ([Link](#))
- [5] “Researchers find the tipping point between resilience and collapse in complex systems”, **Northeastern News**, Feb.17, 2016. ([Link](#))
- [4] “Network Earth”, Youtube, **Nature Video**, Feb. 17, 2016. ([Link](#))
- [3] “Scientists review worldwide rise of ‘network of networks’ ”, **Phys Org**, Dec. 3, 2014. ([Link](#))
- [2] “When Networks Network”, **Science News**, Sep. 7, 2012. ([The Link](#))
- [1] ”Tom Siegfried, Randomness: Networks of networks are all around you – and you are one”, **Science News**, Feb. 6, 2012. ([Link](#))

HONORS

Outstanding Thesis

- 2015 Outstanding Doctoral Dissertation, Shanghai.
- 2014 Outstanding Doctoral Dissertation Award by CAA.
- 2012 Shanghai Outstanding Doctoral Graduates.
- 2010 Outstanding Master’s Thesis, Shanghai.
- 2006 Outstanding Bachelor’s Thesis, Dalian University of Technology.

Outstanding Referees

- 2016 Outstanding Reviewer of Elsevier’s journals
- 2015 Distinguished Referees for Europhysics Letters.
- 2014 Distinguished Referees for Europhysics Letters.
- 2013 Distinguished Referees for Europhysics Letters.

Funding Awards

- 2011 Excellent Doctoral Student granted by Ministry of Education. \$5,000/year
- 2010 Outstanding Doctoral Dissertation Engagement Fund. \$ 11,800/year
- 2004 Science and Technology Innovation Fund for Undergraduates. \$ 320/year

Other Awards

- 2010 Guanghua Scholarship for Graduate Students.
- 2005 The Mathematical Contest in Modeling (USA), Second Prize.

PROFESSIONAL ACTIVITIES

Editor Board Member

Nature Scientific Reports, since January 2015.

Reviewer

Science, PNAS, Nature Energy, Nature communications, Nature System Biology, Physical Review X, Physical Review Letters, Physical Review E, Nature Scientific Reports, Plos One, New Journal of Physics, Journal of Physics: Condensed Matter, Europhysics Letter, Nonlinear Dynamics, Psychology, and Life Sciences, Journal of Statistical Mechanics: Theory and Experiment, IEEE Transactions on Knowledge and Data Engineering, IEEE/ACM Transactions on Computational Biology and Bioinformatics, IEEE Transactions on Control of Network Systems, IEEE Transactions on Network Science and Engineering, Journal of Statistical Physics, BMC Systems Biology, Canadian Journal of Physics, Physics Letters A, Physica A: Statistical Mechanics and its Applications, Journal of Circuits, Systems, and Computers, International Journal of Control.

Program Committee

- [1] International Workshop on Complex Networks (CompleNet2016.2017,2018)
- [2] International Conference on Complex Systems (ICCS2018)
- [3] First Northeast Regional Conference on Complex Systems (NERCCS2018, 2019)
- [4] Network Science X (NetSciX2018)
- [5] International Conference on Complex Networks and their Applications (2018)

Co-organizer

- [1] Satellite “Controlling complex networks” in NetSci 2014, Berkeley, California.

Section Chair

- [1] “Resilience” section in NetSci 2016, Seoul, South Korea.