

Dashun Wang

CONTACT INFORMATION

Northwestern University
Kellogg School of Management
Evanston, IL 60208, USA

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Updated March 2017

RESEARCH INTERESTS

My research interests lie in the intersection of computational social science, computer science, and statistical physics. Through the lens of large-scale datasets, I hope to use and develop tools of network science to help improve the way in which we understand the interconnectedness of the social technical and business world around us
Keywords: Computational Social Science, Network Science, Science of Science, Big Data; Complex Systems, Social Media, Statistical Physics

ACADEMIC POSITIONS

Northwestern University, Evanston, IL, USA

Associate Professor, August 2016 to present
Management & Organizations, Kellogg School of Management
(By courtesy) Industrial Engineering & Management Sciences, McCormick School of Engineering
Core faculty, Northwestern Institute on Complex Systems (NICO)

Pennsylvania State University, University Park, PA, USA

Assistant Professor, January 2015 to July 2016
College of Information Sciences and Technology

Northeastern University, Boston, MA, USA

Adjunct Assistant Professor, Department of Physics January 2014 to present

IBM T.J. Watson Research Center, Yorktown Heights, NY, USA

Research Staff Member July 2013 to December 2014

Dana-Farber Cancer Institute, Harvard University, Boston, MA, USA

Research Associate March 2009 to June 2013

Northeastern University, Boston, MA, USA

Research Assistant January 2009 to June 2013

IBM T.J. Watson Research Center, Hawthorne, NY, USA

Research Intern Summers 2010 and 2011

Northeastern University, Boston, MA, USA

Teaching Assistant September 2007 to December 2008

Fudan University, Shanghai, China

Research Assistant July 2005 to July 2007

EDUCATION

Ph.D. Physics, Northeastern University, Boston, USA, June 2013

- Thesis title: Statistical Physics in the Era of Big Data
- Advisor: [Albert-László Barabási](#)

M.Sc. Physics, Northeastern University, Boston, USA, May 2009

B.Sc. Physics, Fudan University, Shanghai, China, July 2007

SELECTED HONORS **Awards**

& AWARDS

- *Young Investigator Award*, Air Force Office of Scientific Research, 2016.
- *Invention Achievement Award*, IBM Research, 2014.
- *Best Student Talk Award*, International Workshop and Conference on Network Science (NetSci, Chicago, IL, USA), 2012.
- *Student Travel Award*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD, San Diego, CA, USA), 2011.
- *Student Spotlight*, Physics Department, Northeastern University, 2011.
- *Lawrence Award*, Northeastern University, 2010.
- *Outstanding Student*, Fudan University, Shanghai, Awarded 4 times: 2004–2007.

Scholarship

- *Graduate scholarship*, Northeastern University, 2007–2013
- *Renmin Scholarship*, Fudan University, Shanghai, 2003–2007

GRANTS

- PI, “Why Teams Fail? Large-scale analyses of NIH grant applications”, Data Science Initiative, Northwestern University, \$45,000, 2017/03–2018/03.
- PI, “Modeling and Predicting Individual Scientific Impact”, Air Force Office of Scientific Research (AFOSR) Young Investigator Research Program, \$359,716, 2016/12–2019/12.
- co-PI, “Discovering the Extent of Estimable Prediction in Science and Technology (DEEP)”, Air Force Office of Scientific Research (AFOSR), \$768,371, 2015/05–2018/05.
- PI, “Modeling patent citation dynamics to uncover and predict patent quality and impacts”, Interdisciplinary Award, Penn State University, \$85,581, 2016/01–2016/07.
- co-PI, “International Symposium on Science of Science”, National Science Foundation (NSF), \$40,000, 2016/03.
- PI, “Science of Science - Data award”, Penn State University, \$5,000, 2015/03.
- co-PI, “Modeling New Product Innovation and Market Reception: predicting market success and exploring computational creativity”, IBM Open Collaborative Research Awards (OCR), \$75,000, 2014/10.

FIVE SELECTED PUBLICATIONS

†: equal contribution

‡: corresponding author

- Tao Jia[†], **Dashun Wang**[‡], and Boleslaw K. Szymanski[†]. Quantifying patterns of research-interest evolution. *Nature Human Behaviour* 1 (2017): 0078.
- Roberta Sinatra, **Dashun Wang**, Pierre Deville, Chaoming Song, and Albert-László Barabási, Quantifying the evolution of individual scientific impact, *Science*, 354, 6312 (2016).
- Pierre Deville, Chaoming Song, Nathan Eagle, Vincent Blondel, Albert-László Barabási, and **Dashun Wang**[†], Scaling identity connects human mobility and social interactions. *Proceedings of the National Academy of Sciences (PNAS)*, 2016.

- **Dashun Wang**[†], Chaoming Song[†], and Albert-László Barabási, Quantifying Long-term Scientific Impact. *Science*, 342, 6154 (2013): 127-132.
- **Dashun Wang**, Dino Pedreschi, Chaoming Song, Fosca Giannotti, and Albert-László Barabási, Human Mobility, Social Ties, and Link Prediction. *Proc. 17th ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD 2011)*. (Full paper, acceptance rate: 17.5%) [2nd most cited in KDD 2011]

PUBLICATIONS
(FULL LIST)

[†]: equal contribution

[‡]: corresponding author

- Tao Jia[‡], **Dashun Wang**[‡], and Boleslaw K. Szymanski[‡]. Quantifying patterns of research-interest evolution. *Nature Human Behaviour* 1 (2017): 0078.
- Roberta Sinatra, **Dashun Wang**, Pierre Deville, Chaoming Song, and Albert-László Barabási, Quantifying the evolution of individual scientific impact, *Science*, 354, 6312 (2016).
- Pierre Deville, Chaoming Song, Nathan Eagle, Vincent Blondel, Albert-László Barabási, and **Dashun Wang**[‡], Scaling identity connects human mobility and social interactions. *Proceedings of the National Academy of Sciences (PNAS)*, 2016.
- Xinyang Zhang, **Dashun Wang**, and Ting Wang, Inspiration or Preparation? Explaining Creativity in Scientific Enterprise. *Proceedings of the 25th ACM International Conference on Information and Knowledge Management (CIKM-2016)*, 2016. [Full paper, acceptance rate: 17.6%]
- Yi-Shan Sung, **Dashun Wang**, and Soundar Kumara, Uncovering the effect of dominant attributes on community topology: A case of Facebook networks. *Information Systems Frontiers*, 2016.
- Roberta Sinatra, Pierre Deville, Michael Szell, **Dashun Wang**, and Albert-László Barabási, A Century of Physics, *Nature Physics*, 11.10 (2015): 791-796. [cover article].
- Chaoming Song[†], **Dashun Wang**[†], and Albert-László Barabási, Connections between Human Dynamics and Network Science. [arXiv:1209.1411](https://arxiv.org/abs/1209.1411), 2015.
- Nan Cao, Yu-Ru Lin, Fan Du, and **Dashun Wang**, Episogram: Visual Summarization of Egocentric Social Interactions. *IEEE Computer Graphics and Applications*, 2015.
- Chaoming Song and **Dashun Wang**, Impact of Human Mobility on Social Networks. *Journal of Communications and Networks*, 17.2 (2015): 100-109.
- Giuseppe Mangioni, Filippo Simini, **Dashun Wang**, and Stephen Miles Uzzo (editors), Complex Networks VI, *Springer*, 2015. [Edited Book]
- Ting Wang and **Dashun Wang**, Why Amazon's Ratings Might Mislead You? The Story of Herding Effects. *Big Data Journal*, 2014.
- Ting Wang, **Dashun Wang**, and Fei Wang, Quantifying Herding Effects in Crowd Wisdom. *Proc. 20th ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD 2014)*, 2014.

- Hua-Wei Shen, **Dashun Wang**, Chaoming Song, and Albert-László Barabási, Modeling and Predicting Popularity Dynamics via Reinforced Poisson Processes. *The Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI 2014)*, 2014.
 - A. Jagmohan, Y. Li, N. Shao, A. Sheopuri, **D. Wang**, L. R. Varshney, and P. Huang, Exploring Application Domains for Computational Creativity. *The Fifth International Conference on Computational Creativity (ICCC 2014)*, 2014.
 - Pierre Deville, **Dashun Wang**, Chaoming Song, Roberta Sinatra, Vincent Blondel and Albert-László Barabási, Career on the Move: Geography, Stratification, and Scientific Impact. *Nature Scientific Reports*, 4: 4770, 2014.
 - Liang Gao, Chaoming Song, Ziyu Gao, Albert-László Barabási, James P. Bagrow, and **Dashun Wang**[†], Quantifying Information Flow During Emergencies. *Nature Scientific Reports*, 4: 3997, 2014.
 - **Dashun Wang**, Yu-Ru Lin, and James P. Bagrow, Social Networks in Emergency Response. *Encyclopedia of Social Network Analysis and Mining*, Springer, 2014 (Edited by Reda Alhajj and Jon Rokne).
 - **Dashun Wang**[†], Chaoming Song[†], and Albert-László Barabási, Quantifying Long-term Scientific Impact. *Science*, 342, 6154 (2013): 127-132.
 - Fosca Giannotti, Luca Pappalardo, Dino Pedreschi, and **Dashun Wang**, A complexity science perspective on human mobility. *Mobility Data: Modeling, Management, and Understanding*, Cambridge University Press, 2013 (Edited by Chiara Renso, Stefano Spaccapietra, and Esteban Zimányi).
 - Albert-László Barabási, Chaoming Song, and **Dashun Wang**, Handful of papers dominates citation. *Nature*, 491.7422 (2012): 40-40.
 - **Dashun Wang**, Dino Pedreschi, Chaoming Song, Fosca Giannotti, and Albert-László Barabási, Human Mobility, Social Ties, and Link Prediction. *Proc. 17th ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD 2011)*. (Full paper, acceptance rate: 17.5%) [**2nd most cited in KDD 2011**]
 - James P. Bagrow[†], **Dashun Wang**[†], and Albert-László Barabási, Collective Response of Human Populations to Large-scale Emergencies. *PLoS ONE*, 6(3): e17680, 2011
 - **Dashun Wang**, Zhen Wen, Hanghang Tong, Ching-Yung Lin, Chaoming Song, and Albert-László Barabási, Information Spreading in Context. *Proc. 20th International World Wide Web Conference (WWW 2011)*. (Full paper, acceptance rate: 12.4%)
- PATENTS
- Jagmohan, Ashish, Nan Shao, Anshul Sheopuri, Lav R. Varshney, and **Dashun Wang**. *System and Method for Contextual Recipe Recommendation*. U.S. Patent 20,160,140,444, issued May 19, 2016.
 - Pinel, Florian, Krishna C. Ratakonda, Lav R. Varshney, and **Dashun Wang**. *Group generation using sets of metrics and predicted success values*. U.S. Patent Application 14/612,698, filed February 3, 2015.

- **Dashun Wang**, Fei Wang, and Ting Wang. *Quantifying and Predicting Herding Effects in Collective Rating Systems*. U.S. Patent 20,160,063,380, issued March 3, 2016.
- System and Method for Automated Agents Detection on Social Media. *Pending*.

PRESENTATIONS

- Keynote, International Conference on Computational Social Science (IC²S²), Cologne, Germany (scheduled) 2017/07
- Keynote, The 4th Satellite on Quantifying Success, NetSci 2017, Indianapolis, IN (scheduled) 2017/06
- Colloquium, IEMS Department, Northwestern University 2017/04
- Colloquium, Tippie College of Business, the University of Iowa 2017/01
- Invited Speaker, Ten-year Anniversary of Web Science 2016/11
- Invited Speaker, AAAI Symposium, Wanshington DC 2016/11
- Colloquium, University of Chicago, Chicago, IL 2016/09
- Invited Attendee, Science Foo Camp, Google, Mountain View, CA 2016/07
- Keynote, Symposium on Research Methodologies in the Big Data Era SRMBD 2016 2016/05
- Invited Panelist, NIH Grand Challenges Workshop, NIH 2016/03
- Colloquium, University of Notre Dame, South Bend, IN 2016/03
- Colloquium, Northwestern University (Kellogg), Evanston, IL 2016/02
- Colloquium, Indiana University, Bloomington, IN 2016/02
- Colloquium, Northwestern University (NICO), Evanston, IL 2016/02
- Invited speaker, Satellite at Conference on Complex Systems, Tempe, AZ, 2015/10
- Invited speaker, Big data social science seminar, Penn State University 2015/10
- Keynote, AFOSR and BRICC, Arlington, VA 2015/07
- International Conference on Computational Social Science, Finland 2015/06
- Colloquium, University of Vermont, Burlington, VT 2015/04
- Invited, Metaknowledge Spring workshop, University of Chicago 2015/03
- Invited Speaker, The 10th Chinese Conference on Complex Networks. (Changsha, China) 2014/10
- Invited Speaker, The First Alibaba Forum on Complexity. (Alibaba, Hangzhou, China) 2014/10
- Invited Speaker, AFOSR, Arlington, VA 2014/08

- Invited, Metaknowledge Summer meeting, Pacific Grove, CA 2014/08
- Colloquium, University of Chicago, Chicago, IL 2014/04
- Invited Speaker, IBM T.J. Watson Research Center, Yorktown Heights, NY 2014/04
- Colloquium, Pennsylvania State University, University Park, PA 2014/02
- Colloquium, University of Texas at Austin, Austin, TX 2014/02
- Colloquium, Rutgers University, NJ 2014/01
- Invited speaker, IBM T.J. Watson Research Center, Yorktown Heights, NY 2013/11
- NYU Stern, Workshop on Information in Networks (WIN2013). 2013/10
- NetSci13: International Workshop and Conference on Network Science. Denmark.
–**Young Researcher Forum** 2013/06
- Invited Speaker, Beijing Jiaotong University, Beijing, China 2013/05
- Invited Speaker, JointNet Seminar, Boston, MA 2013/04
- Invited Speaker, FuturICT Workshop, MIT Media Lab. 2013/02
- Invited Speaker, IBM T.J. Watson Research Center, Yorktown Heights, NY 2012/12
- Invited Seminar, MIT Media Lab, Cambridge, MA 2012/11
- Invited Speaker, IBM T.J. Watson Research Center, Yorktown Heights, NY 2012/11
- NetSci12: International Workshop and Conference on Network Science
– **Best Student Talk** 2012/06
- American Physical Society March Meeting 2012. 2012/02
- NYU Stern, Workshop on Information in Networks (WIN2011). 2011/10
- Seminar speaker, IBM T.J. Watson Research Center, Hawthorne, NY 2011/09
- Department Seminar, IBM T.J. Watson Research Center, Hawthorne, NY 2011/09
- Invited Speaker, CAIDA, UCSD, San Diego, CA 2011/08
- Proc. 17th Intl. Conf. on Knowledge Discovery and Data Mining (KDD2011).
(Poster, San Diego, CA) 2011/08
- NetSci11: International Workshop and Conference on Network Science.
Conference presentation (Budapest, Hungary) 2011/06
- NetSci11: International Workshop and Conference on Network Science.
Workshop presentation (Budapest, Hungary) 2011/06
- Interdisciplinary Workshop on Information and Decision in Social Networks (WIDS).
MIT LIDS 2011/03
- Seminar, Department of Physics, Northeastern University, Boston, MA 2011/04

- Proc. 20th International World Wide Web Conference (WWW 2011).
(Hyderabad, India) 2011/04
- HSCB Focus 2011: Human Social Culture Behavior Modeling Program.
(Chantilly, VA) 2011/02
- Department Seminar, IBM T.J. Watson Research Center, Hawthorne, NY 2010/08
- SCNARC Seminar, IBM T.J. Watson Research Center, Hawthorne, NY 2010/05
- NetSci10: International Workshop and Conference on Network Science.
(Boston, MA) 2010/05
- Northeastern University, Research & Scholarship EXPO.
(Poster, Boston, MA) 2010/05
- Seminar, Department of Physics, Northeastern University, Boston, MA
– **Best Speaker Prize** 2010/04
- American Physical Society March Meeting 2010 2010/03
- NetSci09: International Workshop and Conference on Network Science.
(Venice, Italy) 2009/07
- Seminar, Kennedy School of Government, Harvard University 2009/06
- Seminar, Department of Physics, Northeastern University, Boston, MA 2009/04

SERVICE

Conference/Workshop Co-Chair/Organizer

- International Symposium on Science of Science,
Library of Congress, Washington DC, USA. March 2016.
- Quantifying Science,
(CCS'15 satellite) Tempe, AZ, USA. October 2015.
- DyNo 2015: 1st International Workshop on Dynamics in Networks,
ASONAM, Paris, France. August 2015.
- The 6th Workshop on Complex Networks (CompleNet),
New York, NY. March 2015.
- ImBig: CIKM 2014 Workshop on Interactive Mining for Big Data,
Shanghai, China. November 2014.
- Quantifying Success,
(ECCS'13 satellite) Barcelona, Spain. September 2013.
- Science of Success Symposium,
Harvard University, Cambridge, MA. June 2013.
- SocialD - A Conversation on Social Dynamics,
(NetSci2013), Copenhagen, Denmark. June 2013.
- Third Conference on the Analysis of Mobile Phone Datasets and Networks,
(NetMob 2013) MIT Media Lab, Cambridge, MA. May 2013.
- Second Conference on the Analysis of Mobile Phone Datasets and Networks,
(NetMob 2011) MIT Media Lab, Cambridge, MA. October 2011.
- International Workshop on Finding Patterns of Human Behavior in NETwork and
MObility Data,
(NEMO, ECML/PKDD 2011). Athens, Greece. September 2011.

Reviewer

- *General Audience*: Nature, Proceedings of the National Academy of Sciences (PNAS), Science Advances, Journal of The Royal Society Interface, Scientific Reports, PLoS ONE, Complex Adaptive Systems Modeling
- *Physics&Mathematics*: Physical Review Letters (PRL), Europhysics Letters (EPL), EPJ Data Science, European Physical Journal B (EPJB), Journal of Statistical Mechanics: Theory and Experiment (JSTAT), Chaos, Journal of Statistical Physics, Physica A, Frontiers of Physics.
- *Computer Science&Information Science*: ACM Computing Surveys, Data Mining and Knowledge Discovery Journal (DAMI), Transactions on Knowledge Discovery from Data (TKDD), Transactions on Intelligent Systems and Technology (ACM TIST), Transactions on Knowledge and Data Engineering (TKDE), Transactions on Sensor Networks (TOSN), Journal of Informetrics, IEEE Transactions on Big Data, Digital Signal Processing, IBM Journal of Research and Development.
- *Other*: New Media & Society,

Editor

- Journal of the Association for Information Science and Technology

Program Committee Member

- KDD 2017
- WWW 2015, 2017
- NetSci 2015, 2017
- CompleNet 2016, 2017
- SocInfo 2016
- IC2S2 2014, 2015, 2016
- IEEE SCC 2014
- ASONAM 2014
- BigDataScience 2014

Grant Reviewer

- National Science Foundation (NSF)
- Leverhulme Trust

Board Member

- *International board member*, the Irish Research Council.

ADVISING & MENTORING

PhD Students

Yian Yin (Industrial Engineering & Management Sciences, Northwestern University)
Lu Liu (College of IST, Penn State University)
Qing Jin (Physics, Northeastern University)
Zhongyang He (Economics, Penn State University)
Pierre Deville (Applied Math, Universite catholique de Louvain, Belgium)

Postdoc

Yang Wang (Northwestern University)

PhD Committee

Ngot Bui. Committee: Vasant Honavar (Chair), Lee Giles, Ping Li, John Yen.

TEACHING

Instructor

Social Dynamics and Network Analytics (MORS-945-0). MBA class, Kellogg School of Management, Northwestern University. (Spring 2017)

IST402: Network Science. Penn State University. (Spring 2016)

IST210: Organization of Data. Penn State University. (Spring 2015 & Fall 2015)

IN THE PRESS

List of selected media coverages

- KelloggInsight Podcast featuring me and Duncan Watts: Why Ideas Go Viral
- “Quantifying the evolution of individual scientific impact.” (*Science*, 2016) was covered in some newspapers, magazines, and blogs.
 - *New York Times*: When It Comes to Success, Age Really Is Just a Number
 - *Forbes*: We’re Learning To Predict Who Will Have The Greatest Career Impact
 - *Forbes*: Study Shows Youth Isn’t The Key To Making A Mark
 - *Washington Post*: Don’t give up: Older people can have creative breakthroughs
 - *The guardian*: Are you too old to find success?
 - *Science*: Hey scientists, how much of your publication success is due to dumb luck?
 - *Nature*: Is a scientific career predictable?
 - *Wired*: See How the Most Influential Science Comes in Waves
 - *The Huffington Post*: Are You A Late Bloomer? The Careers Of Eminent Scientists Offer Hope
 - *Scientific America*: The Science of Success in Science.
 - Other coverages include the Scientist, Kellogg Insight, Big Think, Inside Higher Ed, Flowing Data, The Australian, NY magazine, PhysOrg, ACS, Chemistry World, Northeastern News, CEU News, FastCoDesign, University World News, Yahoo News, Herald Tribune, University Herald, ORF Science, Spiegel Online, Il Corriere della Sera, Il Fatto Quotidiano, Internazionale, Panorama, Adnkronos, Padova News, Interesting Engineering, La Vanguardia, ABC.es, Semana, Scienza.nl, El Digital de Asturias, AgenciaSinc, Improbable, 3 Quarks Daily, Librarius, Museum.
- “Quantifying Long-term Scientific Impact” (*Science* **342**, 6154, 2013) was covered in some newspapers, magazines, and blogs.
 - Formula predicts research papers’ future citations. *Nature News* (October 3rd, 2013).
 - Future Science - Can predicting an article’s success change science? *Science* (October 4th, 2013).
 - Which of these breakthroughs will still matter in 20 years? *The Boston Globe* (October 7th, 2013), *Boston.com* (October 4th, 2013).
 - Hot Stuff. *Nature Physics*.
 - Diagnose: Evaluitis. *ORF.at* (October 28th, 2013).
 - Researchers use science to predict success. *Northeastern News* (October 4th, 2013).
 - Measuring Academic Impact. *CEU News*.

- Una ecuación predice el impacto futuro de los artículos científicos. *SINC (October 3rd, 2013)*.
- Model predicts future citation rate for recently published journal articles. *Physics Today (October 4th, 2013)*.
- Paper ‘fitness’ predicts future citation rate *Physics World (November, 2013)*.
- “Career on the Move: Geography, Stratification, and Scientific Impact” (*Scientific Reports*, 4: 4770 (2014)) was featured on *The Economist* and *NEU iNSolution*.
- “Quantifying Information Flow During Emergencies” (*Scientific Reports*, 4: 3997 (2014)) was featured on *MIT Technology Review* and *edu.cn*.
- “Collective Response of Human Populations to Large-scale Emergencies” (*PLoS ONE* 6(3): e17680, 2011) was featured on *Northeastern News*.

COMPUTER SKILLS	Python, MATLAB, Mathematica, R, C/C++, L ^A T _E X, BASH/shell scripting, ActionScript 3.0, HTML, PHP, SQL, Adobe Creative Suite 5. Mac OS X, Linux, and Windows Operating Systems.
OUTSIDE ACTIVITIES	N/A
REFERENCES	Available upon request