

Yian Yin

CONTACT INFORMATION	Cornell University	Email: yy994@cornell.edu
	Department of Information Science Bowers College of Computing & Information Science Gates Hall, 107 Hoy Rd, Ithaca, NY 14853	Website: https://www.yianyin.net Voice: 425-209-5518 Updated July 2023
ACADEMIC POSITIONS	Cornell University , Ithaca, NY, USA	
	Assistant Professor,	Jul 2023 –
	Visiting Assistant Professor,	Jan 2023 – Jun 2023
	Information Science, Bowers Computing & Information Science	
	Faculty Affiliate,	Jul 2022 –
	Cornell Center for Social Sciences	
	Northwestern University , Evanston, IL, USA	
	Research Assistant Professor,	Aug 2022 – Jun 2023
	Kellogg School of Management	
	Research Fellow,	Sep 2019 –
EDUCATION	Center for Science of Science & Innovation	
	Researcher in Residence,	Aug 2016 –
	Northwestern Institute on Complex Systems	
	Microsoft Research , Redmond, WA, USA	
	Visiting Researcher,	Oct 2018 – Nov 2018
	Microsoft Academic Graph Analytics	
	Pennsylvania State University , University Park, PA, USA	
	Visiting Scholar,	Jul 2015 – Oct 2015
	College of Information Sciences & Technology	
	Peking University , Beijing, China	
SELECTED AWARDS	Undergraduate Research Assistant,	May 2014 – Jun 2016
	Center for Information Sciences	
	Northwestern University , Evanston, IL, USA	
	Ph.D. , Industrial Engineering & Management Sciences	Aug 2022
	Thesis: Essays on the Science of Science and Innovation	
	Committee: Noshir Contractor, Dashun Wang & Jorge Nocedal	
	Peking University , Beijing, China	
	B.Sc. , Statistics	Jun 2016
	B.Ec. , Economics	Jun 2016
	• Postdoctoral Speaker Award Finalist, APS Statistical and Nonlinear Physics	2023
	• Top 25 Papers in Social Sciences and Human Behaviour, Nature Communications	2022
	• Conference Travel Award, Northwestern University	2021
	• Rising Star in Data Science (Spotlight), University of Chicago	2021
	• Complex Systems Scholarship, Young Researchers in Complex Systems Society	2021
	• Top 100 Most-discussed Papers across All Sciences, Altmetric.com	2020
	• Conference Scholarship, Network Science Society Conference	2020
	• Young Network Scientist Award, Society of Young Network Scientists	2017
	• Graduate Fellowship, Northwestern University	2016

PUBLICATIONS ¶: equal contributions. Underline: students and postdocs I have mentored.

- JOURNAL PUBLICATIONS
- [1] Zihang Lin, **Yian Yin**, Lu Liu & Dashun Wang (2023)
SciSciNet: A large-scale open datalake for the science of science research
Scientific Data, **10**, 1: 315. 10.1038/s41597-023-02198-9
 - [2] **Yian Yin**, Yuxiao Dong, Kuansan Wang, Dashun Wang & Benjamin F. Jones (2022)
Public use and public funding of science
Nature Human Behaviour, **6**, 10: 1344–1350. 10.1038/s41562-022-01397-5
Previous version: NBER Working Paper w28748
 - [3] Jian Gao, **Yian Yin**, Kyle R. Myers, Karim R. Lakhani & Dashun Wang (2021)
Potentially long-lasting effects of the pandemic on scientists
Nature Communications, **1**, 12: 6188. 10.1038/s41467-021-26428-z
 - [4] **Yian Yin**¶, Jian Gao¶, Benjamin F. Jones & Dashun Wang (2021)
Coevolution of policy and science during the pandemic
Science, **371**, 6525: 128–130. 10.1126/science.abe3084
 - [5] Kyle R. Myers, Wei Yang Tham, **Yian Yin**, Nina Cohodes, Jerry G. Thursby, Marie C. Thursby, Peter Schiffer, Joseph T. Walsh, Karim R. Lakhani & Dashun Wang (2020)
Unequal effects of the COVID-19 pandemic on scientists
Nature Human Behaviour, **4**, 9: 880–883. 10.1038/s41562-020-0921-y
 - [6] Jichao Li, **Yian Yin**, Santo Fortunato & Dashun Wang (2020)
Scientific elite revisited: Patterns of productivity, collaboration, authorship and impact
Journal of the Royal Society Interface, **17**, 165: 20200135. 10.1098/rsif.2020.0135
 - [7] **Yian Yin**, Yang Wang, James A. Evans & Dashun Wang (2019)
Quantifying the dynamics of failure across science, startups and security
Nature, **575**, 7781: 190–194. 10.1038/s41586-019-1725-y
 - [8] Jichao Li, **Yian Yin**, Santo Fortunato & Dashun Wang (2019)
Nobel laureates are almost the same as us
Nature Reviews Physics, **1**, 5: 301–303. 10.1038/s42254-019-0057-z
 - [9] Jichao Li, **Yian Yin**, Santo Fortunato & Dashun Wang (2019)
A dataset of publication records for Nobel laureates
Scientific Data, **6**, 1: 33. 10.1038/s41597-019-0033-6
 - [10] **Yian Yin** & Dashun Wang (2017)
The time dimension of science: Connecting the past to the future
Journal of Informetrics, **11**, 2: 608–621. 10.1016/j.joi.2017.04.002
- WORKING PAPERS
- [11] Ryan R. Hill¶, **Yian Yin**¶, Carolyn Stein, Dashun Wang & Benjamin F. Jones
Adaptability and the pivot penalty in science and technology
R&R, *Nature*. Preprint: SSRN 3886142
- SELECTED WORK IN PROGRESS
- [12] **Yian Yin** & Dashun Wang
The drifting frontiers between science and society
 - [13] **Yian Yin** & Dashun Wang
Understanding the punctuated dynamics of scientific and technological frontiers
 - [14] **Yian Yin** & Dashun Wang
Universal limits of learning

	[15] Yang Wang, Yian Yin , Lu Liu & Dashun Wang Funding and the end of hot streaks in scientific careers	
	[16] Yifan Qian, Jian Gao, Yian Yin , Benjamin F. Jones, Peter Schifer & Dashun Wang Research topic diversity and convergence among US research universities	
	[17] Jian Gao, Yian Yin , Feixiong Cheng & Dashun Wang Structural transition in scientific knowledge predicts development of novel drugs	
	[18] Alexander C. Furnas, Jian Gao, Yian Yin & Dashun Wang The political mobilization of scientists and inventors in the United States	
PATENTS	[19] Dashun Wang, Yian Yin , Yang Wang & James A. Evans System and method to predict success based on analysis of failure US Patent Application 17/061,112	
GRANTS	<ul style="list-style-type: none"> • Proposal lead writer, “Understanding the early predictive signals of exceptional careers”, Schmidt Futures Foundation. [Pending] • Proposal lead writer, “Developing a quantitative framework to track and assess state-level policy responses to the COVID-19 pandemic”, Peter G. Peterson Foundation, <u>\$150,000</u>, 2021/04. • Co-PI/Organizer, “Summer Institute in Computational Social Science (Chicago)”, Social Science Research Council, <u>\$8,200</u>, 2021/02. • Proposal lead writer, “Quantifying the effects of COVID-19 pandemic on scientific workforce”, Department of Defense Minerva Award, <u>\$309,562</u>, 2020/05. • PI, “Structures and dynamics of package ecosystems”, SICSS Research Grant, <u>\$2,000</u>, 2018/08. 	
TUTORIALS	<ul style="list-style-type: none"> • Toward a quantitative understanding of failure <ul style="list-style-type: none"> • International Conference on Computational Social Science (IC²S²) 	2022/07
TALKS	<ul style="list-style-type: none"> • Panelist, Broadening the Agenda of SciSci for Innovation Scholarship in Management Academy of Management Annual Meeting, Boston, MA • Invited speaker, NBER Summer Institute Innovation workshop National Bureau of Economic Research, Boston, MA • Invited speaker, Science Foo Camp Google X, Mountain View, CA • Plenary speaker, Metascience 2023 National Academy of Sciences, Washington, DC • Invited talk, The Science of Networks in Communities (SONIC) Northwestern University, Evanston, IL • Speaker award session, APS - Statistical and Nonlinear Physics American Physics Society March Meeting, Las Vegas, NV • Invited talk, Computational Social Science Seminar MIT Media Lab, Cambridge, MA • Invited talk, Knowledge Engineering Group Seminar Tsinghua University (online) • Invited talk, INFORMS Annual Meeting Indianapolis, IN 	2023/08 2023/07 2023/07 2023/05 2023/04 2023/03 2022/12 2022/11 2022/10

- **Keynote speaker**, World Rechallenge Forum, FAILEXPO
Ministry of the Interior and Safety, Korea 2022/10
- **Panelist**, Mathematical Methods in Social Sciences
Swarma Club Computational Social Science Workshop (online) 2022/09
- **Invited talk**, International Workshop on Data-driven Science of Science
KDD 2022, Washington, DC 2022/08
- **Invited talk**, Industrial Engineering Seminar
Tsinghua University (online) 2022/07
- **Panelist**, The Science of Team Science and Innovation
NetSci 2022, Shanghai, China (online) 2022/07
- **Keynote**, International Conference on Science of Science and Innovation
National Academy of Sciences, Washington, DC 2022/06
- **Invited talk**, School of Public Policy
Georgia Institute of Technology (online) 2022/04
- **Invited talk**, School of Computer Science Seminar
Carnegie Mellon University, Pittsburgh, PA 2022/03
- **Invited talk**, Data Science Seminar
University of California San Diego (online) 2022/03
- **Invited talk**, Institute for Computational and Data Sciences Seminar
Pennsylvania State University (online) 2022/03
- **Invited talk**, Information Science Colloquium
Cornell University, Ithaca, NY 2022/03
- **Invited talk**, Interactive Computing Seminar
Georgia Institute of Technology (online) 2022/02
- **Invited talk**, Information Sciences Seminar
University of Illinois at Urbana-Champaign (online) 2022/02
- **Invited talk**, Computational Social Science Seminar
University of Pittsburgh (online) 2022/02
- **Invited talk**, Engineering Management and Systems Engineering Seminar
George Washington University (online) 2022/02
- **Invited talk**, Industrial Engineering Seminar
Purdue University (online) 2022/01
- **Invited talk**, Mechanical and Industrial Engineering Seminar
University of Toronto (online) 2022/01
- **Invited talk**, System Dynamics Seminar
MIT Sloan School of Management, Cambridge, MA 2021/12
- **Invited talk**, Sociology Department Colloquium
University of Chicago, Chicago, IL 2021/11
- **Invited talk**, Management & Organizations Seminar
NYU Stern School of Business (online) 2021/11

• Invited talk , Sociology Department Seminar Purdue University (online)	2021/11
• INFORMS Annual Meeting Anaheim, CA	2021/10
• Harvard Business School Digital Doctoral Workshop Boston, MA (online)	2021/09
• Minerva Research Network Workshop Wautoma, WI	2021/08
• International Conference on Computational Social Science (IC ² S ²) Zürich, Switzerland (online)	2021/07
• Networks 2021: A Joint Sunbelt and NetSci Conference Washington, DC (online)	2021/07
• Seminar, Stanford METRICS International Forum Meta-research Innovation Center, Stanford University (online)	2021/04
• Invited talk , Webinar, Saving Curies Series	2021/03
• Invited talk , Webinar, Swarma Club	2021/01
• Spotlight talk , Rising Stars in Data Science Workshop Data Science Institute, University of Chicago (online)	2021/01
• The 7 th Satellite on Quantifying Success, NetSci 2020 Roma, Italy (online)	2020/09
• Invited talk , Webinar ML Collective	2020/09
• International Conference on Computational Social Science (IC ² S ²) Boston, MA (online)	2020/07
• Seminar, Northwestern Institute on Complex Systems	2020/06
• Invited talk , Webinar, Aggregate Intellect (ai.science)	2020/02
• Invited talk , Northwestern Data Science Night	2020/02
• Invited talk , Michigan Institute for Data Science Symposium University of Michigan, Ann Arbor, MI	2019/11
• Seminar, Northwestern Institute on Complex Systems	2019/10
• Invited talk , Institute for Research on Innovation & Science Summit University of Michigan, Ann Arbor, MI	2019/09
• Invited talk , Great Lakes Data Science Workshop University of Notre Dame, Notre Dame, IN	2019/09
• International Conference on Computational Social Science (IC ² S ²) Amsterdam, Netherlands	2019/07
• NetSci 2019: International Workshop and Conference on Network Science Burlington, VT	2019/05

	<ul style="list-style-type: none"> • Invited talk, Center for Neuroscience Seminar Zhejiang University, Zhejiang, China 	2018/12
	<ul style="list-style-type: none"> • International Conference on Computational Social Science (IC²S²) Evanston, IL 	2018/07
	<ul style="list-style-type: none"> • Summer Institute in Computational Social Science (SICSS) Chicago, IL 	2018/06
	<ul style="list-style-type: none"> • Seminar, Northwestern IEMS-OM Collaborative Workshop 	2018/04
	<ul style="list-style-type: none"> • Northwestern Computational Research Day 	2018/04
	<ul style="list-style-type: none"> • Seminar, Northwestern SIAM Bridging the Gap 	2017/11
	<ul style="list-style-type: none"> • Northwestern Current Research & Future Careers Symposium 	2017/08
	<ul style="list-style-type: none"> • Invited talk, AI & Public Policy Symposium Tsinghua University, Beijing, China 	2017/07
	<ul style="list-style-type: none"> • Invited talk, Kaifeng Institute on Geometry and Statistical Learning Swarma Club, Beijing, China 	2017/07
	<ul style="list-style-type: none"> • Symposium for the Society of Young Network Scientists, NetSci 2017 Indianapolis, IN 	2017/06
	<ul style="list-style-type: none"> • NetSci 2017: International Workshop and Conference on Network Science Indianapolis, IN 	2017/06
	<ul style="list-style-type: none"> • Seminar, Northwestern Institute on Complex Systems 	2017/05
	<ul style="list-style-type: none"> • Seminar, Kellogg MORS Macro Brown Bag 	2017/05
	<ul style="list-style-type: none"> • Kellogg-Booth Student Symposium, Chicago, IL 	2017/04
	<ul style="list-style-type: none"> • Chicago Area SIAM Student Conference, Chicago, IL 	2017/04
MENTORING	PhD students <ul style="list-style-type: none"> • Xinyu Yang, Cornell University • Keigo Kusumegi, Cornell University • Simon Trlifaj, Central European University • Jichao Li, National University of Defense Technology <i>Current appointment:</i> Assistant Professor, National University of Defense Technology	2023-2028 2023-2028 2023 2017-2019
	Undergraduate students <ul style="list-style-type: none"> • Zihang Lin, Fudan University • Zifeng Liu, Xi'an Jiaotong University • Zishan Gu, Sun Yat-sen University <i>Current appointment:</i> PhD student, Northwestern University <i>Current appointment:</i> Master student, Georgia Institute of Technology <i>Current appointment:</i> PhD student, Ohio State University	2021-2023 2021-2022 2020
TEACHING	Northwestern University , Evanston, IL Computational Social Science: Emerging Topics: MORS 521 / IEMS 490 <ul style="list-style-type: none"> • Spring 2023, PhD course for management and engineering students. 	Teaching Assistant

Social Dynamics & Networks: MORSX 945

- Winter 2022/2023, EMBA course at Kellogg School of Management.

Social Dynamics & Network Analytics: MORS 457

- 9 sessions (2017-2022), MBA course at Kellogg School of Management.

Human & Machine Intelligence: MORS 950

- Spring 2021, MBA course at Kellogg School of Management.

Statistical Decision Analysis: MECNX 434

- Winter 2018, EMBA core course at Kellogg School of Management.

Data Science and Programming Workshops

- Summer 2018, serial workshop by Northwestern Research Computing.

Summer Institute in Computational Social Science (SICSS), Chicago, IL*Instructor***Computational Social Science**

- SICSS-Chicago 2021, 30 students from social and computational science.

**ACADEMIC
SERVICE****Organizer**

- Summer Institute in Computational Social Science (SICSS-Chicago) 2021

Award Committee

- Best Paper Award Committee, 2022
International Conference on Computational Social Science (IC²S²)

Program Committee

- **Co-Chair**, International Conference on the Science of Science and Innovation (ICSSI) 2023
- ICDM: International Workshop on AI for Science of Science (AI4SciSci) 2023
- International Conference on Complex Networks and Their Applications 2023
- International Conference on Computational Social Science (IC²S²) 2023
- ACM International Conference on Information and Knowledge Management (CIKM) 2023
- ACM International Conference on Web Search and Data Mining (WSDM) 2023
- International Workshop and Conference on Network Science (NetSci) 2023
- ACM International Conference on Web Science (WebSci) 2022-2023
- International World Wide Web Conference (TheWebConf) 2021-2023
- International AAAI Conference on Web and Social Media (ICWSM) 2021-2023
- *Best Program Committee Member Award (2021)*

Referee

- Funding Agencies: National Science Foundation.
- Multidisciplinary Sciences: Nature, Proceedings of the National Academy of Sciences, Nature Communications, Nature Human Behaviour, Science Advances, Royal Society Open Science, Scientific Reports, PLOS One.
- Physical Sciences: Europhysics Letters (Distinguished Reviewer Award), Physica A: Statistical Mechanics and its Applications, EPJ Data Science.
- Computing & Information Sciences: ACM Transactions on Intelligent Systems and Technology, IEEE Transactions on Big Data, IEEE Transactions on Network Science and Engineering, Journal of Informetrics (Outstanding Reviewer Award), Scientometrics, Quantitative Science Studies, Journal of the Association for Information Science and Technology, PeerJ Computer Science.

- Social & Management Sciences: Journal of Computer-Mediated Communication, Science and Engineering Ethics, Social Network Analysis and Mining, AI & Society: Knowledge, Culture and Communication, Annual Meeting of the Academy of Management (Best Reviewer Award, Technology and Innovation Management).

IN THE PRESS

List of selected media coverage

Public use and public funding of science

- *Wire*: Science has a communication problem – and a connection problem
- *New things under the sun*: Do academic citations measure the impact of new ideas?
- *Kellogg Insight*: Does public benefit from scientific research it funds?
- *Phys.org*: Government-funded scientific research reflects public interest, study finds
- *Altmetric*: Breaking down barriers – Rethinking assumptions on research and impact

Adaptability and the pivot penalty in science and technology

- *New things under the sun*: Building a new research field
- *Science*: Pivot into COVID-19 research eases as publishing surge starts to level off

Potentially long-lasting effects of the pandemic on scientists

- *Forbes*: The bad news, good news, bad news about COVID's impact on scientific research
- *Science*: The pandemic's slowing of research productivity may last years
- *Nature*: The COVID pandemic has harmed researcher productivity – and mental health
- *Scientific American*: A high-speed scientific hive mind emerged from the COVID pandemic
- *Physics World*: New non-COVID research projects plunge by a third since the start of the pandemic
- *GenomeWeb*: Pandemic, productivity, and optimism
- Other coverages include ScienMag, Lab Manager, Medical News, and Scitech Daily.

Coevolution of policy and science during the pandemic

- *The Scientist*: WHO leads in using solid science to draft COVID-19 policy
- *EurekAlert*: Policymakers draw heavily from highly cited COVID-19 science
- *Kellogg Insight*: How well does COVID public policy align with science?
- Other coverages include Science Policy News, ScienMag, Lab Manager, Tyee and FROMTBOT.

Unequal effects of the COVID-19 pandemic on scientists

- *Forbes*: COVID's surprising toll on careers of women scientists
- *Forbes*: COVID-19's effects on women in science intensify disparities
- *The Atlantic*: How science beat the virus
- *Times Higher Ed*: Pandemic lockdown holding back female academics, data show
- *Times Higher Ed*: Childcare the key limit on scientists' pandemic working hours
- *Inside Higher Ed*: University research: a time of disparate change
- *Inside Higher Ed*: Keeping COVID-19 from sidelining equity
- *Inside Higher Ed*: Implementing pandemic equity measures for faculty
- *Scientific American*: Women in science may suffer lasting career damage from COVID-19
- *Scientific American*: COVID has laid bare the inequities that face mothers in STEM
- *Science*: Pandemic hits scientist parents hard
- *The Scientist*: Pandemic pressures may drive young scientists away from autism research
- *AAAS*: Institutions must support minority researchers impacted by COVID-19
- *Wire*: COVID-19 changed scientists' research methods, will this change science itself?
- *EurekAlert*: Pandemic disproportionately affects scientists with young children
- *Kellogg Insight*: The pandemic has slashed scientists' productivity

- Other coverages include Medium, Spectrum News, Science Policy News, ThePaper.cn, Deccan Herald, Lab Manager, ScienMag, Oxford Student, Phys.org, Psychology Today, ASBMB Today, Marketplace, Chemistry Views and Chemistry World.

Scientific elite revisited: Patterns of productivity, collaboration, authorship and impact

- *Daily Mail*: The Nobel curse is REAL
- *The Times*: Scientists fall foul of Nobel curse
- Other coverages include Phys.org and Chemistry World.

Quantifying the dynamics of failure across science, startups and security

- *Inc.*: 5 ways to avoid startup failure by increasing your team's learning speed
- *Fast Company*: Science reveals the tipping point between success and failure
- *Global Advisors*: Why failing fast is critical if you want to eventually win
- *Washington Post*: The lasting lesson of this Super Bowl: failure is necessary
- *Forbes*: Don't fail fast – fail smart
- *MIT Technology Review*: How the data mining of failure could teach us the secrets of success
- *Harvard Business Review*: The tipping point between failure and success
- *Scientific American*: Failure found to be an “essential prerequisite” for success?
- *Medium*: Ignite success sooner: 2 ways to fail better
- *Discover Magazine*: How failing could actually help us succeed
- *Science Daily*: Failure prognosis: Data science predicts which failures will ultimately succeed
- *Business Insider*: Researchers found a key reason certain people succeed while others fall behind, and it starts with learning from past mistakes
- *Communications of ACM*: How the data mining of failure could teach us the secrets of success
- *Lancet*: Offline: It's time to prepare your anti-CV
- *Kellogg Insight*: Why do some people succeed after failing while others continue to flounder?
- Other coverages include Science Policy News, Lab Manager, YCombinator Hacker News, China.org, Xinhua, News Ghana, Slate France, internetactu, ZAP, Sohu News and Phys.org.

Nobel laureates are almost the same as us

- *Physics Today*: The Nobel Prize in physics: The papers
- *Kellogg Insight*: Nobel Prize winners – They're just like us!
- *Inside Science*: Getting ready for the 2019 Nobel Prizes