Yian Yin

CONTACT INFORMATION

Northwestern University
Kellogg Center for Science of Science and Innovation — yianyin@u.northwestern.edu
Northwestern Institute on Complex Systems — https://www.yianyin.net
600 Foster Street, Evanston, IL 60208 — Updated August 2021

EDUCATION

Northwestern University, Evanston, IL, USA
Ph.D., Industrial Engineering and Management Sciences — Expected 2022
McCormick School of Engineering and Applied Sciences
Committee: Noshir Contractor[chair], Dashun Wang[co-chair], Jorge Nocedal
M.Sc., Industrial Engineering and Management Sciences — Dec 2017

Peking University, Beijing, China
B.Sc., Statistics — Jun 2016
School of Mathematical Sciences
B.Ec., Economics — Jun 2016
National School of Development

ACADEMIC POSITIONS

Northwestern University, Evanston, IL, USA
Graduate Research Assistant, — Sep 2016 to Present
Kellogg Center for Science of Science and Innovation
Northwestern Institute on Complex Systems

Microsoft Research, Redmond, WA, USA
Visiting Researcher, — Oct 2018 to Nov 2018
Microsoft Academic Graph Analytics

Pennsylvania State University, University Park, PA, USA
Summer Visiting Student, — Jul 2015 to Oct 2015
College of Information Sciences and Technology

Peking University, Beijing, China
Undergraduate Research Assistant, — May 2014 to Jun 2016
Center for Information Sciences

SELECTED AWARDS

- *Best Reviewer*, AOM Annual Meeting (Technology & Innovation Management) — 2021
- *Complex Systems Scholarship*, Young Researchers in Complex Systems Society — 2021
- *Best Reviewer*, ICWSM: International AAAI Conference on Web and Social Media — 2021
- *Rising Star in Data Science* (*Spotlight*), University of Chicago — 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

RESEARCH INTEREST

Computational Social Science, **Science of Science and Innovation**, **Complex System Modeling**

My research examines a variety of individual, social, and environmental factors and processes that drive the **success and failure in science and innovation**. By leveraging new and increasingly available large-scale datasets capturing the innerworkings of science, innovation, and other socio-economic institutions, I use and develop novel computational tools to better understand the key mechanisms that promote (or inhibit) progress and advancement in science, the fundamental engine of economic growth and prosperity. I have also used science and innovation as a powerful lens to examine broader processes and outcomes in management and organizations.

PUBLICATIONS

¶: equal contributions. ‡: students I have mentored.

JOURNAL PUBLICATIONS

[1] **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

[2] 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

[3] 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

[4] **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

[5] 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

[6] 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

[7] **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

[8] **Yian Yin**, Yuxiao Dong, Kuansan Wang, Dashun Wang & Benjamin F. Jones
Science as a public good: Public use and funding of science
NBER Working Paper w28748, R&R at *Nature Human Behaviour*

[9] Ryan R. Hill¶, **Yian Yin**¶, Carolyn Stein¶, Dashun Wang & Benjamin F. Jones
Adaptability and the pivot penalty in science
SSRN 3886142, under review at *Science*

[10] Jian Gao, **Yian Yin**, Kyle R. Myers, Karim R. Lakhani & Dashun Wang
Loss of new ideas: Potentially long-lasting effects of the pandemic on scientists
SSRN 3890190, R&R at *Nature Communications*

[11] **Yian Yin** & Dashun Wang
Quantifying record-breaking dynamics in science and technology

[12] **Yian Yin** & Dashun Wang
Universal limits of learning

SELECTED WORK IN PROGRESS

[13] Suman K. Maity¶, Zishan Gu¶‡, **Yian Yin** & Dashun Wang
Grants and research outputs

[14] Zihang Lin‡, **Yian Yin**, Lu Liu & Dashun Wang
SciNet: A large-scale open datalake for science of science and innovation

[15] **Yian Yin**[¶], Kariyushi Rao[¶] & Dashun Wang
How memory affects search in rugged landscapes: An experimental study

[16] Alexander C. Furnas, Jian Gao, **Yian Yin** & Dashun Wang
The political mobilization of scientists in the United States

PATENTS

[17] 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

[1] SICSS Seed Research Grant, **$2,000** — *Principal Investigator*
Structures and dynamics of package ecosystems — 2018/08

[2] Minerva Research Initiative, **$309,562** — *Proposal lead writer*
Quantifying the effects of COVID-19 pandemic on scientific workforce — 2020/05

[3] Social Science Research Council, **$8,200** — *Organizer*
4th Summer Institute in Computational Social Science Chicago — 2021/02

[4] Peter G. Peterson Foundation, **$150,000** — *Proposal lead writer*
Developing a quantitative framework to track and assess
state-level policy responses to the COVID-19 pandemic — 2021/04

TEACHING

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

Lectures in Computational Social Science
- SICSS-Chicago 2021, 30 students from social and computational science.

Northwestern University, Evanston, IL — *Teaching Assistant*

Social Dynamics and Network Analytics (MORS 457)
- 8 sessions (2017-2020), MBA course at Kellogg School of Management.

Human and 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.

TALKS

1. INFORMS Annual Meeting
Anaheim, CA — scheduled 2021/10
2. Harvard Business School Digital Doctoral Workshop
Boston, MA (online) — scheduled 2021/09
3. Minerva Research Network Workshop
Wautoma, WI — 2021/08
4. International Conference on Computational Social Science (IC^2S^2)
Zürich, Switzerland (online) — 2021/07
5. Networks 2021: A Joint Sunbelt and NetSci Conference
Washington, DC (online) — 2021/07
6. Seminar, Stanford METRICS International Forum
Meta-research Innovation Center, Standford University (online) — 2021/04
7. Invited speaker, Webinar, Saving Curies Series — 2021/03

8. Invited speaker, Webinar, Swarma Club 2021/01

9. Spotlight speaker, Rising Stars in Data Science Workshop
Center for Data and Computing, University of Chicago (online) 2021/01

10. The 7th Satellite on Quantifying Success, NetSci 2020 2020/09

11. Invited speaker, Webinar ML Collective 2020/09

12. International Conference on Computational Social Science (IC^2S^2)
Boston, MA (online) 2020/07

13. Seminar, Northwestern Institute on Complex Systems 2020/06

14. Invited speaker, Webinar, Aggregate Intellect (ai.science) 2020/02

15. Invited speaker, Northwestern Data Science Night 2020/02

16. Invited speaker, Michigan Institute for Data Science Symposium
University of Michigan, Ann Arbor, MI 2019/11

17. Seminar, Northwestern Institute on Complex Systems 2019/10

18. Invited speaker, Institute for Research on Innovation & Science Summit
University of Michigan, Ann Arbor, MI 2019/09

19. Invited speaker, Great Lakes Data Science Workshop
University of Notre Dame, Notre Dame, IN 2019/09

20. International Conference on Computational Social Science (IC^2S^2)
Amsterdam, Netherlands 2019/07

21. NetSci 2019: International Workshop and Conference on Network Science
Burlington, VT 2019/05

22. Invited speaker, Seminar, Center for Neuroscience, Zhejiang University
Hangzhou, Zhejiang, China 2018/12

23. International Conference on Computational Social Science (IC^2S^2)
Evanston, IL 2018/07

24. Summer Institute in Computational Social Science (SICSS)
Chicago, IL 2018/06

25. Seminar, Northwestern IEMS-OM Collaborative Workshop 2018/04

26. Speaker, Northwestern Computational Research Day 2018/04

27. Seminar, Northwestern SIAM Bridging the Gap 2017/11

28. Speaker, Northwestern Current Research & Future Careers Symposium 2017/08

29. Invited speaker, AI & Public Policy Symposium
Tsinghua University, Beijing, China 2017/07

30. Invited participant, Kaifeng Institute on Geometry and Statistical Learning
Swarma Club, Beijing, China 2017/07

31. Symposium for the Society of Young Network Scientists, NetSci 2017
Indianapolis, IN 2017/06

32. NetSci 2017: International Workshop and Conference on Network Science
Indianapolis, IN 2017/06

33. Seminar, Northwestern Institute on Complex Systems 2017/05

34. Seminar, Kellogg MORS Macro Brown Bag 2017/05

35. Speaker, Kellogg-Booth Student Symposium, Chicago, IL 2017/04

36. Speaker, Chicago Area SIAM Student Conference, Chicago, IL 2017/04

ACADEMIC SERVICE

Organizer

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

Volunteer

- International Conference on Computational Social Science (IC^2S^2) 2018

Program Committee

- International World Wide Web Conference (TheWebConf) 2021
- International AAAI Conference on Web and Social Media (ICWSM) **[Best reviewer]** 2021

Referee

- Scientific Reports 2017
- PLOS One 2017-2021
- Europhysics Letters **[Distinguished reviewer]** 2018
- Physica A: Statistical Mechanics and its Applications 2018
- Scientometrics 2021
- Journal of Informetrics **[Outstanding reviewer]** 2017-2019
- Journal of the Association for Information Science and Technology 2021
- IEEE Transactions on Network Science and Engineering 2018
- IEEE Transactions on Big Data 2020
- PeerJ Computer Science 2019-2020
- Social Network Analysis and Mining 2019-2020
- AI & Society: Knowledge, Culture and Communication 2020
- ACM Web Science Conference 2020
- International Conference on Computational Social Science 2020
- Annual Meeting of the Academy of Management **[Best reviewer]** 2020-2021

IN THE PRESS

List of selected media coverage

[1] 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, The Tyee and FROMTBOT.

[2] 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.

[3] 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.

[4] 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
- *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.

[5] 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