Jianjian Gao

Postdoc research associate

School of Data Science, University of Virginia, Charlottesville, Virginia, USA

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Research Interests

Science of science;Computational social science; Network science; Causal inference

I mainly conduct quantitative research in the field of Science of Science and Computational Social Science using various quantitative methods, including network analysis, econometrics and machine learning.

Academic Experience

2023-present **Postdoc research associate**, School of Data Science, University of Virginia.
Supervisor: Alex Gates (hgt6rn@virginia.edu)

2017-2018 **Research assistant**, Department of Energy and Power Engineering, Tsinghua University.

Education

Queen Mary University of London *London*

PhD in Business and Management (Computational Social Science) *2018 - 2022*

- Supervisor: Prof. Pietro Panzarasa (p.panzarasa@qmul.ac.uk)

Institute of Engineering Thermophysics, Chinese Academy of Sciences *Beijing*

Master in Power Engineering *2013 - 2016*

- Supervisor: Prof. Hui Hong; GPA: 84.41/100

Shandong University *Shandong*

Bachelor in Thermal Energy and Power Engineering *2009 - 2013*

- GPA: 87.91/100. Outstanding Graduates Awards of Shandong Province (2013); National Endeavour Scholarship (2012); Research and Innovation of Advanced Personal (2011); The First Prize Scholarship (2010); Merit student (2010)

Industry Experience

2016-2017 **Assistant engineer**, Beijing Petrochemical Engineering Co., LTD.(BPEC)

Publications

Published

Carattini, Stefano, Sam Fankhauser, **Jianjian Gao**, Caterina Gennaioli, and Pietro Panzarasa. What does network analysis teach us about international environmental cooperation? Ecological Economics. 2023, 205:107670. (**One chapter of the PhD thesis**)

Stefano Carattini, Sam Fankhauser, **Jianjian Gao**, Caterina Gennaioli, Pietro Panzarasa. The global network of environmental agreements: a preliminary analysis. Annual Bank Conference on Development Economics 2019, Washington, DC.

Jianjian Gao. International environmental cooperation and climate change laws: A quantitative analysis. 2022. Queen Mary University of London (**PhD thesis**).

Hui Hong, **Jianjian Gao**, Wanjun Qu, et al. Thermodynamic analyses of the solar-driven Kalina cycle having a variable concentration ratio. Applied Thermal Engineering. 2017, 126: 997-1005. (**Part of Master thesis**)

Jianjian Gao, Hui Hong, Jie Sun, et al. Study on the performance of concentrated solar Kalina cycle with variable mirror area parabolic trough collector. Journal of Engineering Thermophysics. 2016, 37(8):1595-1601. (EI)

Hao Zhang, Hui Hong, **Jianjian Gao**, et al. Thermodynamic performance of a mid-temperature solar fuel system for cooling, heating and power generation. Applied Thermal Engineering, 2016, 106:1268-1281.

In Review

Alexander J. Gates, Indraneel Mane, and **Jianjian Gao**. The increasing fragmentation of global science and the diffusion of ideas. 2024.

Working papers

Jianjian Gao, Alexander J. Gates. Country self-preference and national research systems: A path to independence or isolation?

Jianjian Gao, Alexander J. Gates. The changing landscape of academic leadership: A study of presidents at US R1s.

Jianjian Gao, Ty Benjamin Misiorek, Alexander J. Gates. Connected boards, diverse leaders: How networks shape university presidencies.

Jianjian Gao, YingChong Wang, Alexander J. Gates. Who gets seen? Nationality bias in international art exhibitions.

Jianjian Gao, Pietro Panzarasa. Regionalisation of international environmental cooperation: Evidence from community structure analysis.

Patents

Hui Hong, Jie Sun, **Jianjian Gao**. Wide-range irradiation and without energy storage concentrating solar energy Kalina power generation system and method. Beijing: CN105156285A, 2015.12.16.

Presentations

ICSSI, Jul 1-3, 2024, DC, USA – **Jianjian Gao** and Gates, Alexander J. The changing landscape of academic leadership: A study of presidents at US R1s. (Poster)

ICSSI, Jul 1-3, 2024, DC, USA – Gates, Alexander J., Indraneel Mane, and **Jianjian Gao**. The increasing fragmentation of global science limits the diffusion of ideas. (Lightning talk)

IC2S2, Jul 18-20, 2024, Philadelphia, USA – Gates, Alexander J., Indraneel Mane, and **Jianjian Gao**. The increasing fragmentation of global science limits the diffusion of ideas. (Poster)

NetSci, Sep 17-25, 2020, Roma, Italy – **Jianjian Gao**, Caterina Gennaioli, Pietro Panzarasa. Communities and rich clubs in the international environmental cooperation network. International School and Conference on Network Science. (Poster)

IC2S2, 2020, MA USA – **Jianjian Gao**, Stefano Carattini, Sam Fankhauser, Caterina Gennaioli, Pietro Panzarasa. Structure and Evolution of the International Environmental Cooperation Network. 6th International Conference on Computational Social Science. (Talk)

IC2S2, 2020, MA USA – **Jianjian Gao**, Caterina Gennaioli, Pietro Panzarasa. Communities and rich clubs in the international environmental cooperation network. 6th International Conference on Computational Social Science. (Poster)

IC2S2, 2019, Netherlands – **Jianjian Gao**, Caterina Gennaioli, Pietro Panzarasa. Structure and evolution of the network of countries signing global environmental treaties. 5th International Conference on Computational Social Science. (Poster)

Teaching Experience

Queen Mary University of London *London*

Teaching Assistant *Spring 2022*

- **Experiments for business and analytics (BUSM106)**.
- This course deals with **advanced econometrics** and **R** programming for master's students. I mainly taught students how to use **R** to perform all kinds of causal analysis.

Queen Mary University of London *London*

Teaching Assistant *Fall 2022*

- **Quantitative Research Methods (BUSM014)**.
- This course is designed for master's students, covering basic elements of **statistical methods**, including descriptive statistics, probability, sampling, inference, and multivariate regression analysis. I mainly taught students how to use **Stata** to perform relevant analysis.

Skills

Programming skills: Python, Stata, R, Bash/shell scripting, HPC, SQL

Computational skills: Network science, Econometrics, Bayesian inference, Machine learning, Deep learning.