

Keigo Kusumegi

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Computational Social Scientist and PhD Student in Information Science with expertise in network science, machine learning, and data-driven methods to study collective phenomena and innovation. Seeking to apply advanced analytical techniques to projects focused on **the broad impact of AI on scientific discovery and societal impact**

Education

Cornell University (Ithaca, NY), PhD program in Information Science	Aug. 2023 –
Advisor: Yian Yin	
University of Tsukuba (Ibaraki, Japan), MSs in Policy and Planning Sciences	Apl. 2021 – Mar. 2023
University of Tsukuba (Ibaraki, Japan), B.S. in Policy and Planning Sciences	Apr. 2017 – Mar. 2021

Publications

[¶]denotes equal contributions

1. **Kusumegi, K.**, ¶ Yang, X., ¶ Ginsparg, P., De Vaan, M., Stuart, T., Yin, Y. Scientific production in the era of large language models. *Science*, 390, 1240-1243 (2025) [link](#)
2. **Kusumegi, K.**, Yin, Y. The Specialization of interdisciplinary innovators in science and technology. (working paper)
3. **Kusumegi, K.**, Daniel E. A., Yukie S. Dissecting the Gender Divide: Authorship and Acknowledgment in Scientific Publications. (under review) [link](#)
4. **Kusumegi, K.**, Sano, Y. Dataset of identified scholars mentioned in acknowledgement statements. *Scientific Data* 9, 461 (2022). [link](#)
5. **Kusumegi K.**, Sano, Y. 2021. Citations and Gender Diversity in Reciprocal Acknowledgement Networks. Preprint at *arXiv:2104.01729* (2021). [link](#)

Research Experiences

Yin's Lab at Cornell University	Aug. 2023 – Current
<i>Graduate Research Assistant</i>	Ithaca, NY
<ul style="list-style-type: none">• Quantified the influence of Large Language Models on scientific production using large-scale publication metadata analysis applying difference-in-differences frameworks• Developed a systematic approach to estimate AI usage in scientific articles and quantify its impact on writing styles and citation behavior• Evaluated the application of AI across various scientific fields to acceleration in scientific discovery• Explored the complex interaction between individual knowledge expertise and project alignment	

Mentorships

- Supervised undergrad and master's student research projects, providing weekly guidance on methodology
- Provided technical assistance of coding and text analysis for Humanity PhD students at Summer Graduate Fellowship in Digital Humanities

Sano Lab at University of Tsukuba	Apr. 2021 – Jun. 2023
<i>Graduate Research</i>	Ibaraki, Japan
<ul style="list-style-type: none">• Uncovered hidden academic collaboration networks by parsing contribution acknowledgments in scientific articles, providing a deeper understanding of team dynamics	

Research Internships and Industrial Experiences

G-RIPS

Research internship

Jun. 2021 – Aug. 2021

Sendai, Japan

- Designed and implemented an optimization algorithm of wireless base station placement using topology and graph theory

OPTiM Corporation

Research internship

Sep. 2020 – Oct. 2020

Tokyo, Japan

- Developed CNN-based multi-object detection model for industrial quality control

MARK Creative

Software engineer

Jan. 2019 – Jul. 2023

Ibaraki, Japan

- Designed and implemented graph database and its API for data analysis and system optimizations

Awards

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| • Funai Overseas Scholarship (\$120K) | 2023 |
| • QUAD Fellowship (\$50K) | 2023 |
| • University of Tsukuba President's Commendation | 2023 |
| • Tsukuba Graduate Study Scholarship | 2023 |
| • Nakagawa Ikueikai Scholarship | 2021 |
| • Best Poster Award | 2021 |
| • Scholarship from the Japan Society for The Promotion of Science | 2018 |

Technical skills

Python • Polars • FastAPI • SQL • BigQuery • S3 • PyTorch • Neo4j • LATEX • Docker • Git • Bash