

# Taihei Sone

## Curriculum Vitae

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### Education

- 2024–2026 **M.S. in Data Science**, *University of Colorado Boulder*, Boulder, CO, USA  
(expected)
- 2017–2019 **M.Eng. in Engineering**, *University of Tokyo*, Tokyo, Japan  
GPA: 4.0/4.0  
Thesis: *Simulation analysis of bank network stabilization by liquidity risk management*
- 2012–2017 **B.Eng. in Engineering**, *University of Tokyo*, Tokyo, Japan  
Thesis: *An analysis of policies for the stabilization of interbank network using agent-based simulation*

### Research Interests

- Topics Multi-Agent Simulation with AI Agents; Interpretable and Human-Centered AI; Scalable Data Architectures; Artificial General/Superintelligence; LLM-based NLP; Machine Learning for Economic and Financial Time-Series.

### Research Experience

- 2025–present **Graduate Researcher**, *University of Colorado Boulder*, Boulder, CO, USA  
Conducted empirical analysis on the relationship between domestic violence (DV), COVID-19 lockdowns, mobility restrictions, and the slowdown of economic activity in Colorado.
- 2021–2024 **Researcher**, *Bank of Japan*, Tokyo, Japan  
Conducted empirical research on interest rate swap data to assess regulatory impacts and monetary policy transmission, in collaboration with a professor and other economists.
- 2017–2019 **Graduate Researcher**, *University of Tokyo*, Tokyo, Japan  
Developed agent-based simulations to evaluate interbank liquidity stress and regulatory effects, culminating in a master's thesis and academic presentation.
- 2017 **Research Intern**, *Mitsubishi UFJ Trust Investment Technology Institute Co., Ltd.*, Tokyo, Japan  
Earned academic credit through a two-week internship focused on financial data analysis and machine learning applications, culminating in a final presentation titled "Predicting Short-Term Order Patterns Using Machine Learning."
- 2016–2017 **Undergraduate Researcher**, *University of Tokyo*, Tokyo, Japan  
Simulated financial contagion in interbank networks and evaluated stabilization policies; results were compiled in a bachelor's thesis and presented at a conference.

### Professional Experience

- 2019–present **Bank of Japan**, *Tokyo, Japan & Boulder, CO, USA*  
On study leave sponsored by the Bank of Japan, pursuing an M.S. in Data Science at the University of Colorado Boulder (since 2024).  
Former roles: Data Scientist (Financial Markets; Payment & Settlement Systems) and Economist (Kagoshima Branch); work included OTC-derivatives analytics, payment-system stability simulations, regional economic research, and contributions to international central-bank meetings.

## Technical Skills

Tools Python, R, C++, Java, VBA, X10; Linux, VirtualBox, Git, Jupyter, RStudio, VS Code, Eclipse, Generative AI APIs, Google Cloud Platform (GCP), L<sup>A</sup>T<sub>E</sub>X

## Publications & Presentations

- Conference Paper & Presentation Sone, T. (2025). *Wage sentiment indices derived from survey comments via large language models*. Accepted for publication in the Proceedings of the 2025 IEEE International Conference on Big Data (IEEE BigData 2025). arXiv:2509.00290 [cs.CL]. This research is scheduled to be presented as a poster at the following conference:
- 2025 IEEE International Conference on Big Data (IEEE BigData 2025), Macau, China, December 8–11, 2025.
- Working Paper & Presentations Maehashi, K., Miyakawa, D., Sasaki, T., and Sone, T. (2025). *Skewed interest rate expectations and effects of central banks' market operations: empirical findings using granular transaction data*. Bank of Japan Working Paper Series No. 25-E-7. This manuscript is currently under review for publication in the *Review of Monetary and Financial Studies*. This research has been presented at, and will further be presented at, the following conferences:
- 19th International Joint Conference CFE–CMStatistics 2025 (Computational and Methodological Statistics & Computational and Financial Econometrics), Birkbeck, University of London, London, United Kingdom, December 13–15, 2025. Conference Abstract
  - Japan Society of Monetary Economics (JSME) 2025 Autumn Meeting, Nagasaki University, Nagasaki, Japan, November 15–16, 2025. Conference Abstract
  - International Symposium on Advances in Quantitative Finance and Actuarial Science, organized by the Japanese Association of Financial Econometrics and Engineering (JAFEE), the Society for Financial and Insurance Econometrics (SOFINE), and the Institute of Statistical Mathematics (ISM), Seijo University, Tokyo, Japan, September 20–21, 2025. Conference Abstract
- Working Paper & Presentations Miyakawa, D., Oda, T., and Sone, T. (2023). *Regulatory reforms and price heterogeneity in an OTC derivative market*. Bank of Japan Working Paper Series No. 23-E-12. This research has been presented at the following conferences, workshops, and seminars:
- Finance Workshop, Institute for Monetary and Economic Studies (IMES), Bank of Japan, Tokyo, Japan (online), November 10, 2023. IMES Newsletter Report
  - 2023 SKKU–KAFE International Conference on Finance and Economics (Sungkyunkwan University and Korean Association of Financial Engineering), Sungkyunkwan University, Seoul, Korea, October 25–27, 2023. Conference Program (PDF)
  - JAFEE 59th 2023 Summer Conference (The Japanese Association of Financial Econometrics and Engineering), Seijo University, Tokyo, Japan, August 17, 2023. Conference Program (PDF, in Japanese)
  - First Waseda Summer Workshop in Finance, Waseda University, Tokyo, Japan, July 22, 2023. Workshop Page
  - Finance Workshop, Financial Services Agency, The Japanese Government (JFSA), Tokyo, Japan (online), July 2023. (no webpage available)
  - 4th Fall Conference of the Nippon Finance Association (NFA), Nagoya University of Commerce & Business, Aichi, Japan, November 5, 2022. Conference Program (PDF, in Japanese)
  - Finance Seminar, School of Commerce, Waseda University, Tokyo, Japan, October 2022. (no webpage available)
  - Faculty Seminar, School of Business Administration, Hitotsubashi University, Tokyo, Japan, August 2022. (no webpage available)

- 7th Finance Workshop, Hitotsubashi University Center for Financial Research (HCFR), Tokyo, Japan, July 14, 2022. Workshop Report
- Brown Bag Seminar, Institute for Monetary and Economic Studies (IMES), Bank of Japan, Tokyo, Japan, July 2022. (no webpage available)
- Finance Workshop, The Research Institute of Economy, Trade and Industry (RIETI), Tokyo, Japan (online), June 2022. (no webpage available)
- Finance Workshop, Financial Services Agency, The Japanese Government (JFSA), Tokyo, Japan (online), June 2022. (no webpage available)

Conference Sone, T., Izumi, K., Sakaji, H., Matsushima, H., and Shimada, T. (2019). *Simulation analysis of bank network stabilization by liquidity risk management*, presented at the 22nd Meeting of the Special Interest Group on Financial Informatics (SIG-FIN), the Japanese Society for Artificial Intelligence (JSAl), Seikei University, Tokyo, Japan, March 3, 2019. Conference Paper (in Japanese)

Conference Yonenoh, H., Sone, T., and Izumi, K. (2017). *An analysis of policies for the stabilization of interbank network using agent-based simulation*, presented at the 31st Annual Conference of the Japanese Society for Artificial Intelligence (JSAl), WINC AICHI, Aichi, Japan, May 23–26, 2017. Conference Paper (in Japanese)

## Teaching & Academic Experience

- 2025 **Teaching Assistant**, *University of Colorado Boulder*, Boulder, CO, USA  
Supported the lecture on “Data Structures and Algorithms.”
- 2018–2019 **Teaching Assistant**, *University of Tokyo*, Tokyo, Japan  
Supported the lecture on “Strategic Management of Technology (Fukan Keieigaku).”
- 2018 **Teaching Assistant**, *National University of Timor-Leste*, Dili, Timor-Leste  
Assisted in teaching mathematics, physics, and programming through the Japan International Cooperation Agency (JICA) Internship.
- 2017–2018 **Teaching Assistant (Volunteer)**, *University of Tokyo*, Tokyo, Japan  
Provided support in Japanese language instruction for international students as part of a volunteer teaching program.

## Awards

- 2019 Department Chair’s Award (Top Student in Department), University of Tokyo

## Languages

- |          |               |                                |
|----------|---------------|--------------------------------|
| Japanese | Native        |                                |
| English  | TOEFL iBT 102 | <i>Speaking 24, Writing 25</i> |

## References

Available upon request