

# Kashin Sugishita | CV

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## Contact Information

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Kashin Sugishita  
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## Professional Positions

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<b>Assistant Professor</b> Department of Transdisciplinary Science and Engineering School of Environment and Society Tokyo Institute of Technology, Japan	04/2021 - Present
<b>Visiting Scholar</b> Department of Mathematics State University of New York at Buffalo, USA	09/2019 - 03/2021
<b>Overseas Research Fellow</b> Japan Society for the Promotion of Science, Japan	04/2019 - 03/2021
<b>Visiting Researcher</b> School of Environment and Society Tokyo Institute of Technology, Japan	04/2019 - 03/2021
<b>Visiting Research Associate</b> Department of Engineering Mathematics University of Bristol, United Kingdom	04/2019 - 08/2019
<b>Research Fellow DC2</b> Japan Society for the Promotion of Science, Japan	04/2018 - 03/2019

## Education

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<b>Doctor of Engineering</b> Department of Civil and Environmental Engineering Tokyo Institute of Technology, Japan Supervisor: Prof. Yasuo Asakura	04/2016 - 03/2019
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<b>Exchange Student</b> Institute for Transport Planning and Systems ETH Zürich, Switzerland Supervisors: Dr. A. Horni, Dr. F. Ciari, and Prof. K. Axhausen	08/2014 - 02/2015
<b>Master of Engineering</b> Department of Civil Engineering Tokyo Institute of Technology, Japan Supervisor: Prof. Yasuo Asakura	04/2014 - 03/2016
<b>Bachelor of Engineering</b> Department of Civil and Environmental Engineering Tokyo Institute of Technology, Japan Supervisor: Prof. Yasuo Asakura	04/2010 - 03/2014

## Awards and Honors

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<b>Young Researcher Encouragement Award</b> School of Environment and Society, Tokyo Institute of Technology, Japan	10/2021
<b>Kometani-Sasaki Prize</b> Excellent PhD Dissertation Award, Institute of Systems Science Research, Japan	11/2020
<b>Kikkawa-Yamaguchi Prize</b> Excellent PhD Dissertation Award, Tokyo Institute of Technology, Japan	12/2019
<b>Repayment Exemption for Students with Excellent Grades</b> Japan Student Services Organization (JASSO)	06/2016
<b>The 130th Anniversary Tokyo Institute of Technology Foundation</b> Encouragement Scholarship for Ph.D. Students Tokyo Institute of Technology, Japan	10/2015
<b>TOBITATE! Young Ambassador Program</b> Japan Public-Private Partnership Student Study Abroad Program Ministry of Education, Culture, Sports, Science and Technology (MEXT) Acceptance rate: 19.0% (323 of 1,700 applicants)	06/2014
<b>Tokyo Tech International Research Opportunities Program (TiROP)</b> <i>Decline the acceptance for TOBITATE! Young Ambassador Program</i> Ministry of Education, Culture, Sports, Science and Technology (MEXT)	06/2014

## Research Fellowships

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### **Overseas Research Fellowships** 04/2019 - 03/2021

Japan Society for the Promotion of Science

Host universities:

[09/2019 – 03/2021]

Department of Mathematics,

State University of New York at Buffalo, USA.

[04/2019 – 08/2019]

Department of Engineering Mathematics,

University of Bristol, the United Kingdom.

Host researcher: Prof. Naoki Masuda

Acceptance rate: 18.9% (10 of 53 applicants)

### **Research Fellowships for Young Scientists (PD)** 04/2019 - 03/2022

Japan Society for the Promotion of Science

*Decline the acceptance for Overseas Research Fellowships*

### **Research Fellowships for Young Scientists (DC2)** 04/2018 - 03/2019

Japan Society for the Promotion of Science

Host university:

Department of Civil and Environmental Engineering,

Tokyo Institute of Technology, Japan

Host researcher: Prof. Yasuo Asakura

Acceptance rate: 20.0% (194 of 968 applicants)

## Grants

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### **Research Grants for Interdisciplinary Joint Research** 10/2022 - 09/2025

National Institute for Japanese Language and Linguistics, Japan

Role: Co-I (PI: Dr. Ayumi Katsuki, Tokyo Institute of Technology, Japan)

### **Research Grants for Young Researchers** 04/2022 - 03/2023

Aviation Policy Research Association, Japan

Amount: JPY 300,000

Role: PI

### **KAKENHI Grant-in-Aid for Early-Career Scientists** 04/2022 - 03/2025

Japan Society for the Promotion of Science, Japan

Amount: JPY 4,550,000

Role: PI

### **New Research Challenge Incentive Grant** 11/2021 - 03/2022

Tokyo Institute of Technology, Japan

Amount: JPY 700,000

Role: Co-I (PI: Dr. Xinru Zhu, Tokyo Institute of Technology, Japan)

- Young Researcher Encouragement Award** 10/2021 - 03/2022  
Tokyo Institute of Technology, Japan  
Amount: JPY 700,000  
Role: PI
- KAKENHI Grant-in-Aid for Research Activity Start-Up** 10/2019 - 03/2021  
Japan Society for the Promotion of Science, Japan  
Grant Number: 19K23531  
Amount: JPY 2,860,000  
Role: PI
- KAKENHI Grant-in-Aid for JSPS Fellows** 04/2018 - 03/2020  
Japan Society for the Promotion of Science, Japan  
Grant Number: 18J13572  
Amount: JPY 1,900,000  
Role: PI  
*Decline in March 2019 for Overseas Research Fellowships*

## Publications

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- Preprint/Under review.....
- [2] [Kashin Sugishita](#), Hiroki Mizutani, and Shinya Hanaoka, Dynamics of the US domestic airline network during the COVID-19 pandemic, arXiv preprint, arXiv:2205.15541, 2022.
- [1] Takao Dantsuji, [Kashin Sugishita](#), and Daisuke Fukuda, Understanding changes in travel patterns during the COVID-19 outbreak in the three major metropolitan areas of Japan, arXiv preprint, arXiv:2012.13139, 2020.
- Refereed Journal Papers.....
- [10] Hirohito Ito, Shinya Hanaoka, and [Kashin Sugishita](#), Structural changes of the cruise network by ship size in Northeast Asia, *The Asian Journal of Shipping and Logistics*, 38, 4, 207–221, 2022. [open access]
- [9] [Kashin Sugishita](#), Noha Abdel-Mottaleb, Qiong Zhang, and Naoki Masuda, A growth model for water distribution networks with loops, *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 477, 20210528, 2021. [open access]
- [8] [Kashin Sugishita](#), Mason A. Porter, Mariano Beguerisse-Díaz, and Naoki Masuda, Opinion dynamics on tie-decay networks, *Physical Review Research*, 3, 023249, 2021. [open access]
- [7] [Kashin Sugishita](#) and Naoki Masuda, Recurrence in the evolution of air transport networks, *Scientific Reports*, 11, 5514, 2021. [open access]
- [6] [Kashin Sugishita](#) and Yasuo Asakura, Vulnerability studies in the fields of transportation and complex networks: a citation network analysis, *Public Transport*, 13, 1–34, 2021. [open access]
- [5] Naoto Ogashira, [Kashin Sugishita](#), and Yasuo Asakura, Risk assessment for hazardous materials transportation considering roadside and traffic conditions, *Journal of Japan Society of Civil*

Engineers, Ser. D3 (Infrastructure Planning and Management), Vol.74, No.5, pp.1\_771–1\_778, 2019. (in Japanese)

- [4] Kashin Sugishita and Yasuo Asakura, The impact of partial capacity reduction on network vulnerability against cascading failure, International Journal of Critical Infrastructures, Vol.14, No.2, pp.140–155, 2018.
- [3] Kashin Sugishita and Yasuo Asakura, Vulnerability of interdependent networks against cascading failure, Journal of Japan Society of Civil Engineers, Ser. D3 (Infrastructure Planning and Management), Vol.73, No.5, pp.1\_233–1\_242, 2017. (in Japanese)
- [2] Takao Dantsuji, Kashin Sugishita, Daisuke Fukuda, and Mitsuyuki Asano, Analysis of the Properties of Tourists' Dwell Time using Wi-Fi Packet Data: A Case Study of the Approach to Hase-dera Temple, Journal of the City Planning Institute of Japan, Vol.52, No.3, pp.247–254, 2017. (in Japanese)
- [1] Kashin Sugishita, Takahiko Kusakabe, and Yasuo Asakura, Effect of intentional removals of nodes as a defense strategy against cascading failure, Journal of Japan Society of Civil Engineers, Ser. D3 (Infrastructure Planning and Management), Vol.72, No.5, pp.1\_1781–1\_1792, 2016. (in Japanese)

#### Refereed Proceedings Papers.....

- [4] Kashin Sugishita and Yasuo Asakura, Citation network analysis of vulnerability studies in the fields of transportation and complex networks, Transportation Research Procedia, Vol.47, pp.369–376, 2020.
- [3] Kashin Sugishita and Yasuo Asakura, Network vulnerability analysis and mitigations strategy against cascading failure, Proceedings of the 12th International Conference of Eastern Asia Society for Transportation Studies, 8 pages, 2017.
- [2] Kashin Sugishita and Yasuo Asakura, Mitigation strategy against cascading failure for fragile networks, Proceedings of the 21st International Conference of Hong Kong Society for Transportation Studies, pp. 96–103, 2016.
- [1] Kashin Sugishita, Takahiko Kusakabe, and Yasuo Asakura, Cascading failure in a road network depending on external systems, Proceedings of the 6th International Symposium on Transportation Network Reliability, 2–1–1 in USB media, 15 pages, 2015.

#### Refereed International Conference Presentations.....

- [16] Kashin Sugishita, Hiroki Mizutani, and Shinya Hanaoka, Disruption and recovery of the US domestic airline networks during the COVID-19 pandemic, 25th ATRS World Conference, Antwerp, Belgium, August 2022. [oral presentation]
- [15] Qiong Zhang, Noha Abdel-Mottaleb, Kashin Sugishita, and Naoki Masuda, Bio-inspired design to enhance water distribution network performance, ACS Fall Meeting, August 2022.
- [14] Noha Abdel-Mottaleb, Qiong Zhang, Kashin Sugishita, and Naoki Masuda, Can Bio-Inspired network design improve the performance of water distribution networks (WDNs)?, World Environmental and Water Resources Congress (2021 EWRI Congress), Milwaukee, May 2021.

- [13] Noha Abdel-Mottaleb, Kashin Sugishita, Naoki Masuda, and Qiong Zhang, Bio-inspired water distribution network design, Fourth Northeast Regional Conference on Complex Systems (NERCCS 2021), Online, March 2021. [poster presentation]
- [12] Kashin Sugishita, Noha Abdel-Mottaleb, Qiong Zhang, and Naoki Masuda, A growth model for water distribution networks with loops, Conference on Complex Systems (CCS 2020) Online, December 2020. [poster presentation]
- [11] Kashin Sugishita and Naoki Masuda, Structural evolution of US airline networks, NetSci 2020, Online, September 2020. [oral presentation]
- [10] Kashin Sugishita, Mason A. Porter, Mariano Beguerisse-Díaz, and Naoki Masuda, Opinion dynamics in tie-decay temporal networks, Third Northeast Regional Conference on Complex Systems (NERCCS 2020), Online, April 2020. [poster presentation]
- [9] Kashin Sugishita, Mason A. Porter, Mariano Beguerisse-Díaz, and Naoki Masuda, Opinion dynamics in tie-decay networks, NetSci-X 2020, Tokyo, Japan, January 2020. [oral presentation]
- [8] Kashin Sugishita and Yasuo Asakura, Citation network analysis of vulnerability studies in the fields of transportation and complex networks, 22nd Euro Working Group on Transportation Meeting (EWGT), Barcelona, Spain, September 2019. [oral presentation]
- [7] Kashin Sugishita and Yasuo Asakura, Uncovering community structure in a citation network of vulnerability studies in transportation and complex networks, 30th European Conference on Operational Research (EURO), Dublin, Ireland, June 2019. [oral presentation]
- [6] Kashin Sugishita and Yasuo Asakura, Influence of route choice behavior on vulnerability to cascading failure in transportation networks, Mathematics Applied in Transportation and Traffic Systems (MATTS), Delft, Netherlands, October 2018. [oral presentation]
- [5] Naoto Ogashira, Yasuo Asakura, and Kashin Sugishita, Risk assessment for hazardous materials transportation considering roadside and traffic conditions, 7th International Symposium on Transportation Network Reliability (INSTR), Sydney, Australia, January 2018. [oral presentation]
- [4] Kashin Sugishita and Yasuo Asakura, Network vulnerability analysis and mitigations strategy against cascading failure, 12th International Conference of Eastern Asia Society for Transportation Studies (EASTS), Ho-Chi-Minh, Vietnam, September 2017. [oral presentation]
- [3] Kashin Sugishita and Yasuo Asakura, Mitigation strategy against cascading failure for fragile networks, 21st International Conference of Hong Kong Society for Transportation Studies (HKSTS), Hong Kong, China, December 2016. [oral presentation]
- [2] Kashin Sugishita, Takahiko Kusakabe, and Yasuo Asakura, Cascading failure in a road network depending on external systems, 6th International Symposium on Transportation Network Reliability (INSTR), Nara, Japan, August 2015. [oral presentation]
- [1] Kashin Sugishita, Katsuya Sakai, and Yasuo Asakura, Vulnerability assessment for cascading failures in interdependent networks, The 3rd Symposium of the European Association for Research in Transportation (hEART), Leeds, United Kingdom, September 2014. [oral presentation]

## International Workshops.....

- [5] Kashin Sugishita, Citation network analysis of vulnerability studies in the fields of transportation and complex networks, Science of Innovation and Success Workshop, Tokyo, August 2021.
- [4] Kashin Sugishita, Recurrence in the evolution of air transport networks, *The 5th Japan-US Science Forum in Boston*, Online, November 2020.
- [3] Kashin Sugishita, Citation network analysis of vulnerability studies in the fields of transportation and complex networks, International Workshops on Transport Network Analysis under Emergency Situations, Gifu, October 2018.
- [2] Kashin Sugishita, Risk management for gridlock in transportation networks, Shuttle Seminars of University of Seoul, Henan University of Technology and Tokyo Institute of Technology, Tokyo, April 2018.
- [1] Kashin Sugishita, Intentional removals of nodes and links to avoid gridlock, International Workshop "Big Data and Transportation Dynamics", Tokyo, March 2018.

## Teaching

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- Data Science for Transdisciplinary Research (II)
  - 4Q 2021
  - Tokyo Institute of Technology
- Statistics and Data Analysis
  - 1Q 2022
  - Tokyo Institute of Technology
- Project Design & Management Spring
  - 1Q 2022
  - Tokyo Institute of Technology

## Services

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### Referee for Peer-Reviewed Journals.....

- Asian Transport Studies
- Journal of Japan Society of Civil Engineers, Ser. D3 (Infrastructure Planning and Management)
- Journal of Public Transport
- Journal of Physics A: Mathematical and Theoretical
- Journal of South Asian Logistics and Transport
- New Journal of Physics
- Physica A: Statistical Mechanics and its Applications
- PLOS ONE
- Reliability Engineering and System Safety

### Conferences.....

- 10th International Conference on Complex Networks & Their Applications (Complex Networks 2021), Madrid, Spain, November 30–December 2, 2021. [program committee]
- 11th International Conference on Complex Networks & Their Applications (Complex Networks 2022), Palermo, Italy, November 8–10, 2022. [program committee]
- 25th ATRS World Conference (ATRS 2022), Antwerp, Belgium (Hybrid), August 24–27, 2022. [session chair]

Mentor.....

- TOBITATE! Young Ambassador Program, Japan Public-Private Partnership Student Study Abroad Program, Ministry of Education, Culture, Sports, Science and Technology (MEXT), 06/2020 - Present.