

Naoki Masuda

Contact Information

Naoki Masuda

Email: naokimas@buffalo.edu

Website: <https://naokimas.github.io/naokimasuda.github.io>

Employment

09/2021–	Professor Department of Mathematics, State University of New York at Buffalo, USA Graduate School Director since 07/2022
08/19/2019–08/2021	Associate Professor Department of Mathematics, State University of New York at Buffalo, USA
08/19/2019–	Institute for Artificial Intelligence and Data Science (incorporating the Computational and Data-Enabled Sciences and Engineering Program, which I have been core faculty of, in 2021) State University of New York at Buffalo, USA
08/01/2019– 08/18/2019	Associate Professor Department of Engineering Mathematics, University of Bristol, UK
03/2014–07/2019	Senior Lecturer Department of Engineering Mathematics, University of Bristol, UK
09/2008–02/2014	Associate Professor Department of Mathematical Informatics, University of Tokyo
10/2006–08/2008	Lecturer Department of Mathematical Informatics, University of Tokyo
04/2004–09/2006	Special Postdoctoral Fellow Amari Research Unit, RIKEN Brain Science Institute, Japan
04/2003–03/2004	Research Fellow (PD) Japan Society for the Promotion of Science, at Yokohama National University, Japan
10/2002–03/2003	Research Fellow (PD) Japan Society for the Promotion of Science, at University of Tokyo, Japan
04/2000–09/2002	Research Fellow (DC1) Japan Society for the Promotion of Science, at University of Tokyo, Japan

Visiting and Term Appointments

4/2023–	Research Fellow (non-tenured) Center for Computational Social Science, Kobe University, Japan
9/2021–3/2023	Professor (non-tenured) Faculty of Science and Engineering, Waseda University, Japan
4/2020–8/2021	Associate Professor (non-tenured) Faculty of Science and Engineering, Waseda University, Japan
11/2018–8/2019	Turing Fellow Alan Turing Institute, UK (terminated because of NM's move to the USA)
4/2018–3/2021	Visiting Professor Dalian University of Technology, China
10/2008–3/2012	Researcher (part-time appointment) Japan Science and Technology Agency, Basic Research Programs PRESTO, Japan
7/2004–3/2006	Group Leader (part-time appointment) Japan Science and Technology Agency, ERATO Aihara Complexity Modelling Project, Japan

Academic Qualifications

09/2002	Ph.D. in Engineering, University of Tokyo, Japan (Department of Mathematical Engineering and Information Physics) Thesis title: “Duality of Information Coding in Pulse-coupled Neural Networks” Thesis supervisor: Prof. Kazuyuki Aihara
03/2000	M.Sc. in Engineering, University of Tokyo, Japan (Department of Mathematical Engineering and Information Physics) Thesis title: “Cryptosystems with Discretized Chaotic Maps” Thesis supervisor: Prof. Kazuyuki Aihara
03/1998	B.Sc. in Engineering, University of Tokyo, Japan (Department of Mathematical Engineering and Information Physics)
2000–2001	Academic Year Abroad Department of Physics, University of California, San Diego, USA

Citation Statistics

[Google Scholar Citations profile](#)

Number of citations: 9200 (Google Scholar Citations)

h-index: 53 (Google Scholar Citations)

Grants

State University of New York at Buffalo, USA

1/2024–12/2024

Institute for Artificial Intelligence and Data Science, State University of New York at Buffalo

Subject: Co-designing an artificial intelligence model with communities to increase treatment success for opioid use disorders.

Amount: 1-year RA support (if a mid-term evaluation is cleared)

Collaborators: Katia Noyes, Brian Clemency, Henry Taylor, Michael Lamonte (all at State University of New York at Buffalo), Reza Yousefi-Nooraie (University of Rochester); I am the advisor of the hired PhD student.

9/2022–9/2025

National Institute of General Medical Sciences (NIGMS) and National Science Foundation (administered by NIGMS)

Subject: DMS/NIGMS 1: Multilayer network approach to tandem repeat variation in genomes

Amount: \$444,842

Role: PI (co-I: Omer Gokcumen, State University of New York at Buffalo)

[I am only named Senior Personnel] 9/2022–2/2024

National Science Foundation (CCF, NSF 21-590 Predictive Intelligence for Pandemic Prevention Phase I: Development Grants)

PIPP Phase I: Center for Ecosystems Data Integration and Pandemic Early Warning Systems

Amount: \$1,000,000

Role: Named Senior Personnel (PI: Jennifer Surtees; co-PIs: E. Bruce Pitman, Wen Dong, Laurene Tumiel-Berhalter, Yinyin Ye; all at State University of New York at Buffalo)

8/2022–8/2025

National Science Foundation (Applied Mathematics Program)

Subject: Theory and application of temporal network embedding

Amount: \$300,000

Role: PI (sole PI)

4/2021–3/2024

National Science Foundation (Mathematical Biology Program)

Subject: Floquet theory for stochastic temporal networks and optimization theory for the design of schedules for COVID-19

Amount: \$239,983

Role: PI (Co-PI: Dane Taylor, State University of New York at Buffalo)

4/2021–11/2025

Japan Science and Technology Agency, Moonshot Research & Development Program, Japan

Project title: Mathematical modeling and data analysis for understanding and intervening into resilience, robustness, and cascading failures in inter-organ networks

Amount: \$1,618,494 (= JPY 169,000,000) (to my group)

Role: Co-PI (PI: Kazuyuki Aihara, University of Tokyo, Co-PI: Jun-ichi Imura, Tokyo Institute of Technology; Shingo Iwami, Kyushu University; Yukinori Okada, Osaka University; Shigeru Saito, University of Toyama; Kiyohito Kasai, University of Tokyo)

11/2020–11/2021

Sumitomo Foundation

Project title: Analysis of epidemic process models using higher-order random walks on networks

Amount: \$13,302.83 (= JPY 1,400,000) (to my group)

Role: PI (Co-I: Gouhei Tanaka, University of Tokyo)

7/2020–6/2021

Nakatani Foundation

Project title: Engineering curfew strategies based on contact network analysis

Amount: \$18,497.97 (= JPY 2,000,000) (to my group)

Role: PI (Co-I: Dane Taylor, State University of New York at Buffalo; Naoya Fujiwara, Tohoku University)

5/2020–8/2021

JP Morgan Chase Faculty Research Awards

Project title: Detecting fraudulent transactions in online marketplaces using temporal network motifs

Amount: \$150,000

Role: PI (partner PI: A. Erdem Sariyüce, State University of New York at Buffalo)

4/2020–7/2020

SUNY Research Seed Grant Program

Project title: Optimizing curfew schedules to suppress COVID-19 spreading

Amount: \$5,500 (\$2,750 to my group)

Role: PI (Other member of the Team: Dane Taylor, State University of New York at Buffalo)

2/2020–8/2023

Air Force Office of Scientific Research (AFOSR) European Office

Project title: Inferring dynamics of discrete states in time-varying networks

Amount: \$144,402 (Subcontracted from University of Bristol, which is NM's previous institution. NM secured \$160,709 while he was in Bristol, which has been split between Buffalo and Bristol.)

Role: PI (no Co-PI/Co-I)

Kobe University, Japan (as non-tenured Research Fellow)

4/2023–3/2026

Japan Society for Promotion of Science (Grant-in-Aid for Scientific Research (B))

Subject: Deriving dynamical model equations from temporal network data using a graph rewriting framework (translation by NM)

Amount: JPY 91,000 (planned to be distributed to my group; TBD)

Role: Co-I (PI: Hiroki Sayama, Waseda University)

Waseda University, Japan (as non-tenured faculty member)

4/2021–3/2024

Japan Society for Promotion of Science (Grant-in-Aid for Scientific Research (A))

Subject: Co-evolution of epidemics, interventions, and behavior in network epidemiology

Amount: JPY 19,500 (to my group)

Role: Co-I (PI: Petter Holme, Tokyo Institute of Technology, Co-Is: Tsuyoshi Murata, Misako Takayasu, Yoko Ibuka, Yusuke Asai, Catherine Beauchemin)

University of Bristol, UK

2/2019–9/2019

GW4 Accelerator Fund

Project title: Recurrence analysis for the characterisation and classification of epileptic patients

Amount: £34,928 (£32,721 to my group)

Role: PI (Co-I: Lorenzo Livi, University of Exeter; Jiaxiang Zhang, Cardiff University; Tiago de Paula Peixoto, University of Bath)

11/2018–8/2019

Alan Turing Institute

Project title: Revealing citation cartels in network data

Amount: £35,139

Role: PI (no Co-PI/Co-I)

9/2018–2/2019

Mercari Inc (a company in Japan)

Project title: Detection of problematic transactions in online marketplaces of Mercari

Amount: £20,371 (company's contribution)

Role: PI (no Co-PI/Co-I)

5/2018–11/2018

EPSRC, BRIM (Building Resilience into Risk Management) Feasibility Fund

Project title: Network resilience theory for water distribution systems

Amount: £10,200

Role: PI (Co-I: Fanlin Meng, University of Exeter)

3/2018–2/2020

Cookpad Limited (a company registered in England and Wales)

Project title: Cookpad networks

Amount: £182,278 (company's contribution)

Role: PI (no Co-PI/Co-I)

3/2018–6/2018

Jean Golding Institute: Seed Corn Funding, University of Bristol

Project title: Immune state networks in wild mice

Amount: £2,600

Role: PI (Co-I: Mark Viney, University of Bristol)

2/2018–6/2018

GW4 Data Science Seed Corn Funding

Project title: Recurrence analysis for time-varying networks and its application to brain dynamics

Amount: £5,000

Role: PI (Co-I: Lorenzo Livi, University of Exeter; Jiaxiang Zhang, Cardiff University)

12/2017–6/2018

Faculty of Engineering: Research Pump Priming, University of Bristol

Project title: Immune response networks in wild mice

Amount: £5,000

Role: PI (Co-I: Mark Viney, University of Bristol)

9/2016–3/2017

EPSRC Institutional Sponsorship

Project title: Phase transitions in neuroimaging data

Amount: £7,234

Role: PI (Co-I: Elohim Fonseca dos Reis, University of Campinas, Brazil)

10/2013–3/2019

CREST, Japan Science and Technology Agency

Project title: Theory for analyzing temporal network data as deep knowledge (originally in Japanese. Translation by NM)

Amount: JPY 62,970,700 (to my group), of which £388,411.21 is to the University of Bristol; the rest is to the University of Tokyo

Role: Co-I (PI: Kenji Yamanishi, University of Tokyo, Japan)

University of Tokyo, Japan

4/2013–2/2014

Bilateral Joint Research Projects, Japan Society for the Promotion of Science

Project title: TempoNet: theoretical foundations of temporal networks

Amount: JPY 2,500,000 (to my group)

Role: PI (partner PI: Renaud Lambiotte, University of Namur, Belgium)

4/2013–3/2014

Research Grants for Japanese Young Scientists (originally in Japanese. Translation by NM), The

Nakajima Foundation

Project title: Quantify reputations of agents in networks (originally in Japanese. Translation by NM)

Amount: JPY 1,000,000

Role: PI (no Co-PI/Co-I)

4/2011–2/2014

Grant-in-Aid for Young Scientists (A), Japan Society for the Promotion of Science

Project title: Computational modeling of games on social networks and analysis of cooperative behavior

Amount: JPY 10,100,000

Role: PI (no Co-PI/Co-I)

11/2008–3/2013

Grant-in-Aid for Scientific Research on Innovative Areas, Japan Society for the Promotion of Science

Project title: Computational study of locomotion, learning, and memory using stochastic analysis methods

Amount: JPY 29,845,000 (to my group)

Role: PI (Co-I: Jun Ohkubo)

10/2008–3/2012

Japan Science and Technology Agency, Basic Research Programs PRESTO, Japan

Project title: Modeling of epidemic dynamics on networks with group structure

Amount: JPY 49,332,600

Role: PI (no Co-PI/Co-I)

4/2008–3/2011

Grant-in-Aid for Young Scientists (B), Japan Society for the Promotion of Science

Project title: Computational modeling of games on social networks and analysis of cooperative behavior

Amount: JPY 4,030,000

Role: PI (no Co-PI/Co-I)

4/2008–11/2009

Grant-in-Aid for Scientific Research on Priority Areas “Integrative Brain Research”, Ministry of Education, Culture, Sports, Science and Technology of Japan

Project title: Neurocomputational modelling of cooperative behavior (originally in Japanese. Translation by NM)

Amount: JPY 1,787,269

Role: PI (no Co-PI/Co-I)

6/2007–3/2009

Trend Micro Incorporated (a company in Japan)

Project title: Exploration of content security on the WWW using network analysis (originally in Japanese. Translation by NM)

Amount: JPY 5,250,000

Role: PI

26/04/2007–26/05/2007

Japan–U.S. Brain Research Cooperative Program, National Institute for Physiological Sciences, Japan (travel grant)

Project title: A computational study of improvement in behavioral performance by attention

Amount: JPY 570,000

Role: Visiting investigator (Host: Center for Neural Science, New York University)

As postdoc and PhD student

4/2004–9/2006

Special Postdoctoral Researcher, RIKEN Brain Science Institute, Japan (research grant)

Project title: Spatiotemporal information processing by recurrent neural networks with synaptic learning and integrate-and-fire dynamics (originally in Japanese. Translation by NM)

Amount: JPY 3,900,000

Role: Sole recipient

4/2003–3/2004

Research Fellowships for Young Scientists, Japan Society for the Promotion of Science

Project title: Multiplexity of information representation and contributions of complex spiking patterns and synaptic learning to brain functioning (originally in Japanese. Translation by NM)

Amount: JPY 1,200,000

Role: Sole recipient

4/2000–3/2003

Research Fellowships for Young Scientists, Japan Society for the Promotion of Science

Project title: Analysis of finite-state transformations by chaotic mapping and its application to cryptosystems and neural dynamics (originally in Japanese. Translation by NM)

Amount: JPY 3,000,000

Role: Sole recipient

Honors and Awards

PLoS ONE, Editorial Board, Long Service Award, 2023

IOP (Institute of Physics) Trusted Reviewer status 2020

(awarded to approximately the top 12% of reviewers since 2018)

JSPS (Japan Society for Promotion of Science) Prize 2020

(awarded to 24 researchers under the age of 45 across all fields of the humanities, social sciences, and natural sciences)

Junior Akira Okubo Prize 2019

jointly administered by the Society for Mathematical Biology and the Japanese Society for Mathematical Biology

Outstanding Reviewer Awards 2017

New Journal of Physics, IOP Publishing (awarded to 82 out of 1,507 reviewers)

The Young Scientists' Prize

The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, Japan, April 2013.

Japanese Society for Mathematical Biology Early Career Award, 2012.

International Neural Network Society Young Investigator Award

The International Neural Network Society, August 15, 2007.

Refereed Journal Papers

204. Saiful Islam, Pitambar Khanra, Johan Nakuci, Sarah Muldoon, Takamitsu Watanabe, Naoki Masuda.
State-transition dynamics of resting-state functional magnetic resonance imaging data: Model comparison and test-to-retest analysis.
BMC Neuroscience, in press (2024).
203. Naoki Masuda, Kazuyuki Aihara, Neil G. MacLaren.

- Anticipating regime shifts by mixing early warning signals from different nodes.
Nature Communications, 15, 1086 (2024).
202. Jun Miyata, Akihiko Sasamoto, Takahiro Ezaki, Masanori Isobe, Takanori Kochiyama, [Naoki Masuda](#), Yasuo Mori, Yuki Sakai, Nobukatsu Sawamoto, Shisei Tei, Shiho Ubukata, Toshihiko Aso, Toshiya Murai, Hidehiko Takahashi.
Associations of conservatism and jumping to conclusions biases with aberrant salience and default mode network.
Psychiatry and Clinical Neurosciences, in press (2024).
201. Shota Yonezawa, Takayuki Haruki, Keiichi Koizumi, Akinori Taketani, Yusuke Oshima, Makito Oku, Akinori Wada, Tsutomu Sato, [Naoki Masuda](#), Jun Tahara, Noritaka Fujisawa, Shota Koshiyama, Makoto Kadowaki, Isao Kitajima, Shigeru Saito.
Establishing monoclonal gammopathy of undetermined significance as an independent pre-disease state of multiple myeloma using Raman spectroscopy, dynamical network biomarker theory, and energy landscape analysis.
International Journal of Molecular Sciences, 25, 1570 (2024).
200. Neil G. MacLaren, Lingqi Meng, Melissa Collier, [Naoki Masuda](#).
Cooperation and the social brain hypothesis in primate social networks.
Frontiers in Complex Systems, 1, 1344094 (2024).
199. Madison Russell, Alber Aqil, Marie Saitou, Omer Gokcumen, [Naoki Masuda](#).
Gene communities in co-expression networks across different tissues.
PLoS Computational Biology, 19, e1011616 (2023).
198. Kashin Sugishita, [Naoki Masuda](#).
Social network analysis of manga: Similarities to real-world social networks and trends over decades.
Applied Network Science, 8, 79 (2023).
197. Kazuki Nakajima, Ruodan Liu, Kazuyuki Shudo, [Naoki Masuda](#).
Quantifying gender imbalance in East Asian academia: Research career and citation practice.
Journal of Informetrics, 17, 101460 (2023).
196. Ruodan Liu, [Naoki Masuda](#).
Fixation dynamics on hypergraphs.
PLoS Computational Biology, 19, e1011494 (2023).
195. Ruodan Liu, Masaki Ogura, Elohim Fonseca dos Reis, [Naoki Masuda](#).
Effects of concurrency on epidemic spreading in Markovian temporal networks.
European Journal of Applied Mathematics, in press (2023).
194. Jnanajyoti Bhaumik, [Naoki Masuda](#).
Fixation probability in evolutionary dynamics on switching temporal networks.
Journal of Mathematical Biology, 87, 64 (2023).
193. Maximilian B. Kloucek, Thomas Machon, Shogo Kajimura, C. Patrick Royall, [Naoki Masuda](#), Francesco Turci.
Biases in inverse Ising estimates of near-critical behavior.
Physical Review E, 108, 014109 (2023).
192. Lingqi Meng, [Naoki Masuda](#).
Perturbation theory for evolution of cooperation on networks.
Journal of Mathematical Biology, 87, 12 (2023).

191. Christelle Langley, [Naoki Masuda](#), Simon Godwin, Giovanni De Marco, Angela Davies Smith, Rosemary Jones, Jared Bruce, Jade Ngoc Thai.
Dysfunction of basal ganglia functional connectivity associated with subjective and cognitive fatigue in multiple sclerosis.
Frontiers in Neuroscience, 17, 1194859 (2023).
190. Yiding Cao, Suraj Rajendran, Prathic Sundararajan, Royal K. Law, Sarah Bacon, Steven A. Sumner, [Naoki Masuda](#).
Web-based social networks of individuals with adverse childhood experiences: Quantitative study.
Journal of Medical Internet Research, 25, e45171 (2023).
189. Chanon Thongprayoon, Lorenzo Livi, [Naoki Masuda](#).
Embedding and trajectories of temporal networks.
IEEE Access, 11, 41426–41443 (2023).
188. Neil G. MacLaren, Prosenjit Kundu, [Naoki Masuda](#).
Early warnings for multistage transitions in dynamics on networks.
Journal of the Royal Society Interface, 20, 20220743 (2023).
187. Ik Soo Lim, [Naoki Masuda](#).
To trust or not to trust: Evolutionary dynamics of an asymmetric N -player trust game.
IEEE Transactions on Evolutionary Computation, 28, 117–131 (2024).
186. Kazuki Nakajima, Kazuyuki Shudo, [Naoki Masuda](#).
Higher-order rich-club phenomenon in collaborative research grants.
Scientometrics, 128, 2429–2446 (2023).
185. Yukiko Matsumoto, Satoshi Nishida, Ryusuke Hayashi, Shuraku Son, Akio Murakami, Naganobu Yoshikawa, Hiroyoshi Ito, Naoya Oishi, [Naoki Masuda](#), Toshiya Murai, Karl Friston, Shinji Nishimoto, Hidehiko Takahashi.
Disorganization of semantic brain networks in schizophrenia revealed by fMRI.
Schizophrenia Bulletin, 49, 498–506 (2023).
184. Prosenjit Kundu, Neil G. MacLaren, Hiroshi Kori, [Naoki Masuda](#).
Mean-field theory for double-well systems on degree-heterogeneous networks.
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 478, 20220350 (2022).
Correction to: ‘Mean-field theory for double-well systems on degree-heterogeneous networks’ (2023) by Kundu *et al.*
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 479, 20230171 (2023).
183. Takao Sasaki, [Naoki Masuda](#), Richard P. Mann, Dora Biro.
Empirical test of the many-wrongs hypothesis reveals weighted averaging of individual routes in pigeon flocks.
iScience, 25, 105076 (2022).
182. [Naoki Masuda](#), Prosenjit Kundu.
Dimension reduction of dynamical systems on networks with leading and non-leading eigenvectors of adjacency matrices.
Physical Review Research, 4, 023257 (2022).

181. Prosenjit Kundu, Hiroshi Kori, [Naoki Masuda](#).
Accuracy of a one-dimensional reduction of dynamical systems on networks.
Physical Review E, 105, 024305 (2022).
180. Elohim Fonseca dos Reis, [Naoki Masuda](#).
Metapopulation models imply non-Poissonian statistics of interevent times.
Physical Review Research, 4, 013050 (2022).
179. Penghang Liu, [Naoki Masuda](#), Tomomi Kito, Ahmet Erdem Sarıyüce.
Temporal motifs in patent opposition and collaboration networks.
Scientific Reports, 12, 1917 (2022).
178. Kazuki Nakajima, Kazuyuki Shudo, [Naoki Masuda](#).
Randomizing hypergraphs preserving degree correlation and local clustering.
IEEE Transactions on Network Science and Engineering, 9, 1139–1153 (2022).
177. Lingqi Meng, [Naoki Masuda](#).
Epidemic dynamics on metapopulation networks with node2vec mobility.
Journal of Theoretical Biology, 534, 110960 (2022).
176. Arthur P. C. Spencer, Jonathan C. W. Brooks, [Naoki Masuda](#), Hollie Byrne, Richard Lee-Kelland, Sally Jary, Marianne Thoresen, Marc Goodfellow, Frances M. Cowan, Ela Chakkarapani.
Motor function and white matter connectivity in children cooled for neonatal encephalopathy.
NeuroImage: Clinical, 32, 102872 (2021).
175. Kashin Sugishita, Noha Abdel-Mottaleb, Qiong Zhang, [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).
174. Marie Saitou, [Naoki Masuda](#), Omer Gokcumen.
Similarity-based analysis of allele frequency distribution among multiple populations identifies adaptive genomic structural variants.
Molecular Biology and Evolution, 39, msab313 (2021).
173. Takahiro Ezaki, Yu Himeno, Takamitsu Watanabe, [Naoki Masuda](#).
Modeling state-transition dynamics in resting-state brain signals by the hidden Markov and Gaussian mixture models.
European Journal of Neuroscience, 54, 5404–5416 (2021).
172. Hang-Hyun Jo, [Naoki Masuda](#).
Finite-size effects on the convergence time in continuous-opinion dynamics.
Physical Review E, 104, 014309 (2021).
171. Kashin Sugishita, Mason A. Porter, Mariano Beguerisse-Díaz, [Naoki Masuda](#).
Opinion dynamics on tie-decay networks.
Physical Review Research, 3, 023249 (2021).
170. [Naoki Masuda](#), Joel C. Miller, Petter Holme.
Concurrency measures in the era of temporal network epidemiology: A review.
Journal of the Royal Society Interface, 18, 20210019 (2021).
169. Christos Ellinas, Christos Nicolaides, [Naoki Masuda](#).
Mitigation strategies against cascading failures within a project activity network.
Journal of Computational Social Science, 5, 383–400 (2022).

168. Sadamori Kojaku, Giacomo Livan, [Naoki Masuda](#).
Detecting citation cartels in journal networks.
Scientific Reports, 11, 14524 (2021).
167. Kashin Sugishita, [Naoki Masuda](#).
Recurrence in the evolution of air transport networks.
Scientific Reports, 11, 5514 (2021).
166. Arthur P. C. Spencer, Jonathan C. W. Brooks, [Naoki Masuda](#), Hollie Byrne, Richard Lee-Kelland, Sally Jary, Marianne Thoresen, James Tonks, Marc Goodfellow, Frances M. Cowan, Ela Chakkapani.
Disrupted brain connectivity in children treated with therapeutic hypothermia for neonatal encephalopathy.
NeuroImage: Clinical, 30, 102582 (2021).
165. Elohim Fonseca dos Reis, Mark Viney, [Naoki Masuda](#).
Network analysis of the immune state of mice.
Scientific Reports, 11, 4306 (2021).
164. Marinho A Lopes, Dominik Krzemiński, Khalid Hamandi, Krish D. Singh, [Naoki Masuda](#), John R. Terry, Jiaxiang Zhang.
A computational biomarker of juvenile myoclonic epilepsy from resting-state MEG.
Clinical Neurophysiology, 132, 922–927 (2021).
163. Lingqi Meng, [Naoki Masuda](#).
Analysis of node2vec random walks on networks.
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 476, 20200447 (2020).
162. Shun Kodate, Ryusuke Chiba, Shunya Kimura, [Naoki Masuda](#).
Detecting problematic transactions in a consumer-to-consumer e-commerce network.
Applied Network Science, 5, 90 (2020).
161. Elohim Fonseca dos Reis, Aming Li, [Naoki Masuda](#).
Generative models of simultaneously heavy-tailed distributions of inter-event times on nodes and edges.
Physical Review E, 102, 052303 (2020).
160. Shogo Kajimura, [Naoki Masuda](#), Johnny King L. Lau, Kou Murayama.
Focused attention meditation changes the boundary and configuration of functional networks in the brain.
Scientific Reports, 10, 18426 (2020).
159. Xiu-Xiu Zhan, Ziyu Li, [Naoki Masuda](#), Petter Holme, Huijuan Wang.
Susceptible-infected-spreading-based network embedding in static and temporal networks.
EPJ Data Science, 9, 30 (2020).
158. Mengqiao Xu, Qian Pan, Haoxiang Xia, [Naoki Masuda](#).
Estimating international trade status of countries from global liner shipping networks.
Royal Society Open Science, 7, 200386 (2020).
157. Marinho A. Lopes, Jiaxiang Zhang, Dominik Krzemiński, Khalid Hamandi, Qi Chen, Lorenzo Livi, [Naoki Masuda](#).
Recurrence quantification analysis of dynamic brain networks.
European Journal of Neuroscience, 53, 1040–1059 (2021).

156. Irene Malvestio, Alessio Cardillo, [Naoki Masuda](#).
Interplay between k -core and community structure in complex networks.
Scientific Reports, 10, 14702 (2020).
155. Genki Ichinose, Daiki Miyagawa, Junji Ito, [Naoki Masuda](#).
Winning by hiding behind others: An analysis of speed skating data.
PLOS ONE, 15, e0237470 (2020).
154. [Naoki Masuda](#), Takayuki Hiraoka.
Waiting-time paradox in 1922.
Northeast Journal of Complex Systems, 2, 1 (2020).
153. Alessio Cardillo, [Naoki Masuda](#).
Critical mass effect in evolutionary games triggered by zealots.
Physical Review Research, 2, 023305 (2020).
152. [Naoki Masuda](#), Petter Holme.
Small inter-event times govern epidemic spreading on networks.
Physical Review Research, 2, 023163 (2020).
151. Takayuki Hiraoka, [Naoki Masuda](#), Aming Li, Hang-Hyun Jo.
Modeling temporal networks with bursty activity patterns of nodes and links.
Physical Review Research, 2, 023073 (2020).
150. Gabriele Valentini, [Naoki Masuda](#), Zachary Shaffer, Jake R. Hanson, Takao Sasaki, Sara Imari Walker, Theodore P. Pavlic, Stephen C. Pratt.
Division of labor promotes the spread of information in colony emigrations by the ant *Temnothorax rugatulus*.
Proceedings of the Royal Society B: Biological Sciences, 287, 20192950 (2020).
149. Makoto Okada, Kenji Yamanishi, [Naoki Masuda](#).
Long-tailed distributions of inter-event times as mixtures of exponential distributions.
Royal Society Open Science, 7, 191643 (2020).
148. [Naoki Masuda](#), Victor M. Preciado, Masaki Ogura.
Analysis of the susceptible-infected-susceptible epidemic dynamics in networks via the non-backtracking matrix.
IMA Journal of Applied Mathematics, 85, 214–230 (2020).
147. Takahiro Ezaki, Elohim Fonseca dos Reis, Takamitsu Watanabe, Michiko Sakaki, [Naoki Masuda](#).
Closer to critical resting-state neural dynamics in individuals with higher fluid intelligence.
Communications Biology, 3, 52 (2020).
146. Dominik Krzemiński, [Naoki Masuda](#), Khalid Hamandi, Krish D. Singh, Bethany Routley, Jiaxiang Zhang.
Energy landscape of resting magnetoencephalography reveals fronto-parietal network impairments in epilepsy.
Network Neuroscience, 4, 374–396 (2020).
145. Sadamori Kojaku, [Naoki Masuda](#).
Constructing networks by filtering correlation matrices: A null model approach.
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 475, 20190578 (2019).

144. [Naoki Masuda](#), Fanlin Meng.
Dynamical stability of water distribution networks.
Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 475, 20190291 (2019).
143. Masaki Ogura, Victor M. Preciado, [Naoki Masuda](#).
Optimal containment of epidemics over temporal activity-driven networks.
SIAM Journal on Applied Mathematics, 79, 986–1006 (2019).
142. Takamitsu Watanabe, Geraint Rees, [Naoki Masuda](#).
Atypical intrinsic neural timescale in autism.
eLife, 8, e42256 (2019).
141. [Naoki Masuda](#), Petter Holme.
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9. Xia Cui, Sadamori Kojaku, Naoki Masuda, Danushka Bollegala.
Solving feature sparseness in text classification using core-periphery decomposition.
The Seventh Joint Conference on Lexical and Computational Semantics (*SEM 2018).
New Orleans, USA, June 5–6 (2018).
In: Proceedings, 255–264.
[Oral presentation; 42% acceptance]
8. Naoki Masuda, Konstantin Klemm, Víctor M. Eguíluz.
Slowing down of linear consensus dynamics on temporal networks: some theoretical extensions.
4th IFAC Conference on Analysis and Control of Chaotic Systems.
Tokyo, Japan, August 26–28 (2015).
In: IFAC-PapersOnLine, 48–18, 187–192 (2015).
[Oral presentation]
7. Kodai Saito, Naoki Masuda.
Two types of Twitter users with equally many followers.
The 2013 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2013).
Niagara Falls, Canada, August 25–28 (2013).
In: Proceedings, 1425–1426.
[Poster presentation; 36% acceptance (28% oral + 8% poster)]
6. Naoki Masuda, Tetsuya Fujie, Kazuo Murota.
Application of semidefinite programming to maximize the spectral gap produced by node removal.
4th Workshop on Complex Networks (CompleNet 2013).
Berlin, March 13–15 (2013). In: Complex Networks IV, Studies in Computational Intelligence, 476,

155–163 (2013).

[Poster presentation]

5. Naoki Masuda, Hiroshi Kori.
STDP enhances frequency synchrony in neural networks with a pacemaker.
International Joint Conference on Neural Networks (IJCNN 2007).
Orlando, Florida, USA, August 12–17 (2007).
In: Proceedings of International Joint Conference on Neural Networks, 96–101 (2007).
[Poster presentation]
4. Naoki Masuda, Shun-ichi Amari.
Modeling memory transfer and savings in cerebellar motor learning.
Neural Information Processing Systems (NIPS) 2005.
Vancouver, Canada, December 5–10 (2005).
In: Advances in Neural Information Processing Systems (Eds. Y. Weiss, B. Scholkopf, J. Platt), 18, 859–866 (2006).
[Poster presentation; 25% acceptance]
3. Naoki Masuda, Kazuyuki Aihara.
Collective behavior of pulse-coupled FitzHugh-Nagumo neurons.
The 8th International Conference on Neural Information Processing (ICONIP 2001).
Shanghai, China, November 14–18 (2001).
In: Proceedings of ICONIP2001, Vol. 2, 910–915.
[Oral presentation]
2. Naoki Masuda, Kazuyuki Aihara.
Cryptosystems based on space-discretization of chaotic maps.
The IEEE International Symposium on Circuits and Systems, 2001 (ISCAS 2001).
Sydney, Australia, May 6–9 (2001).
In: Proceedings of ISCAS 2001, III, 321–324 (2001).
[Oral presentation]
1. Naoki Masuda, Kazuyuki Aihara.
Cryptosystem based on a finite-state baker’s map and its security analysis.
1999 International Symposium on Nonlinear Theory and its Applications (NOLTA99).
Hilton Waikoloa Village, Waikoloa, Hawaii, USA, November 28 – December 2 (1999).
In: Proceedings of NOLTA’99, 613–616.
[Oral presentation]

Institutional Journal Papers (refereed)

2. Aoi Naito, Naoki Masuda, Tatsuya Kameda.
Collective intelligence under a volatile task environment: A behavioral experiment using social networks and computer simulations.
Interdisciplinary Information Sciences, in press (2023).
1. Akihiro Fujihara, Yusuke Ide, Norio Konno, Naoki Masuda, Hiroyoshi Miwa, Masato Uchida.
Limit theorems for the average distance and the degree distribution of the threshold network model.
Interdisciplinary Information Sciences, 15, 361–366 (2010).

Conference/workshop Invited Presentations (without refereed proceeding papers)

42. [Naoki Masuda](#).
Fixation dynamics on multilayer networks.
Workshop on Modeling and Applications of Evolutionary Game Theory.
Online, December 8, 2023.
[Invited talk]
41. [Naoki Masuda](#).
Fixation probability in opinion formation dynamics on higher-order networks.
The Future of Mathematical Social Science Workshop.
Online (hosted by University of Pennsylvania), Philadelphia, PA, April 10–11, 2023.
[Invited talk]
40. [Naoki Masuda](#).
Modeling and analysis of temporal networks and dynamical processes on them.
International Conference on Emerging Trends in Mathematical Sciences & Computing (IEMSC-23).
Online (hosted by IEM Kolkata, India), February 3–5, 2023.
[Plenary talk]
39. [Naoki Masuda](#).
Long-tailed distributions of inter-event times as mixtures of exponentials.
KIAS International Workshop: Theoretical Challenges in Network Science.
KIAS, Seoul, Korea, September 26–30, 2022.
[Invited talk]
38. [Naoki Masuda](#).
State dynamics view of temporal network data: Recurrence and embedding.
Blockchain Kaigi 2022 (BCK22).
Tohoku University, Sendai, Miyagi, Japan, August 4–5, 2022.
[Invited talk]
37. [Naoki Masuda](#).
Recurrence view of temporal network data: System-state dynamics, recurrence plot, and embedding.
NetSci 2022.
Online, July 25–29, 2022.
[Invited talk]
36. [Naoki Masuda](#).
Recurrence quantification analysis and energy landscape analysis of dynamic brain networks. The BIRS workshop on Multiplex Brain Networks.
Banff International Research Station, Banff, Canada, April 22–24, 2022.
[Invited talk]
35. [Naoki Masuda](#).
System-state dynamics and recurrence of temporal networks.
American Physical Society March Meeting, Chicago, IL, USA, March 14–18, 2022.
[Invited talk]
34. [Naoki Masuda](#).
Network analysis on correlation matrices: Alternatives to threshold networks.
International Conference on AI and Data Science: Mathematics and Applications.
Suwon, Korea, November 4–5, 2019.
[Keynote talk]

33. Naoki Masuda.
 Network science: Static and temporal networks.
 2019 Big Data Analysis and Complex Science Management Summer School (translation by NM).
 Harbin Institute of Technology (Weihai), Weihai, China, July 25–31, 2019.
 [Invited lectures]
32. Naoki Masuda.
 Network dynamics: Epidemic processes and energy landscape analysis.
 2019 Annual Meeting, Society For Mathematical Biology.
 Université de Montréal, Montreal, Canada, July 22–26, 2019.
 [Plenary speaker]
31. Naoki Masuda. Networks from correlation matrices: An alternative to thresholding. Threshold Networks. University of Nottingham, Nottingham, UK, July 22–24, 2019.
 [Invited talk]
30. Naoki Masuda.
 Lecture 1: Fundamentals of random walks on networks.
 Lecture 2: Applications of random walks on networks.
 CCSS School on Computational Social Science.
 Kobe University, Japan, June 20–22, 2019.
 [Invited lectures]
29. Naoki Masuda.
 Contagion processes on temporal networks: Epidemic threshold, commutator, and concurrency.
 Centre for Business Network Analysis (CBNA) Summer School in Social Network Analysis 2019.
 University of Greenwich, UK, June 10–14, 2019.
 [Invited talk]
28. Naoki Masuda.
 A configuration model for correlation matrices.
 4th Workshop on Statistical Physics for Financial and Economic Networks.
 NetSci 2019, University of Vermont, Burlington, VA, USA, May 27–31, 2019
 [Invited talk]
27. Naoki Masuda.
 Opening Symposium of the Dutch Network Science Society.
 TU Delft, Delft, Netherlands, 7 May, 2019.
 [10 min pitch talk]
26. Naoki Masuda.
 Epidemic processes on dynamically switching networks: Effects of commutator and concurrency.
 Young European Probabilists (YEP) XV “Information Diffusion on Random Networks” Workshop.
 TU Eindhoven, Eindhoven, Netherlands, March 25–29, 2019.
 [Invited talk]
25. Naoki Masuda.
 Epidemic processes and random walks on time-varying graphs.
 Fundamentals of complex networks: From static towards evolving.
 University of Duisburg-Essen, Essen, Germany, March 6–8 (2019).
 [Invited mini lecture talks; 4 talks \times 1 hr]

24. [Naoki Masuda](#).
Random walks on networks.
Online Winter School on Spectral Methods for Complex Systems.
Webinar, January 21–30 (2019).
[Video lecture presentation]
23. [Naoki Masuda](#).
Directed acyclic graphs in network science.
International Workshop on Theoretical Perspectives in Network Science.
Seoul National University, Seoul, Korea, December 7–9 (2018).
[Invited talk]
22. [Naoki Masuda](#).
A Gillespie algorithm for simulating interacting non-Markovian point processes.
2nd Symposium on Spatial Networks.
University of Oxford, UK. September 13–14 (2017).
[Invited talk]
21. [Naoki Masuda](#).
Reinforcement learning behaviour by football managers.
Push the Envelope of Statistical Physics: Econo, Social, Bio and Beyond.
POSTECH, Pohang, Korea, December 12–13 (2016).
[Invited talk]
20. [Naoki Masuda](#).
Highly heterogeneous performances across human individuals: quantifications and implications.
Push the Envelope of Statistical Physics: Econo, Social, Bio and Beyond.
POSTECH, Pohang, Korea, December 12–13 (2016).
[Ignite talk]
19. [Naoki Masuda](#).
Network analysis: An overview.
Systems-NET/IDC in Systems Workshop: At the Intersect between Network Science and Systems Engineering.
University of Bristol, Bristol, UK, September 12 (2016).
[Invited talk]
18. Leo Speidel, Konstantin Klemm, Victor M. Eguíluz, [Naoki Masuda](#).
Dynamical switching of networks facilitates endemicity in the susceptible-infected-susceptible epidemic model.
Asia-Pacific Econophysics Conference 2016.
University of Tokyo, Tokyo, August 24–26 (2016).
[Invited talk]
17. [Naoki Masuda](#).
Cooperation under indirect reciprocity: evidence from neuroimaging.
The Third International Workshop on Market Design Technologies for Sustainable Development.
Keio University, Yokohama, Japan, August 21–22 (2015).
[Invited talk]
16. [Naoki Masuda](#).
Opinion control in the voter model on networks.

Satellite Symposium: Information, Self-Organizing Dynamics and Synchronization (ISDOS) on Networks II. NetSci 2015.

Zaragoza, Spain, June 1–5 (2015).

[Invited talk]

15. Naoki Masuda.

Dynamics of opinion formation and cooperation in populations composed of heterogeneous agents. The 3rd Sociophysics Workshop “From Opinion Dynamics to Voting, Conflict and Terrorism”.

CEVIPOF, CNRS, Paris, March 30–31 (2015).

[Invited talk]

14. Naoki Masuda.

Dominance hierarchy of worker ants as directed networks.

NetSci 2014.

Berkeley, CA, USA, June 2–6 (2014).

[Invited talk]

13. Naoki Masuda.

Laplacian dynamics slows down on temporal networks.

Network Frontier Workshop.

Northwestern University, Evanston, IL, USA, Dec. 4–6 (2013).

[Invited talk]

12. Naoki Masuda, Konstantin Klemm, Víctor M. Eguíluz.

Laplacian dynamics on temporal networks.

International Workshop on Phase Transition, Critical Phenomena and Related Topics in Complex Networks.

Hokkaido University, Sapporo, Japan, September 9–11 (2013).

[Invited talk]

11. Naoki Masuda.

Laplacian-driven dynamics on temporal networks.

Workshop: Temporal and Dynamic Networks: From Data to Models. NetSci 2013.

Danish Technical University, Lyngby, Denmark, June 3–7 (2013).

[Invited talk]

10. Naoki Masuda.

Temporal networks: Introduction.

School. NetSci2013.

Danish Technical University, Lyngby, Denmark, June 3–7 (2013).

[Invited lecture]

9. Naoki Masuda.

Quantifying importance of interaction events in temporal networks.

Toward Mathematical Foundations of Complex Network Theory.

Kyoto University, Kyoto, Japan, September 14–16 (2012).

[Invited speaker]

8. Naoki Masuda.

Laplacian-based centrality in directed graphs.

Discrete Geometric Analysis.

Kyoto University, Kyoto, Japan, August 27–31 (2012).

[Invited talk]

7. Naoki Masuda.
Dependence of oscillation regularity on structure of networks.
Anomalous Statistics, Generalized Entropies and Information Geometry.
Nara Women's University, Nara, Japan, March 6–10 (2012).
[Invited talk]
6. Naoki Masuda, Jin Seop Kim, Byungnam Kahng.
Priority queues with scale-free arrivals of incoming tasks.
Applications of Physics in Financial Analysis 7th International Conference (APFA).
Tokyo Institute of Technology, Tokyo, March 1–5 (2009).
[Invited talk]
5. Naoki Masuda.
How to set payoff matrices for evolutionary games on heterogeneous networks?
3rd International Nonlinear Science Conference.
Tokyo, Japan, March 13–15 (2008).
[Invited talk]
4. Naoki Masuda.
Evolutionary game dynamics on networks: cost normalization perspective.
NSC Winter Workshop 2008: Complex Nonlinear Dynamics Ranging from Biology to Engineering.
Hokkaido University, Sapporo, Japan, March 8–9 (2008).
[Invited talk]
3. Naoki Masuda, Norio Konno.
Multi-state interacting particle systems on scale-free networks.
International Symposium on Topological Aspects of Critical Systems and Networks.
Hokkaido University, Sapporo, Japan, February 13–14 (2006).
In: Proceedings of the International Symposium on Topological Aspects of Critical Systems and Networks, 11–17.
[Invited talk]
2. Naoki Masuda.
Multi-state epidemic dynamics on complex networks.
International Workshop on Complex Networks.
Seoul National University, Seoul, Korea, June 23–24 (2005).
[Invited talk]
1. Naoki Masuda, Kazuyuki Aihara.
Dependence of neural ergodicity on noise strength.
International Symposium on Nonlinear Theory and its Applications (NOLTA2004).
Fukuoka, Japan, November 29 – December 3 (2004).
In: Proceedings of NOLTA2004, 35–38.
[Invited talk]

Research Talks in Seminars (external only)

Binghamton University, NY, USA, 2/9/2024

New Mexico State University, NM, USA, 12/1/2023

Florida State University, FL, USA, 10/11/2023 and 10/13/2023

University of Massachusetts Amherst, MA, USA, 9/26/2023

Peking University, Beijing, China, 6/16/2023
Tsinghua University, Beijing, China, 6/15/2023
University of Michigan, MI, USA, 2/8/2023
Yonsei University, Seoul, South Korea, 9/28/2022
RIKEN Center for Brain Science, Saitama, Japan, 7/15/2022
Okinawa Institute of Science and Technology Graduate University, Okinawa, Japan, 7/6/2022
Purdue University, Joaquín Goñi's lab seminar [Delivered online], 6/16/2022
Clarkson University, NY, USA, 4/8/2022
Northeastern University, MA, USA, 12/3/2021
Binghamton University, NY, USA, 9/29/2021
University of Pennsylvania, PA, USA [Delivered online], 3/2/2021
IMT School For Advanced Studies Lucca, Lucca, Italy [Delivered online], 1/22/2021
Waseda University, Japan, 7/21/2020
University of Rochester, NY, USA, 11/13/2019.
RIKEN Center for Brain Science, Wako, Japan, 7/12/2019
Graduate School of Information Sciences, Tohoku University, Japan, 7/10/2019
Department of Public Health and Primary Care, Imperial College London, UK, 6/26/2019
Faculty of Electrical Engineering, Mathematics and Computer Science Intelligent Systems, TU Delft, Netherlands, 5/9/2019
Disease Ecology Seminar, Center for the Ecology of Infectious Diseases, University of Georgia, GA, USA, 3/20/2019
Department of Mathematics, Imperial College London, UK, 11/20/2018
Computer Science, University of Exeter, UK, 10/25/2018
Faculty of Management and Economics, Dalian University of Technology, Dalian, China, 9/5/2018
Nanyang Technological University, Singapore, 6/28/2018
University of Exeter, Exeter, UK, 3/20/2018
Northeastern University, Boston, MA, USA, 3/9/2018
School of Biological Sciences Research Seminar Series, University of Reading, UK, 1/23/2018
Centre for Water Systems, University of Exeter, UK, 10/20/2017
EPSRC Centre for Predictive Modelling in Healthcare, University of Exeter, UK, 4/3/2017
Department of Computer Science, University of Liverpool, UK, 3/14/2017
Department of Mathematics, University of Sussex, UK, 2/9/2017
Complex Systems Seminar, School of Mathematical Sciences, Queen Mary University of London, UK, 2/7/2017
MACSI seminar, Department of Mathematics and Statistics, University of Limerick, Ireland, 1/9/2017
Math Colloquium, Dartmouth College, USA, 11/17/2016
Networks and Collective Behaviour seminar series, University of Bath, UK, 2/18/2016

Networks Journal Club, Mathematical Institute, University of Oxford, UK, 2/4/2016
 LAND Seminar, School of Mathematics, University of Leeds, UK, 6/23/2015
 Cambridge Networks Network Seminar, University of Cambridge, UK, 12/2/2014
 Centre for Neuroimaging Sciences, King's College London, UK, 9/19/2014
 School of Computing Science, Newcastle University, UK, 5/29/2014
 Department of Energy Science, Sungkyunkwan University, Korea, 8/1/2012

Contributed Conference/Workshop Oral Presentations (excluding those listed above)

119. Jnanajyoti Bhaumik, Naoki Masuda.
 Evolutionary dynamics on switching networks.
 SIAM-NNP (New York-New Jergey-Pennsylvania) Conference.
 New Jersey Institute of Technology, Newark, NJ, October 20–22, 2023.
118. Chanon Thongprayoon, Naoki Masuda.
 Online and offline network embedding using landmarks.
 SIAM-NNP (New York-New Jergey-Pennsylvania) Conference.
 New Jersey Institute of Technology, Newark, NJ, October 20–22, 2023.
117. Hiroki Sayama, Naoki Masuda.
 Deriving dynamical model equations from temporal network data using a graph rewriting framework.
 Satellite session: Recent Advances in Learning and Data-driven Modeling of Complex Systems.
 Conference on Complex Systems 2023.
 Salvador, Brazil, October 16–20, 2023.
116. Naoki Masuda.
 Epidemic threshold of a susceptible-infectious-susceptible model when node interaction obeys non-Poissonian statistics.
 Special Session on Difference and Differential Equations: Modeling, Analysis, and Applications to Mathematical Biology.
 American Mathematical Society, 2023 Fall Eastern Sectional Meeting.
 State University of New York at Buffalo, Buffalo, September 9–10, 2023.
115. Elohimia Fonseca dos Reis, Naoki Masuda.
 Metapopulation network models explain non-Poissonian statistics of intercontact times.
 10th International Congress on Industrial and Applied Mathematics (ICIAM).
 Waseda University, Tokyo, Japan, August 20–25 (2023).
114. Naoki Masuda.
 Early warning signals for multistage transitions in tipping dynamics on networks.
 Minisymposium: DNB Theory and its Applications, 10th International Congress on Industrial and Applied Mathematics (ICIAM).
 Waseda University, Tokyo, Japan, August 20–25 (2023).
113. Naoki Masuda, Prosenjit Kundu.
 Dimension reduction of dynamical systems on networks using various eigenvectors of adjacency matrices.
 SIAM Conference on Applications of Dynamical Systems.
 Portland, OR, May 14–18 (2023).

112. Naoki Masuda, Prosenjit Kundu.
Reducing the dimension of dynamical systems on networks using non-leading eigenvectors of adjacency matrices.
CompleNet 2023.
Universidade de Aveiro, Aveiro, Portugal, April 25–28, 2023.
111. Yiding Cao, Suraj Rajendran, Prathic Sundararajan, Royal Law, Sarah Bacon, Steven Sumner, Naoki Masuda.
Twitter following networks of individuals with adverse childhood experiences.
NERCCS 2023: Sixth Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 22–24, 2023.
110. Ruodan Liu, Naoki Masuda.
Fixation probability on hypergraphs.
NERCCS 2023: Sixth Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 22–24, 2023.
109. Neil Maclaren, Baruch Barzel, Naoki Masuda.
Low-dimensional approximations to nonlinear dynamics on networks: A sentinel node approach.
NERCCS 2023: Sixth Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 22–24, 2023.
108. Jnanajyoti Bhaumik, Naoki Masuda.
Fixation probability of switching networks.
11th International Conference on Complex Networks and Their Applications.
Palermo, Italy, November 8–10 (2022).
107. Prosenjit Kundu, Hiroshi Kori, Naoki Masuda.
Validity of a one-dimensional reduction of dynamical systems on networks.
11th International Conference on Complex Networks and Their Applications.
Palermo, Italy, November 8–10 (2022).
106. Neil Maclaren, Prosenjit Kundu, Naoki Masuda.
Early warning signals of multistage state transitions on complex networks.
11th International Conference on Complex Networks and Their Applications.
Palermo, Italy, November 8–10 (2022).
105. Kazuki Nakajima, Kazuyuki Shudo, Naoki Masuda.
Random hypergraph models preserving degree correlation and local clustering.
11th International Conference on Complex Networks and Their Applications.
Palermo, Italy, November 8–10 (2022).
104. Maisha Islam Sejunti, Naoki Masuda, Dane Taylor.
Floquet theory for spreading dynamics over periodically switching networks.
11th International Conference on Complex Networks and Their Applications.
Palermo, Italy, November 8–10 (2022).
103. Qiong Zhang, Noha Abdel-Mottaleb, Kashin Sugishita, Naoki Masuda.
Bio-inspired design to enhance water distribution network performance.
Symposium Honoring John Crittenden at ACS Fall National Meeting, George Pullman (Marriott Marquis Chicago), Chicago, IL, August 21–25 (2022).
102. Naoki Masuda.
A state-dynamics view of bursts in contact networks, with applications to epidemic processes and

metapopulation models.

Special Session for Mathematical Methods for Ecology and Evolution in Structured Populations,
Spring Eastern Virtual Sectional Meeting.

American Mathematical Society Spring Eastern Virtual Sectional Meeting. Online. March 19–20,
2022.

101. Elohim Fonseca dos Reis, [Naoki Masuda](#).
Emergent non-Poissonian statistics of interevent times from metapopulation models.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
100. Ruodan Liu, Masaki Ogura, Elohim Fonseca Dos Reis, [Naoki Masuda](#).
Impacts of concurrency on epidemic spreading in Markovian temporal networks.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
99. Neil Maclaren, Siobhán Mattison, [Naoki Masuda](#).
A maximum entropy approach to the multivariate “space” of social networks.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
[Honorable Mention of the Best Oral Presentation Award]
98. Kazuki Nakajima, Kazuyuki Shudo, [Naoki Masuda](#).
Higher-order rich-club phenomenon in research funding.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
97. Maisha Islam Sejunti, [Naoki Masuda](#), Dane Taylor.
Floquet theory for spreading dynamics over periodically switching networks.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
96. Ruodan Liu, Masaki Ogura, Elohim Fonseca dos Reis, [Naoki Masuda](#).
Modeling effects of concurrency on epidemic spreading in Markovian temporal networks.
Networks 2021: A Joint Sunbelt and NetSci Conference.
Online, July 5–10, 2021.
95. Chanon Thongprayoon, Lorenzo Livi, [Naoki Masuda](#).
Continuous-time trajectory of tie-decay temporal networks.
Networks 2021: A Joint Sunbelt and NetSci Conference.
Online, July 5–10, 2021.
94. Noha Abdel-Mottaleb, Qiong Zhang, Kashin Sugishita, [Naoki Masuda](#).
Can bio-inspired network design improve the performance of water distribution networks (WDNs)?
2021 World Environmental & Water Resources Congress.
Online, June 7–11, 2021.
93. Alessio Cardillo, [Naoki Masuda](#).
Tipping point in evolutionary games on networks triggered by zealots.
CompleNet Live 2021, Online, May 24–26, 2021.
92. Irene Malvestio, Alessio Cardillo, [Naoki Masuda](#).
Interplay between k-core and communities in networks.

CompleNet Live 2021, Online, May 24–26, 2021.

91. [Naoki Masuda](#), Victor M. Preciado, Masaki Ogura.
Analysis of the susceptible-infected-susceptible model in finite networks using the non-backtracking matrix.
Minisymposium on Latest Advances in Spectral Linear Algebra in Network Science, the SIAM Conference on Applied Linear Algebra (LA21).
Online, May 17–21, 2021.
90. Hang-Hyun Jo, [Naoki Masuda](#).
Finite-size effects on the convergence time in continuous-opinion dynamics.
2021 Korean Physical Society Spring Meeting. Online, April 21–23, 2021.
89. Lingqi Meng, [Naoki Masuda](#).
Epidemic threshold for metapopulation model networks with a second-order mobility rule.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
88. Mengyuan J. Sun, [Naoki Masuda](#).
COVID-19 impacts on domestic airlines via multilayer network analysis.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
87. Chanon Thongprayoon, Lorenzo Livi, [Naoki Masuda](#).
Visualizing trajectory of tie-decay temporal networks.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
86. Lingqi Meng, [Naoki Masuda](#).
Diffusion Speed of the Node2vec Random Walk on Networks
COMPLEX20 (Conference on Complex Systems 2020).
Online, December 4–11, 2020.
85. Xiuxiu Zhan, Ziyu Li, [Naoki Masuda](#), Petter Holme, Huijuan Wang.
Susceptible-infected-spreading-based network embedding in static and temporal networks.
9th International Conference on Complex Networks and their Applications.
Online, December 1–3, 2020.
84. Sadamori Kojaku, Giacomo Livan, [Naoki Masuda](#).
Detecting citation cartels in journal citation networks.
NetSci 2020.
Online (due to COVID-19), September 17–25, 2020.
83. Irene Malvestio, Alessio Cardillo, [Naoki Masuda](#).
Interplay between k -core and community structure in networks.
NetSci 2020.
Online (due to COVID-19), September 17–25, 2020.
82. Kashin Sugishita, [Naoki Masuda](#).
Structural evolution of US airline networks.
NetSci 2020.
Online (due to COVID-19), September 17–25, 2020.

81. jliç Hang-Hyun Jo, Takayuki Hiraoka, jUçNaoki Masudaj/Uç, Aming Li.jbrç Modeling temporal networks with bursty activity patterns of nodes and links.
2020 Korean Physical Society Spring Meeting.
Online, July 13–15, 2020.
80. Marinho A. Lopes, Jiaxiang Zhang, Dominik Krzemiński, Khalid Hamandi, Qi Chen, Lorenzo Livi, Naoki Masuda.
Recurrence analysis of dynamic functional brain networks.
Third Northeast Regional Conference on Complex Systems.
Online, April 1–3, 2020.
79. Elohim Fonseca dos Reis, Aming Li, Naoki Masuda.
Interacting human dynamics as a mixture of Poisson processes.
Third Northeast Regional Conference on Complex Systems.
Online, April 1–3, 2020.
78. Alessio Cardillo, Naoki Masuda.
Critical mass effect in evolutionary games on networks triggered by zealots.
NetSci-X 2020.
Tokyo, Japan, January 20–23, 2020.
77. Kashin Sugishita, Mason A. Porter, Mariano Beguerisse-Díaz, Naoki Masuda. Opinion dynamics in tie-decay networks.
NetSci-X 2020.
Tokyo, Japan, January 20–23, 2020.
76. Marinho A. Lopes, Jiaxiang Zhang, Dominik Krzemiński, Khalid Hamandi, Lorenzo Livi, Naoki Masuda.
Recurrence analysis of dynamic brain networks: Characterisation of the spatio-temporal dynamics of magnetoencephalographic recordings.
8th International Conference on Complex Networks and their Applications.
Lisbon, Portugal, December 10–12, 2019.
75. J. Miyata, A. Sasamoto, T. Ezaki, N. Masuda, Y. Mori, M. Isobe, T. Aso, T. Murai, H. Takahashi.
Conservative and hasty decision styles are differently associated with static and dynamic functional connectivity in healthy and schizophrenia people.
Society for Neuroscience, Chicago, IL, October 19–23, 2019.
74. Elohim Fonseca dos Reis, Mark Viney, Naoki Masuda.
Network structure of wild and laboratory mice immune states.
International Conference on AI and Data Science: Mathematics and Applications.
Suwon, Korea, November 4–5, 2019.
73. Aoi Naito, Naoki Masuda, Tatsuya Kameda.
Social network and collective intelligence under nonstationary uncertain environment.
7th International Conference on Cognitive Neurodynamics.
Alghero, Italy, September 29 – October 2, 2019.
72. Takayuki Hiraoka, Naoki Masuda, Aming Li, Hang-Hyun Jo.
Modeling temporal networks with bursty node and link activity.
Conference on Complex Systems 2019.
Nanyang Technological University, Singapore, September 30 – October 4, 2019.
71. Elohim Fonseca dos Reis, Naoki Masuda, Mark Viney.
Immune networks in wild mice, *Mus musculus domesticus*.

- Parasitic Helminths: New Perspectives in Biology and Infection.
Hydra, Greece, September 1–6, 2019.
70. Sadamori Kojaku, Giulio Cimini, Guido Caldarelli, Naoki Masuda.
Structural changes in an interbank market across the financial crisis: A multiple core-periphery analysis.
NetSci 2019, University of Vermont, Burlington, VA, USA, May 27–31, 2019
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8. Hiroyoshi Miwa, Naoki Masuda, Norio Konno.
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7. Naoki Masuda, Hiroyoshi Miwa, Norio Konno.
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5. Naoki Masuda, Kazuyuki Aihara. Band-pass filtering properties of interspike interval encoding with Morris-Lecar neurons.
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83. Jiyoung Kang, Naoki Masuda.
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82. Jnanajyoti Bhaumik, [Naoki Masuda](#).
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Ohio State University, Columbus, OH, July 16–21, 2023.
81. Kazuki Nakajima, Ruodan Liu, Kazuyuki Shudo, [Naoki Masuda](#).
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Northwestern University, Evanston, IL, June 26–28, 2023.
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77. Madison Russell, Marie Saitou, [Naoki Masuda](#).
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76. Maisha Islam Sejunti, [Naoki Masuda](#), Dane Taylor.
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75. Prosenjit Kundu, Hiroshi Kori, [Naoki Masuda](#).
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74. Yanyan Li, Ziliang Wang, Marie Saitou, [Naoki Masuda](#).
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73. Lingqi Meng, [Naoki Masuda](#).
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] Configuration models for hypergraphs preserving local quantities of nodes and hyperedges.
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25th Conference on Statistical Physics of the International Union for Pure and Applied Physics (STATPHYS 25).
Seoul National University, Seoul, Korea, July 22–26 (2013).
27. Takamitsu Watanabe, S. Hirose, H. Wada, Y. Imai, T. Machida, I. Shirouzu, S. Konishi, Y. Miyashita, [Naoki Masuda](#).
Second-order maximum entropy models applied to macroscopic resting-state networks in human brains.
NetSci 2013.
Copenhagen, Denmark, June 3–7 (2013).
26. Taro Takaguchi, Nobuo Sato, Kazuo Yano, [Naoki Masuda](#).
Extracting directed influential relationship between nodes from undirected temporal networks.
NetSci 2013.
Copenhagen, Denmark, June 3–7 (2013).
25. Mitsuhiro Nakamura, [Naoki Masuda](#).
Stern moral assessment promotes ingroup favoritism in indirect reciprocity.
8th Conference on European Social Simulation Association.
Salzburg, Austria, September 10–14 (2012).
24. Hiroshi Kori, Yoji Kawamura, [Naoki Masuda](#).
Structure of cell networks critically determines oscillation regularity.
International Symposium on Complex Systems 2011.
University of Tokyo, Tokyo, Japan, December 1–3 (2011).
23. Ryo Fujie, [Naoki Masuda](#), Kazuyuki Aihara.
Modeling competition of more than two languages.
International Symposium on Complex Systems 2011
University of Tokyo, Tokyo, December 1–3 (2011).
22. Taro Takaguchi, Mitsuhiro Nakamura, Nobuo Sato, Kazuo Yano, [Naoki Masuda](#).
Predictability of conversation partners in Japanese company offices.
International Symposium on Complex Systems 2011
University of Tokyo, Tokyo, Japan, December 1–3 (2011).
21. Taro Takaguchi, Mitsuhiro Nakamura, Nobuo Sato, Kazuo Yano, [Naoki Masuda](#).
Predictability of communication patterns and its correlates to individuals' positions in social networks.
European Conference on Complex Systems (ECCS'11).
Vienna, Austria, September 12–16 (2011).
20. Taro Takaguchi, [Naoki Masuda](#).
Effect of non-Poissonian inter-event intervals on opinion dynamics.

- NetSci 2011.
Budapest, Hungary, June 8–10 (2011).
19. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Collective enhancement of regularity in networks of noisy networks.
Far-From-Equilibrium Dynamics 2011.
Kyoto University, Kyoto, January 4–8 (2011).
 18. Ralf Toenjes, Naoki Masuda, Hiroshi Kori.
Synchronization transition of identical phase oscillators in a directed small-world network.
Far-From-Equilibrium Dynamics 2011.
Kyoto University, Kyoto, Japan, January 4–8 (2011).
 17. Naoki Masuda.
A method to immunize networks with community structure.
NetSci 2010.
Boston, USA, May 10–14 (2010).
 16. Yoshimi Yoshino, Naoki Masuda.
Evolutionary Prisoner's Dilemma on dynamic networks: results for different payoff schemes.
BIFI2010 International Congress (Networks: A framework for cross disciplinary applications).
Zaragoza, Spain, February 3–6 (2010).
 15. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Relation between fluctuations in isolated components and those in networked components.
International Symposium on Complex Systems Biology.
University of Tokyo, Tokyo, Japan, September 29 – October 1 (2009).
 14. Jin Seop Kim, Naoki Masuda, Byungnam Kahng.
A priority queue model with bursty arrivals of incoming tasks.
International Conference on Complex Networks: The Past 10 Years and Future.
Seoul, Korea, December 19–22 (2008).
 13. Naoki Masuda, Brent Doiron.
Signal discrimination performed by population of spiking neurons enhanced by background gamma oscillations.
The Annual Computational Neuroscience Meeting (CNS2008).
Portland, Oregon USA, July 19–24 (2008).
 12. Taro Ueno, Naoki Masuda.
Effective intervention and vaccination strategies against nosocomial infection based on network analysis.
13th International Society for Infectious Diseases.
Kuala Lumpur, Malaysia, June 19–22 (2008).
In: International Journal of Infectious Diseases. 12 (Supplement 1), E347–E348 (2008).
 11. Naoki Masuda, Shun-ichi Amari.
Modeling memory transfer in cerebellar vestibulo-ocular-reflex learning.
The Annual Computational Neuroscience Meeting (CNS2006).
Edinburgh, UK, July 16–20 (2006).
 10. Michael Gutmann, Naoki Masuda, Fusao Kato, Kazuyuki Aihara.
Bursting pacemaker models for the preBotzinger complex.

Japan-Germany Symposium on Computational Neuroscience.
RIKEN Brain Science Institute, Wako, Japan, February 1–4 (2006).

9. Michael Gutmann, Naoki Masuda, Kazuyuki Aihara.
Bifurcations in respiratory neuronal pacemaker models.
International Symposium on Complexity Modelling and its Applications 2005.
University of Tokyo, Tokyo, Japan November 21–23 (2005).
8. Kazumichi Ohtsuka, Norio Konno, Naoki Masuda, Kazuyuki Aihara.
Phase transition and indirect effects of the four-state stochastic model on the square lattice.
European Conference on Mathematical and Theoretical Biology (ECMTB) 2005.
Dresden, Germany, Jul. 18–22 (2005).
In: Proceedings, v.2, p.277.
7. Naoki Masuda, Masato Okada, Kazuyuki Aihara.
Spatial filtering by locally connected neurons.
The Annual Computational Neuroscience Meeting (CNS2005).
Madison, Wisconsin USA, July 17–21 (2005).
6. Kazumichi Ohtsuka, Norio Konno, Naoki Masuda, Kazuyuki Aihara.
Phase transition and coexistence of three-state stochastic models on the two-dimensional lattice space.
5th International Conference on Biological Physics (ICBP 2004).
Gothenburg, Sweden, August 23–27 (2004).
5. Naoki Masuda, Kazuyuki Aihara.
Encoding multiple temporal waveforms by neural population with spike-time-dependent plasticity.
The Annual Computational Neuroscience Meeting (CNS2004).
Baltimore, Maryland, USA, July 17–22 (2004).
4. Naoki Masuda, Hiroyoshi Miwa, Norio Konno.
Emergence of power law in dynamical thresholding network models with intrinsic vertex weights.
International Conference on Statistical Physics (Statphys Kolkata V).
Kolkata, India, June 27 – July 1 (2004).
3. Naoki Masuda, Kazuyuki Aihara.
Dual coding and effects of global feedback in multilayered neural networks.
The Annual Computational Neuroscience Meeting (CNS2003).
Alicante, Spain, July 5–9 (2003).
2. Naoki Masuda, Kazuyuki Aihara.
Dual coding and clustering in feedforward neural networks.
The 2003 Latsis Symposium on Neural Coding and Modeling.
EPFL, Lausanne, Switzerland, February 17–19 (2003).
1. Naoki Masuda, Kazuyuki Aihara.
Population rate coding and synchrony-based temporal coding dually appearing in feedforward neural networks.
7th Tamagawa Dynamic Brain Forum.
Visegrad, Hungary, September 8–11 (2002).
In: Proceedings p.36.

Professional Service

Editorial Work

Regular

11/2023–present	Editor, Journal of Computational Science
10/2022–present	Associate Editor, Frontiers in Complex Systems, Complex Networks section
10/2020–present	Academic Editor, Complexity
6/2020–present	Associate Editor, Frontiers in Physics, Social Physics section
6/2019–present	Editor, Journal of Computational Social Science
1/2019–present	Associate Editor, Journal of Complex Networks
1/2014–present	Editorial Board, Scientific Reports
5/2014–11/2023	Editorial Board, PLOS ONE
3/2018–2/2023	Editorial Board, Journal of Physics Communications
6/2013–12/2019	Review Editor, Frontiers in Physics, Interdisciplinary Physics section

Ad-hoc

2020	Guest Editor, Japanese Economic Review Special Issue: Economics and Complex Networks (co-edited with Teruyoshi Kobayashi)
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Organization of Conferences and Workshops

Program Committee Member

NetSci 2024

Québec, Canada, June 17–21 (2024).

Program Committee Member

CompleNet 2024

Exeter, UK, April 23–26 (2024).

Program Committee Member

NetSci-X 2024

Venice, Italy, January 22–25 (2024).

Program Committee Member

NetSci 2023

Vienna, Austria, July 10–14 (2023).

Program Committee Member

CompleNet 2023

Aveiro, Portugal, April 25–28 (2023).

Program Committee Member

NetSci-X 2023

Buenos Aires, Argentina, February 7–10 (2023).

Vice Chair

2022 IEEE International Conference on Big Data

Osaka, Japan, December 17–20, (2022).

Program Committee Member

Conference on Complex Systems (CCS2022)

Palma de Mallorca, Spain, October 17–21 (2022).

Program Committee Member

NetSci 2022

Online, July 25–29 (2022).

International Advisory Committee Member

28th IUPAP International Conference on Statistical Physics (STATPHYS28)

Tokyo, Japan, August 7–11 (2023).

Organizer (Coorganized with Tomomi Kito and Kazuki Nakajima)

Socioeconomic Networks and Network Science Workshop 2022

Online, August 1–2 (2022).

Program Committee Member

NetSci 2022

Online, July 25–29 (2022).

General Co-Chair

Fifth Northeast Regional Conference on Complex Systems

Buffalo and other satellite locations, March 30 – April 1 (2022).

Program Committee Member

NetSci-X 2022

Porto Portugal, February 8–11 (2022).

Organizer (Coorganized with Tomomi Kito and Kazuki Nakajima)

Science of Innovation and Success Workshop

Waseda University, Japan (hybrid format), August 2–3 (2021).

Program Committee Member

2021 Online Conference on Complex Networks (CompleNet Live 2021)

Online, May 24–26 (2021).

General Co-Chair

Fourth Northeast Regional Conference on Complex Systems

Online, March 31 – April 2 (2021).

Senior Program Committee Member

The 12th International Conference on Social Informatics

Pisa, Italy, October 6–9 (2020).

Program Committee Member

NetSci 2020

Rome, Italy (held online due to COVID-19), September 17–25 (2020).

Poster Chair

Tenth International Conference on Complex Systems (ICCS 2020)

Online, July 27–31 (2020).

Organizer (Coorganized with Tomomi Kito and Yuka Fujiki)

Socioeconomic Networks and Network Science Workshop

Waseda University, Japan (held online due to COVID-19), July 3–4 (2020).

Program Committee Member

6th Annual International Conference on Computational Social Science (IC2S2 2020)

Cambridge, MA, USA (held online due to COVID-19), July 17–20 (2020).

Program Committee Member

8th Annual SIAM Workshop on Network Science (NS20)

Toronto, Ontario, Canada, July 9–10 (2020).

Poster Chair and Program Committee Member

Third Northeast Regional Conference on Complex Systems
University at Buffalo, USA (held online due to COVID-19), April 1–3 (2020).

Program Committee Member
11th International Conference on Complex Networks (CompleNet 2020)
Exeter, UK, March 31 – April 3 (2020).

Program Chair
NetSci-X 2020
Tokyo, Japan, January 20–23 (2020).

Organizer (Coorganized with Guido Caldarelli, Hiroyasu Inoue, and Carolina Mattsson)
NetSci-X Special Workshop on Economic & Financial Networks.
Tokyo, Japan, January 23 (2020).

Program Committee Member
Eighth International Conference on Complex Networks and Their Applications
Lisbon, Portugal, December 10–12 (2019).

Program Committee Member
The 11th International Conference on Social Informatics
Doha, Qatar, November 18–21 (2019).

Program Committee Member
5th Annual International Conference on Computational Social Science (IC2S2 2019)
Amsterdam, the Netherlands, July 17–20 (2019).

Program Committee Member
NetSci 2019
Burlington, VT, USA, May 27–31 (2019).

Program Committee Member
11th International Conference on Complex Networks (CompleNet 2019)
Tarragona, Spain, March 18–21 (2019).

Program Committee Member
Seventh International Conference on Complex Networks and Their Applications
Cambridge, UK, December 11–13 (2018).

Organizer (Coorganized with Nicola Perra and Vincenzo Nicosia)
2nd UK Network Science Workshop
University of Greenwich, London, UK, October 26 (2018).

Program Committee Member
The 10th International Conference on Social Informatics
St. Petersburg, Russia, September 24–27 (2018).

Program Committee Member
Workshop on Social Influence 2018 (SI 2018)
Barcelona, Spain, August 28 (2018).

Program Committee Member
The 4th Annual International Conference on Computational Social Science (IC2S2 2018)
Northwestern University, Evanston, USA, July 12–15 (2018).

Program Committee Member
SIAM Workshop on Network Science 2018 (SIAMNS 2018)
Portland, OR, USA, July 12–13 (2018).

Program Committee Member

Integration of Empirical Data in Network Epidemiology (iodine)

A satellite symposium in NetSci 2018, Paris, France, June 12 (2018).

Senior Program Committee Member

NetSci 2018

Paris, France, June 11–15 (2018).

Organizer

UK Network Science Workshop

University of Bristol, Bristol, UK, May 11 (2018).

Program Committee Member

NetSci-X 2018

Hangzhou, China, January 5–8 (2018).

Program Committee Member

Sixth International Workshop on Complex Networks and their Applications

Lyon, France, November 29 – December 1 (2017).

Organizer

Engineering Applications of Networks Workshop

University of Bristol, Bristol, UK, November 1 (2017).

Program Committee Member

Workshop on Social Influence 2017 (SI 2017)

Sydney, Australia, July 31 (2017).

Program Committee Member

CCS2017 Satellite Meeting Modeling of Disease Contagion Processes 6th Edition

Cancun, Mexico, September 17–22 (2017).

Program Committee Member

The 9th International Conference on Social Informatics

Oxford, UK, September 13–15 (2017).

Program Committee Member

NetSci 2017

Indianapolis, Indiana, USA, June 19–23 (2017).

Program Committee Member

4th European Network Intelligence Conference 2017 (ENIC'17)

Duisburg, Germany, September 11–12 (2017).

Program Committee Member

NetSci-X 2017

Tel-Aviv, Israel, January 15–18 (2017).

Program Committee Member

Fifth International Workshop on Complex Networks and their Applications

Milan, Italy, November 30 – December 2 (2016).

Program Committee Member

Workshop on Social Influence 2016 (SI 2016) San Francisco, USA, August 18 (2016).

Organizer (coorganized with Juyong Park)

Satellite workshop: Competition networks and centrality

NetSci 2016

Seoul, Korea, May 30 (2016).

Organizer (coorganized with Byungnam Kahng and Zengru Di)

Satellite workshop: Network science research in Asia: Fundamentals and applications

NetSci 2016

Seoul, Korea, May 30–31 (2016).

Program Co-chair

NetSci 2016

Seoul, Korea Republic, May 30 – June 3 (2016).

Program Committee Member

NetSci-X 2016

Wroclaw, Poland, January 11–13 (2016).

Program Committee Member

Fourth International Workshop on Complex Networks and their Applications

Bangkok, Thailand, November 23–27 (2015).

Coorganizer

Special Session: Epidemic dynamics: mathematical modeling and data analysis

4th IFAC Conference on Analysis and Control of Chaotic Systems

Tokyo, Japan, August 26–28 (2015).

Program Committee Member

NetSci-X 2015

Rio de Janeiro, Brazil, January 14–16 (2015).

Program Committee Member

Third International Workshop on Complex Networks and their Applications

Marrakesh, Morocco, November 23–27 (2014).

Program Committee Member

Workshop on Social Influence (SI 2014)

Barcelona, Spain, November 10 (2014).

Program Committee Member

Second International Workshop on Complex Networks and their Applications

Kyoto, Japan, December 2–5 (2013).

Program Committee Member

NetSci 2013

Kopenhagen, Denmark, June 3–7 (2013).

Program Committee Member

First Workshop on Rational, Secure and Private Ad-hoc Networks (RASEP'11)

Crete, Greece, October 16–21 (2011).

Program Committee Member

The 9th Asia-Pacific Complex Systems Conference (Complex'09)

Tokyo, Japan, November 4–7 (2009).

Program Committee Member

Special Session: Evolutionary Games on Complex Networks

IEEE Congress on Evolutionary Computation (CEC 2009)

Trondheim, Norway, May 18–21 (2009).

Coorganizer

NSC Winter Workshop 2008: Complex Nonlinear Dynamics ranging from Biology to Engineering
Sapporo, Japan, March 8–10 (2008).

Organizer (Coorganized with Martin Hasler, Kazuyuki Aihara, and Oscar De Feo)
Special Session: Nonlinear Analysis and Modeling of Neural Signal Processing and Coding
International Symposium on Nonlinear Theory and its Applications (NOLTA2004)
Fukuoka, Japan, November 29 – December 3 (2004)

Award Judge

Japanese Society for Mathematical Biology Early Career Award, 2022, 2023.

10/2020–09/2022 Judge for Akira Okubo Prize,
jointly administered by the Society for Mathematical Biology and the Japanese Society for Mathematical Biology.

Member of Erdős-Rényi Prize Committee, 2020, Network Science Society.

Young Scientist Award (YSA) in Socio- and Econophysics 2020,
Division of socio-economic physics, German Physical Society.

Japanese Society for Mathematical Biology Early Career Award, 2019. (Head of the committee)

Referee for Grant Applications

Army Research Office

Air Force Office of Scientific Research

National Science Foundation (panelist)

Concerted Research Actions (CRA) 2024, A university in Belgium

Research Foundation Flanders (FWO), Belgium, including FWO Review College panel membership
in 2023–2025

Austrian Science Fund (FWF)

Swiss National Science Foundation

Engineering and Physical Sciences Research Council (EPSRC), UK

National Science Centre, Poland

Fund for Scientific Research-FNRS, Belgium ...

Programma per Giovani Ricercatori – Rita Levi Montalcini, Italy

Japan Society for the Promotion of Science, Japan

MATH AmSud, cooperation between France and Latin America

Referee for Peer-Reviewed Journals

More than 90 journals including Biology Letters, Nature Communications, Nature Physics, Physical Review Letters, Physical Review X, PLOS Biology, Proceedings of the National Academy of Sciences of the United States of America, Proceedings of the Royal Society B, and SIAM Review.

For a full list, see www.naokimasuda.net/publ.html.

Membership in Invitation-Based Organizations

10/2012–present H1Connect (formerly, Faculty Opinions and F1000 Faculty) Member

Membership in Other Professional Organizations

Network Science Society
 Society for Industrial and Applied Mathematics (SIAM)
 American Mathematical Society
 Society for Mathematical Biology
 American Physical Society
 Japanese Society for Mathematical Biology

Enterprise Partnership

3/2023–12/2023 Subject Matter Expert, Freelancer Technology Pty Limited
 (Project with Logistic Management Institute (LMI),
 Center for Disease Control and Prevention (CDC), and
 National Aeronautics and Space Administration (NASA))

10/2021–6/2022 Subject Matter Expert, Freelancer Technology Pty Limited
 (Project with Center for Disease Control and Prevention (CDC) and
 National Aeronautics and Space Administration (NASA))

4/2020–present Lecture speaker on academic writing, Enago

12/2018–present Technical Advisor, Nodes & Links Limited

Evaluator for Promotion and Tenure for Other Institutions

One university in Japan
 Five times for R1 universities in the US

University Service

State University of New York at Buffalo

12/2023–: SUNY Office of Research, Innovation and Economic Development Reviewer Panel
 (This is a State University of New York systemwide service.)

9/2023–3/2024: member, Graduate School Executive Committee sub-committee on a modified English language competency assessment requirement for international TA/GA/RA's

7/2023–1/2024: Chair of the Applied Mathematics Hiring Committee, Department of Mathematics

4/2023–present: Diversity, Equity and Inclusive Committee, Department of Mathematics

2023–: faculty advisor, American Mathematical Society graduate student chapter at University at Buffalo

2022–2023: Hiring Committee for the External Chair, Department of Mathematics

7/2022–present: Graduate School Director, Department of Mathematics

2022–2023: Executive Committee, Department of Mathematics

1/2022–2/2022: Ad-hoc Committee for graduate student admission for Computational and Data Enabled Science and Engineering (CDSE) Program

2021–2022: Applied Mathematics Hiring Committee, Department of Mathematics

2021: Ad-hoc Committee for the Creation of a Departmental Disciplinary Excellence Proposal
 2020, 2021: Graduate Studies Awards Committee
 2020: Ad-hoc Committee for Faculty's Reappointment, Department of Mathematics
 2020: Chairmanship Committee, Department of Mathematics
 2019: Applied Mathematics Hiring Committee, Department of Mathematics
 2019–: Department of Mathematics Area Committee in Applied Mathematics
 2019–: Department of Mathematics Graduate Studies Committee

University of Bristol, UK

10/2018–8/2019: Year 2 (Undergraduate) Tutor
 10/2016–8/2019: Study Abroad Academic Director
 9/2014–8/2019: Personal Tutor (≈ 20 undergraduate and master course students each year)

University of Tokyo, Japan (all roles are officially in Japanese; translation by NM)

2012: Curriculum Coordinator (Graduate)
 2012: Coordinator for Departmental Blochures
 2011: Committee Member for the Tenth Anniversary Event of the Graduate School
 2008-2011: Curriculum Coordinator (Undergraduate)
 2008-2011: Library Committee Member
 2007, 2008, 2010, 2012: Organizer, Colloquium on Mathematical Informatics
 2007: Minute taker
 2007: Coordinator of Factory Tours (Undergraduate)

Teaching

State University of New York at Buffalo, USA

Network Theory (for graduate students, MTH 550), also listed as MTH 463 for undergraduate students
 3 credit hours
 Spring 2021, Fall 2022
 Topics in Applied Math: Stochastic Processes on Networks (for graduate students, MTH 563)
 3 credit hours
 Spring 2020, Spring 2022, Spring 2023
 Introduction to Differential Equations (for undergraduate students, MTH 306)
 4 credit hours
 Spring 2020, Spring 2021, Spring 2022
 Introduction to Numerical Analysis I (for graduate students, MTH 537)
 3 credit hours
 Fall 2019, Fall 2020, Fall 2021

University of Bristol, UK

Numerical Methods in MATLAB (for second year undergraduate, EMAT 20920)
 10 CPs
 Autumn 2014, Autumn 2015, Autumn 2016, Autumn 2017

Nonlinear Dynamics and Chaos (for third year undergraduate, EMAT 33100)

10 CPs

Autumn 2015, Autumn 2016 (50% of teaching)

Advanced Nonlinear Dynamics and Chaos (for masters, EMATM001)

10 CPs

Autumn 2018 (50% of teaching)

Optimisation Theory and Applications (for third year undergraduate, EMAT 30670)

10 CPs

Autumn 2016 (50% of teaching), Autumn 2017 (50%), Autumn 2018 (100%)

Mathematical and Data Modelling 2 (for second year undergraduate, EMAT 22220)

20 CPs

Autumn 2014, Autumn 2015, Autumn 2016, Autumn 2017, Autumn 2018

Role: supervision and marking of 3–4 group projects of 4 weeks

Mathematical and Data Modelling 3 (for third year undergraduate, EMAT 30005)

30 CPs

2017/18, 2018/19 (25% of teaching) Role: organisation, supervision, and marking of group projects for a semester with other teaching staff

University of Tokyo, Japan

4860-1005: Mathematical Structures in Informatics (for Ph.D. and M.Sc students)

2 credit hours, 1 semester

Spring 2013 (in English), Spring 2011, and Spring 2009 (in Japanese)

Role: sole unit organiser

03-541530: Topology (3rd year undergrad. Originally in Japanese. Translation by NM)

1.5 credit hours, 1 semester

Autumn 2007–2013.

Role: sole unit organiser

03-541620 Group Journal Club (4th year undergrad. Originally in Japanese. Translation by NM)

1.5 credit hours (co-taught with another faculty), 1 semester

Spring 2007, 2008, 2010, 2011, 2013

Role: sole unit organiser

Other

Lecturing (on temporal networks)

“Advanced Complex Networks” in the Master of Physics of Complex Systems.

Programa d’Impuls i Internacionalització per a Estudis de Postgrau.

University of Balearic Islands, Spain, 29 May – 2 June, 2017

Part-time Lecturer

7735: Social Simulations (3rd year undergrad. Originally in Japanese. Translation by NM)

Tokyo Institute of Technology, Japan

Spring 2008–2013. 2 credit hours

Research Advising

PhD thesis supervision — current

2/2024–present	Shilong Yu, University at Buffalo Department of Mathematics (sole supervision by NM)
1/2024–present	HyunAh Lee, University at Buffalo Department of Biostatistics (effective co-supervision with Ekaterina Noyes)
8/2023–present	Nepa Nurjahan Akter, University at Buffalo Department of Mathematics (sole supervision by NM)
8/2023–present	Bisna Mary Eldo, University at Buffalo Department of Mathematics (sole supervision by NM)
8/2023–present	Quoc Chuong Nguyen, University at Buffalo Department of Mathematics (sole supervision by NM)
8/2022–present	Katherine Betz, University at Buffalo Department of Mathematics (sole supervision by NM)
8/2021–present	Saiful Islam, University at Buffalo Computational and Data Enabled Science and Engineering (CDSE) Program (sole supervision by NM)
8/2021–present	Maisha Islam Sejunti, University at Buffalo Department of Mathematics (co-supervision with Dane Taylor)
4/2021–present	Jnanajyoti Bhaumik, University at Buffalo Department of Mathematics (sole supervision by NM)
7/2020–present	Chanon Thongprayoon, University at Buffalo Department of Mathematics (sole supervision by NM)
2/2020–present	Ruodan Liu, University at Buffalo Department of Mathematics (sole supervision by NM)

PhD thesis supervision — completed

8/2019–5/2022	Lingqi Meng, University at Buffalo Department of Mathematics (sole supervision by NM)
1/2018–5/2022	Elohim Fonseca dos Reis, University at Buffalo (transferred from University of Bristol, 08/2019) Department of Mathematics (sole supervision by NM)
4/2019–8/2019	Maximilian Kloucek, University of Bristol (2nd/3rd supervisor) Co-supervised with Paddy Royall (terminated in the middle because of NM's move to the USA)
9/2017–8/2019	Robert Eyre, University of Bristol (2nd supervisor, 20%) Co-supervised with Filippo Simini (terminated in the middle because of NM's move to the USA)
9/2016–8/2019	Alfie Wearn, University of Bristol (2nd supervisor) Co-supervised with Elizabeth Coulthard and Risto Kauppinen (terminated in the middle because of NM's move to the USA)
9/2015–8/2019	Simon Godwin, University of Bristol (2nd supervisor, 50%) Co-supervised with Lucia Marucci
9/2015–11/2018	Christelle Langley, University of Bristol (2nd supervisor, 20%) Co-supervised with Jade Thai
4/2010–3/2013	Taro Takaguchi, University of Tokyo (sole supervision by NM)
4/2010–3/2013	Mitsuhiro Nakamura, University of Tokyo (sole supervision by NM)

Master and Bachelor thesis supervision

08/2021–05/2022	Yanyan Li, Senior Thesis (undergraduate), University at Buffalo (sole supervision by NM)
07/2020–05/2021	Mengyuan (Jason) Sun, Senior Thesis (undergraduate), University at Buffalo (sole supervision by NM)
01/2018–08/2019	3 MSc students, University of Bristol (from January to summer)
09/2014–05/2019	6 MEng students, University of Bristol (one year project)
09/2016–05/2019	1 BEng students, University of Bristol (one year project)
04/2007–02/2014	13 M.Sc students, University of Tokyo (two year project)
10/2006–02/2013	17 B.Sc students, University of Tokyo (one semester project)

Rotation project supervision:

PhD in Neural Dynamics, University of Bristol

01/2019–04/2019	Arthur Spencer (co-supervised with Ela Chakkarapani and Jon Brooks)
05/2018–08/2018	Oscar Davy (co-supervised with Jade Thai)
01/2018–04/2018	Anne-Lene Sax (co-supervised with Elizabeth Coulthard)
01/2016–04/2016	Alfie Wearn (cosupervised with Elizabeth Coulthard and Risto Kauppinen)
05/2015–08/2015	Felicity Inkpen (cosupervised with Risto Kauppinen)

Junior faculty mentor

- 8/2023–7/2025 Sarbendu Rakshit
Visiting Assistant Professor (full time), University at Buffalo)
- 1/2021–12/2022 Prosenjit Kundu
Visiting Assistant Professor (full time), University at Buffalo

Fellowship sponsor

- 04/2017–03/2019 Dr. Christos Ellinas
“Application of complex networks to project robustness and resilience”
EPSRC Doctoral Prize Fellowship, hosted at University of Bristol

Postdoc supervision

University at Buffalo

- 5/2023–
1/2022– Si Thu Aung (funded by Japan Science and Technology Agency)
- 12/2021–11/2023 Neil G. MacLaren (funded by Japan Science and Technology Agency)
- 8/2020–5/2021 Pitambar Khanra (funded by Japan Science and Technology Agency)
- 4/2019–3/2021 Rupam Acharyya (funded by JP Morgan Chase)
- Kashin Sugishita (funded by Japan Society for the Promotion of Science;
transferred from University of Bristol, 08/2019)

University of Bristol

- 9/2019–2/2020 Irene Malvestio (funded by Cookpad Limited)
- 6/2019–1/2020 Marinho Antunes Lopes (funded by GW4, UK)
- 7/2018–7/2019 Alessio Cardillo (funded by Cookpad Limited)
- 4/2016–3/2019 Sadamori Kojaku (funded by CREST, Japan Science and Technology Agency (JST))
- 5/2015–3/2016 Kohei Tamura (funded by CREST, JST)

University of Tokyo

- 4/2013–2/2014 Takuya Machida (funded by Research Fellowships for Young Scientists (PD)
Japan Society for the Promotion of Science (JSPS))
- 4/2012–10/2012 Ryosuke Nishi (funded by Kakenhi, Japan)
- 4/2011–3/2012 Jun Nakabayashi (funded by Kakenhi, Japan)
- 4/2011–3/2012 Etsuo Segawa (funded by JST, Presto)
- 4/2011–3/2012 Shuhei Furuya (funded by Research Fellowships for Young Scientists (PD), JSPS)
- 4/2009–3/2011 Yoshimi Yoshino (funded by Kakenhi, Japan)
- 3/2009–3/2011 Takehisa Hasegawa (funded by JST, Presto)

As host researcher (at least 1 month)

State University of New York at Buffalo

- 6/2023–8/2023 Carlos Vázquez-de Jesus (undergraduate student,
University of Puerto Rico at Cayey)
- 1/2023–2/2023 Prof. Jiyoung Kang (Assistant Professor,
Pukyong National University, South Korea)
- 8/2021–4/2022 Kazuki Nakajima (PhD student, Tokyo Institute of Technology, Japan)
& 9/2022–3/2022

University of Bristol

- 5/2019–8/2019 Bruna Campos Guedes (undergraduate student,
Polytech Marseille — Aix-Marseille Université, France)
- 9/2018–3/2019 Shun Kodate (PhD student, Tohoku University, Japan)
visit funded by Graduate Program in Data Science, Tohoku University
- 3/2018–4/2018 Jorge P. Rodríguez (PhD student, University of Balearic Islands, Spain)
visit funded by Short Term Scientific Mission (STSM), COST Action: CA15109,
EU Framework Programme Horizon 2020 on
European Cooperation for Statistics of Network Data Science
- 1/2017–3/2017 Elohim Fonseca dos Reis (PhD student, University of Campinas, Brazil)
visit funded by EPSRC, UK

University of Tokyo

- 7/2013–8/2013 Yanru Chen (undergraduate student, Tsinghua University, China)
visit funded by Tsinghua University
- 6/2013–8/2013 Friederike Greb (postdoc, Georg-August-Universität Göttingen, Germany)
visit funded by Summer Program, Japan Society for the Promotion of Science
- 2/2012–3/2012 Paul Expert (postdoc, Imperial College, UK)
visit funded by Postdoctoral Fellowships for Foreign Researchers (short-term),
Japan Society for the Promotion of Science
- 5/2009–2/2010 Toshihiro Tanizawa (Associate Professor,
Kochi National College of Technology, Japan)
visit funded by KOSEN National Institute of Technology, Japan

PhD Thesis Examiner (except for students under my supervision)

8/2023	External PhD examiner, Kiefer Joe Burgess, University of Waterloo, Canada
5/2023	Internal PhD examiner, Bengier Ülgen Kılıç, State University of New York at Buffalo, USA
11/2021	Internal PhD examiner, Zhao Song, State University of New York at Buffalo, USA
5/2021	External PhD examiner, Pitambar Khanra, National Institute of Technology Durgapur, India
4/2021	External PhD examiner, Xingru Chen, Dartmouth College, USA
5/2019	External PhD examiner, Prateek Verma, Indian Institute of Science Education and Research (IISER) Kolkata, India
1/2019	External PhD examiner, Jeroen van Lidth de Jeude, IMT School of Advanced Studies, Italy also serving as member (secretary) of the Graduation Committee for Jeroen van Lidth de Jeude, Federica Parisi, and Giacomo Rapisardi, 03/2019
9/2018	External PhD examiner (president), Jorge P. Rodríguez, University of Balearic Islands, Spain
5/2018	External PhD examiner, Neil Sherborne, University of Sussex, UK
12/2017	External PhD examiner, Se-Wook Oh, University of Oxford, UK
0/2017	External PhD examiner, Balasundaram Kadirvelu, University of Reading, UK
7/2016	Internal PhD examiner, Christopher John McWilliams, University of Bristol, UK
4/2016	Internal PhD examiner, Holly Silk, University of Bristol, UK
2008–2014	PhD examiner for 20 candidates University of Tokyo, Department of Mathematical Informatics NB: By convention, no notion of internal/external examiner
2011–2014	PhD examiner for 6 candidates, University of Tokyo (other departments)

Miscellaneous

Languages: Japanese (native), English (fluent), and Spanish (fluent).

Herd member: Saving Endangered Species Int'l Playwriting Prize (winning plays announced 02/2016)

Hobbies: Piano (Beethoven, Chopin etc.), salsa (dance), jogging (half marathon: 1h43m), swimming.

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