

Naoki Masuda

Contact Information

Naoki Masuda

Email: naokimas@buffalo.edu

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

Employment

9/2021–	Professor Department of Mathematics, State University of New York at Buffalo, USA Graduate School Director since 7/2022
8/19/2019–8/2021	Associate Professor Department of Mathematics, State University of New York at Buffalo, USA
8/19/2019–	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
8/1/2019– 8/18/2019	Associate Professor Department of Engineering Mathematics, University of Bristol, UK
3/2014–7/2019	Senior Lecturer Department of Engineering Mathematics, University of Bristol, UK
9/2008–2/2014	Associate Professor Department of Mathematical Informatics, University of Tokyo
10/2006–8/2008	Lecturer Department of Mathematical Informatics, University of Tokyo
4/2004–9/2006	Special Postdoctoral Fellow Amari Research Unit, RIKEN Brain Science Institute, Japan
4/2003–3/2004	Research Fellow (PD) Japan Society for the Promotion of Science, at Yokohama National University, Japan
10/2002–3/2003	Research Fellow (PD) Japan Society for the Promotion of Science, at University of Tokyo, Japan
4/2000–9/2002	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

9/2002	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
3/2000	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
3/1998	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: 9900 (Google Scholar Citations)

h-index: 55 (Google Scholar Citations)

Grants

State University of New York at Buffalo, USA

3/2024–12/2024

College of Arts and Sciences proposal incentive program 2023–24 under Category 2, State University of New York at Buffalo

Subject: None

Amount: \$5,000

Role: PI (sole PI)

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: \$50,000

Collaborators: Ekaterina 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 (effectively co-advised with Ekaterina Noyes).

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)

Subject: 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)

An additional supplement travel grant of JPY 1,758,000 (\approx \$ 13,488) was given, 1/2023.

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)

4/2024–3/2028

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

Subject: Revealing mechanisms behind emergence of collective emotion by field sensing (translation by NM)

Amount: JPY 18,590,000 for the entire project (so far JPY 1,430,000 distributed to my group)

Role: Co-I (PI: Ryota Nomura, Waseda University, Co-I: Yutaka Shimada)

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 9,100,000 for the entire project (so far JPY 1,755,000 distributed to my group)

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

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

4/2021–3/2025

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 2,600,000 (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) [money moved to Kobe University in 4/2024]

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)

6/2013–8/2013

Japan Society for the Promotion of Science

Grant given to the host of a visiting fellow on JSPS Summer Program

Amount: JPY 100,000

Role: Host of Dr. Friederike Greb

4/2011–2/2014

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

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)

2/2012–3/2012

Japan Society for the Promotion of Science

Grant given to the host of a visiting fellow on Postdoctoral Fellowships for Foreign Researchers (short-term) program

Amount: JPY 81,000

Role: Host of Dr. Paul Expert

11/2008–3/2013

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

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

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

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)

4/2008–3/2011

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

Project title: Renormalization group approach to the analysis of coexistence dynamics on complex networks with randomness (originally in Japanese. Translation by NM)

Amount: JPY 221,000

Role: Co-I (PI: Toshihiro Tanizawa, Kochi National College of Technology)

4/2008–11/2009

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

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)

5/1/2009–2/28/2010

Grant given to the host researcher from the sender institution

Amount: JPY 150,000

Role: Host of Prof. Toshihiro Tanizawa, Kochi National College of Technology, Japan

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

4/26/2007–5/26/2007

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

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

Amount: JPY 570,000

Role: Visiting investigator (Host: Dr. Brent Doiron, Center for Neural Science, New York University)

As postdoc and PhD student in Japan

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 (PD)

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

Host researcher: Prof. Norio Konno (Yokohama National University, Japan)

Amount: JPY 1,200,000

Role: Sole recipient

4/2000–3/2003

Research Fellowships for Young Scientists, Japan Society for the Promotion of Science (DC1)

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

Host researcher: Prof. Kazuyuki Aihara (University of Tokyo, Japan)

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)

3/2016 First Prize for Creating Research (originally in Japanese. Translation by NM)

Research Grants on Brain and Creativity

administered by Neurocreative Laboratory (an NPO in Japan)

Project title: Quantifying drastic changes in brain dynamics (originally in Japanese. Translation by NM) Award prize amount: \$10,000

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

211. Lucas H. McCabe, [Naoki Masuda](#), Shannon Casillas, Nathan Danneman, Alen Alic, Royal Law. Network analysis of U.S. non-fatal opioid-involved overdose journeys, 2018-2023. Applied Network Science, in press (2024).
210. Hang-Hyun Jo, Tibebe Birhanu, [Naoki Masuda](#). Temporal scaling theory for bursty time series with clusters of arbitrarily many events. Chaos, 34, 083110 (2024).
209. Chanon Thongprayoon, [Naoki Masuda](#). Online landmark replacement for out-of-sample dimensionality reduction methods.

Proceedings of the Royal Society A, in press (2024).

208. Jnanajyoti Bhaumik, [Naoki Masuda](#).
Constant-selection evolutionary dynamics on weighted networks.
Proceedings of the Royal Society A, in press (2024).
207. Katherine Betz, Feng Fu, [Naoki Masuda](#).
Evolutionary game dynamics with environmental feedback in a network with two communities.
Bulletin of Mathematical Biology, 86, 84 (2024).
206. Pitambar Khanra, Johan Nakuci, Sarah Muldoon, Takamitsu Watanabe, [Naoki Masuda](#).
Reliability of energy landscape analysis of resting-state functional MRI data.
European Journal of Neuroscience, 60, 4265–4290 (2024).
205. Ruodan Liu, [Naoki Masuda](#).
Fixation dynamics on multilayer networks.
SIAM Journal on Applied Mathematics, in press (2024).
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, 25, 14 (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, 78, 322–331 (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, 35, 430–461 (2024).
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, Rose-
mary 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. Sum-
ner, [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 Nishi-
moto, 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, Jiayang 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.
Detecting sequences of system states in temporal networks.
Scientific Reports, 9, 795 (2019).
140. Sadamori Kojaku, Mengqiao Xu, Haoxiang Xia, [Naoki Masuda](#).
Multiscale core-periphery structure in a global liner shipping network.
Scientific Reports, 9, 404 (2019).
139. [Naoki Masuda](#), Sadamori Kojaku, Yukie Sano.
Configuration model for correlation matrices preserving the node strength.
Physical Review E, 98, 012312 (2018).
138. Sadamori Kojaku, Giulio Cimini, Guido Caldarelli, [Naoki Masuda](#).
Structural changes in the interbank market across the financial crisis from multiple core-periphery

analysis.

Journal of Network Theory in Finance, 4, 33–51 (2018).

137. Takuya Sekiguchi, Kohei Tamura, [Naoki Masuda](#).
Population changes in residential clusters in Japan.
PLOS ONE, 13, e0197144 (2018).
136. Sadamori Kojaku, [Naoki Masuda](#).
A generalised significance test for individual communities in networks.
Scientific Reports, 8, 7351 (2018).
135. Sadamori Kojaku, [Naoki Masuda](#).
Core-periphery structure requires something else in the network.
New Journal of Physics, 20, 043012 (2018).
134. Takahiro Ezaki, Michiko Sakaki, Takamitsu Watanabe, [Naoki Masuda](#).
Age-related changes in the ease of dynamical transitions in human brain activity.
Human Brain Mapping, 39, 2673–2688 (2018).
133. [Naoki Masuda](#), Michiko Sakaki, Takahiro Ezaki, Takamitsu Watanabe.
Clustering coefficients for correlation networks.
Frontiers in Neuroinformatics, 12, 7 (2018).
132. Genki Ichinose, [Naoki Masuda](#).
Zero-determinant strategies in finitely repeated games.
Journal of Theoretical Biology, 438, 61–77 (2018).
131. [Naoki Masuda](#), Luis E. C. Rocha.
A Gillespie algorithm for non-Markovian stochastic processes.
SIAM Review, 60, 95–115 (2018).
130. Takahiro Ezaki, [Naoki Masuda](#).
Reinforcement learning account of network reciprocity.
PLOS ONE, 12, e0189220 (2017).
129. Sadamori Kojaku, [Naoki Masuda](#).
Finding multiple core-periphery pairs in networks.
Physical Review E, 96, 052313 (2017).
128. Luis E. C. Rocha, [Naoki Masuda](#), Petter Holme.
Sampling of temporal networks: Methods and biases.
Physical Review E, 96, 052302 (2017).
127. Tomokatsu Onaga, James P. Gleeson, [Naoki Masuda](#).
Concurrency-induced transitions in epidemic dynamics on temporal networks.
Physical Review Letters, 119, 108301 (2017).
126. [Naoki Masuda](#), Mason A. Porter, Renaud Lambiotte.
Random walks and diffusion on networks.
Physics Reports, 716–717, 1–58 (2017).

Corrigendum to “Random walks and diffusion on networks” [Phys. Rep. 716-717 (2017) 1-58].
Physics Reports, 745, 96 (2018).

Second corrigendum to “Random walks and diffusion on networks” [Phys. Rep. 716-717 (2017) 1-58].

Physics Reports, 851, 37-39 (2020).

125. Kohei Tamura, [Naoki Masuda](#).
Effects of the distant population density on spatial patterns of demographic dynamics.
Royal Society Open Science, 4, 170391 (2017).
124. Takahiro Ezaki, Takamitsu Watanabe, Masayuki Ohzeki, [Naoki Masuda](#).
Energy landscape analysis of neuroimaging data.
Philosophical Transactions of the Royal Society A, 375, 20160287 (2017).
123. Thomas A. O’Shea-Wheller, [Naoki Masuda](#), Ana Sendova-Franks, Nigel R. Franks.
Variability in individual assessment behaviour and its implications for collective decision-making.
Proceedings of the Royal Society B: Biological Sciences, 284, 20162237 (2017).
122. Yutaka Horita, Masanori Takezawa, Keigo Inukai, Toshimasa Kita, [Naoki Masuda](#).
Reinforcement learning accounts for moody conditional cooperation behavior: experimental results.
Scientific Reports, 7, 39275 (2017).
121. Teruyoshi Kobayashi, [Naoki Masuda](#).
Fragmenting networks by targeting collective influencers at a mesoscopic level.
Scientific Reports, 6, 37778 (2016).
120. Luis E. C. Rocha, [Naoki Masuda](#).
Individual-based approach to epidemic processes on arbitrary dynamic contact networks.
Scientific Reports, 6, 31456 (2016).
119. Takahiro Ezaki, Yutaka Horita, Masanori Takezawa, [Naoki Masuda](#).
Reinforcement learning explains conditional cooperation and its moody cousin.
PLOS Computational Biology, 12, e1005034 (2016).
118. Leo Speidel, Konstantin Klemm, Víctor M. Eguíluz, [Naoki Masuda](#).
Temporal interactions facilitate endemicity in the susceptible-infected-susceptible epidemic model.
New Journal of Physics, 18, 073013 (2016).
117. Ryosuke Nishi, Taro Takaguchi, Keigo Oka, Takanori Maehara, Masashi Toyoda, Ken-ichi Kawarabayashi, [Naoki Masuda](#).
Reply trees in Twitter: data analysis and branching process models.
Social Network Analysis and Mining, 6, 26 (2016).
116. [Naoki Masuda](#).
Accelerating coordination in temporal networks by engineering the link order.
Scientific Reports, 6, 22105 (2016).
115. Yutaka Horita, Masanori Takezawa, Takuji Kinjo, Yo Nakawake, [Naoki Masuda](#).
Transient nature of cooperation by pay-it-forward reciprocity.
Scientific Reports, 6, 19471 (2016).
114. Jens Malmros, [Naoki Masuda](#), Tom Britton.
Random walks on directed networks: Inference and respondent-driven sampling.
Journal of Official Statistics, 32, 433–459 (2016).

113. Leo Speidel, Taro Takaguchi, [Naoki Masuda](#).
Community detection in directed acyclic graphs.
European Physical Journal B, 88, 203 (2015).
112. Kohei Tamura, [Naoki Masuda](#).
Win-stay lose-shift strategy in formation changes in football.
EPJ Data Science, 4, 9 (2015).
111. Nigel Franks, Jonathan Stuttard, Carolina Doran, Julian Esposito, Maximillian Master, Ana Sendova-Franks, [Naoki Masuda](#), Nicholas Britton.
How ants use quorum sensing to estimate the average quality of a fluctuating resource.
Scientific Reports, 5, 11890 (2015).
110. [Naoki Masuda](#), Thomas A. O'Shea-Wheller, Carolina Doran, Nigel R. Franks.
Computational model of collective nest selection by ants with heterogeneous acceptance thresholds.
Royal Society Open Science, 2, 140533 (2015).
109. [Naoki Masuda](#), Feng Fu.
Evolutionary models of in-group favoritism.
F1000Prime Reports, 7, 27 (2015).
108. [Naoki Masuda](#).
Opinion control in complex networks.
New Journal of Physics, 17, 033031 (2015).
107. Petter Holme, [Naoki Masuda](#).
The basic reproduction number as a predictor for epidemic outbreaks in temporal networks.
PLOS ONE, 10, e0120567 (2015).
106. Víctor M. Eguíluz, [Naoki Masuda](#), Juan Fernández-Gracia.
Bayesian decision making in human collectives with binary choices.
PLOS ONE, 10, e0121332 (2015).
105. Leo Speidel, Renaud Lambiotte, Kazuyuki Aihara, [Naoki Masuda](#).
Steady state and mean recurrence time for random walks on stochastic temporal networks.
Physical Review E, 91, 012806 (2015).
104. Yohei Nakajima, [Naoki Masuda](#).
Evolutionary dynamics in finite populations with zealots.
Journal of Mathematical Biology, 70, 465–484 (2015).
103. Takamitsu Watanabe, [Naoki Masuda](#), Fukuda Megumi, Ryota Kanai, Geraint Rees.
Energy landscape and dynamics of brain activity during human bistable perception.
Nature Communications, 5, 4765 (2014).
102. Hiroyuki Shimoji, Masato S. Abe, Kazuki Tsuji, [Naoki Masuda](#).
Global network structure of dominance hierarchy of ant workers.
Journal of the Royal Society Interface, 11, 20140599 (2014).
101. Ryosuke Nishi, [Naoki Masuda](#).
Dynamics of social balance under temporal interaction.
EPL, 107, 48003 (2014).

100. Yuni Iwamasa, Naoki Masuda.
Networks maximizing the consensus time of voter models.
Physical Review E, 90, 012816 (2014).
99. Naoki Masuda.
Voter model on the two-clique graph.
Physical Review E, 90, 012802 (2014).
98. Takamitsu Watanabe, Shigeyuki Kan, Takahiko Koike, Masaya Misaki, Seiki Konishi, Satoru Miyauchi, Yasushi Miyashita, Naoki Masuda.
Network-dependent modulation of brain activity during sleep.
NeuroImage, 98, 1–10 (2014).
97. Luis E. C. Rocha, Naoki Masuda.
Random walk centrality for temporal networks.
New Journal of Physics, 16, 063023 (2014).
96. Takamitsu Watanabe, Masanori Takezawa, Yo Nakawake, Akira Kunimatsu, Hidenori Yamasue, Mitsuhiro Nakamura, Yasushi Miyashita, Naoki Masuda.
Two distinct neural mechanisms underlying indirect reciprocity.
Proceedings of the National Academy of Sciences of the United States of America, 111, 3990–3995 (2014).
95. Naoki Masuda.
Evolution via imitation among like-minded individuals.
Journal of Theoretical Biology, 349, 100–108 (2014).
94. Koji Oishi, Manuel Cebrian, Andres Abeliuk, Naoki Masuda.
Iterated crowdsourcing dilemma game.
Scientific Reports, 4, 4100 (2014).
93. Takamitsu Watanabe, Satoshi Hirose, Hiroyuki Wada, Yoshio Imai, Toru Machida, Ichiro Shirouzu, Seiki Konishi, Yasushi Miyashita, Naoki Masuda.
Energy landscapes of resting-state brain networks.
Frontiers in Neuroinformatics, 8, 12 (2014).
92. Kodai Saito, Naoki Masuda.
Two types of well followed users in the followership networks of Twitter.
PLOS ONE, 9, e84265 (2014).
91. Shoma Tanabe, Naoki Masuda.
Complex dynamics of a nonlinear voter model with contrarian agents.
Chaos, 23, 043136 (2013).
90. Naoki Masuda, Konstantin Klemm, Víctor M. Eguíluz.
Temporal networks: slowing down diffusion by long lasting interactions.
Physical Review Letters, 111, 188701 (2013).
89. Naoki Masuda.
Voter models with contrarian agents.
Physical Review E, 88, 052803 (2013).
88. Takehisa Hasegawa, Taro Takaguchi, Naoki Masuda.
Observability transitions in correlated networks.
Physical Review E, 88, 042809 (2013).

87. Makoto Hiroi, Masamichi Ohkura, Junichi Nakai, [Naoki Masuda](#), Koichi Hashimoto, Kiichi Inoue, André Fiala, Tetsuya Tabata.
Principal component analysis of odor coding at the level of third order olfactory neurons in *Drosophila*.
Genes to Cells, 18, 1070–1081 (2013).
86. Ryosuke Nishi, [Naoki Masuda](#).
Collective opinion formation model under Bayesian updating and confirmation bias.
Physical Review E, 87, 062123 (2013).
85. Taro Takaguchi, [Naoki Masuda](#), Petter Holme.
Bursty communication patterns facilitate spreading in a threshold-based epidemic dynamics.
PLOS ONE, 8, e68629 (2013).
84. [Naoki Masuda](#), Issei Kurahashi, Hiroko Onari.
Suicide ideation of individuals in online social networks.
PLOS ONE, 8, e62262 (2013).
83. Masayoshi Ito, [Naoki Masuda](#), Kazunori Shinomiya, Keita Endo, Kei Ito.
Systematic analysis of neural projections reveals clonal composition of the *Drosophila* brain.
Current Biology, 23, 644–655 (2013).
82. [Naoki Masuda](#), Petter Holme.
Predicting and controlling infectious disease epidemics using temporal networks.
F1000Prime Reports, 5, 6 (2013).
81. Shun-ichi Amari, Hiroyasu Ando, Taro Toyozumi, [Naoki Masuda](#).
State concentration exponent as a measure of quickness in Kauffman-type networks.
Physical Review E, 87, 022814 (2013).
80. Takamitsu Watanabe, Satoshi Hirose, Hiroyuki Wada, Yoshio Imai, Toru Machida, Ichiro Shirouzu, Seiki Konishi, Yasushi Miyashita, [Naoki Masuda](#).
A pairwise maximum entropy model accurately describes resting-state human brain networks.
Nature Communications, 4, 1370 (2013).
79. Ryo Fujie, Kazuyuki Aihara, [Naoki Masuda](#).
A model of competition among more than two languages.
Journal of Statistical Physics, 151, 289–303 (2013).
78. Shoma Tanabe, Hideyuki Suzuki, [Naoki Masuda](#).
Indirect reciprocity with trinary reputations.
Journal of Theoretical Biology, 317, 338–347 (2013).

Corrigendum to “Indirect reciprocity with trinary reputations” [J. Theor. Biol. 317 (2013) 338–347].
Journal of Theoretical Biology, 328, 100–101 (2013).
77. Mitsuhiro Nakamura, [Naoki Masuda](#).
Groupwise information sharing promotes ingroup favoritism in indirect reciprocity.
BMC Evolutionary Biology, 12, 213 (2012).
76. Shun Motegi, [Naoki Masuda](#).
A network-based dynamical ranking system for competitive sports.
Scientific Reports, 2, 904 (2012).

75. Naoki Masuda.
Evolution of cooperation driven by zealots.
Scientific Reports, 2, 646 (2012).
74. Taro Takaguchi, Nobuo Sato, Kazuo Yano, Naoki Masuda.
Importance of individual events in temporal networks.
New Journal of Physics, 14, 093003 (2012).
73. Naoki Masuda, Mitsuhiro Nakamura.
Coevolution of trustful buyers and cooperative sellers in the trust game.
PLOS ONE, 7(9), e44169 (2012).
72. Naoki Masuda.
Ingroup favoritism and intergroup cooperation under indirect reciprocity based on group reputation.
Journal of Theoretical Biology, 311, 8–18 (2012).
71. Taro Ueno, Naoki Masuda, Shoen Kume, Kazuhiko Kume.
Dopamine modulates the rest period length without perturbation of its power law distribution in *Drosophila melanogaster*.
PLOS ONE, 7(2), e32007 (2012).
70. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Structure of cell networks critically determines oscillation regularity.
Journal of Theoretical Biology, 297, 61–72 (2012).
69. Shoma Tanabe, Naoki Masuda.
Evolution of cooperation facilitated by reinforcement learning with adaptive aspiration levels.
Journal of Theoretical Biology, 293, 151–160 (2012).
68. Naoki Masuda.
Clustering in large networks does not promote upstream reciprocity.
PLOS ONE, 6(10), e25190 (2011).
67. Taro Takaguchi, Naoki Masuda.
Voter model with non-Poissonian inter-event intervals.
Physical Review E, 84, 036115 (2011).
66. Takehisa Hasegawa, Naoki Masuda.
Robustness of networks against propagating attacks under vaccination strategies.
Journal of Statistical Mechanics, P09014 (2011).
65. Taro Takaguchi, Mitsuhiro Nakamura, Nobuo Sato, Kazuo Yano, Naoki Masuda.
Predictability of conversation partners.
Physical Review X, 1, 011008 (2011).
64. Mitsuhiro Nakamura, Naoki Masuda.
Indirect reciprocity under incomplete observation.
PLOS Computational Biology, 7(7), e1002113 (2011).
63. C. -K. Yun, N. Masuda, B. Kahng.
Diversity and critical behavior in prisoner's dilemma game.
Physical Review E, 83, 057102 (2011).

62. Naoki Masuda, Mitsuhiro Nakamura.
Numerical analysis of a reinforcement learning model with the dynamic aspiration level in the iterated Prisoner's Dilemma.
Journal of Theoretical Biology, 278, 55–62 (2011).
61. Takehisa Hasegawa, Norio Konno, Naoki Masuda.
Numerical study of a three-state host-parasite system on the square lattice.
Physical Review E, 83, 046102 (2011).
60. Yuri Ogiso, Kazuhide Tsuneizumi, Naoki Masuda, Makoto Sato, Tetsuya Tabata.
Robustness of the Dpp morphogen activity gradient depends on negative feedback regulation by the inhibitory Smad, Dad.
Development Growth and Differentiation, 53, 668–678 (2011).
59. Naoki Masuda, S. Redner.
Can partisan voting lead to truth?
Journal of Statistical Mechanics, L02002 (2011).
58. Naoki Masuda, Hiroshi Kori.
Dynamics-based centrality for directed networks.
Physical Review E, 82, 056107 (2010).
57. Takamitsu Watanabe, Naoki Masuda.
Enhancing the spectral gap of networks by node removal.
Physical Review E, 82, 046102 (2010).
56. Jun Ohkubo, Kazushi Yoshida, Yuichi Iino, Naoki Masuda.
Long-tail behavior in locomotion of *Caenorhabditis elegans*.
Journal of Theoretical Biology, 267, 213–222 (2010).
55. Naoki Masuda.
Effects of diffusion rates on epidemic spreads in metapopulation networks.
New Journal of Physics, 12, 093009 (2010).
54. Naoki Masuda, Yoji Kawamura, Hiroshi Kori.
Collective fluctuations in networks of noisy components.
New Journal of Physics, 12, 093007 (2010).
53. Ralf Tönjes, Naoki Masuda, Hiroshi Kori.
Synchronization transition of identical phase oscillators in a directed small-world network.
Chaos, 20, 033108 (2010).
52. Naoki Masuda, N. Gibert, S. Redner.
Heterogeneous voter models.
Physical Review E, 82, 010103(R) (2010).
51. Akio Iwagami, Naoki Masuda.
Upstream reciprocity in heterogeneous networks.
Journal of Theoretical Biology, 265, 297–305 (2010).
50. Yusuke Ide, Norio Konno, Naoki Masuda.
Statistical properties of a generalized threshold network model.
Methodology & Computing in Applied Probability, 12, 361–377 (2010).

49. Naoki Masuda.
Immunization of networks with community structure.
New Journal of Physics, 11, 123018 (2009).
48. Naoki Masuda, Yoji Kawamura, Hiroshi Kori.
Impact of hierarchical modular structure on ranking of individual nodes in directed networks.
New Journal of Physics, 11, 113002 (2009).
47. Naoki Masuda, Yoji Kawamura, Hiroshi Kori.
Analysis of relative influence of nodes in directed networks.
Physical Review E, 80, 046114 (2009).
46. Naoki Masuda, Hisashi Ohtsuki.
A theoretical analysis of temporal difference learning in the iterated Prisoner's Dilemma game.
Bulletin of Mathematical Biology, 71, 1818–1850 (2009).
45. Naoki Masuda.
Selective population rate coding: a possible computational role of gamma oscillations in selective attention.
Neural Computation, 21, 3335–3362 (2009).
44. Yuko K. Takahashi, Hiroshi Kori, Naoki Masuda.
Self-organization of feedforward structure and entrainment in excitatory neural networks with spike-timing-dependent plasticity.
Physical Review E, 79, 051904 (2009).
43. Naoki Masuda, Hisashi Ohtsuki.
Evolutionary dynamics and fixation probabilities in directed networks.
New Journal of Physics, 11, 033012 (2009).
42. Naoki Masuda.
Directionality of contact networks suppresses selection pressure in evolutionary dynamics.
Journal of Theoretical Biology, 258, 323–334 (2009).
41. N. Masuda, J. S. Kim, B. Kahng.
Priority queues with bursty arrivals of incoming tasks.
Physical Review E, 79, 036106 (2009).
40. Taro Ueno, Naoki Masuda.
Controlling nosocomial infection based on structure of hospital social networks.
Journal of Theoretical Biology, 254, 655–666 (2008).
39. Naoki Masuda.
Oscillatory dynamics in evolutionary games are suppressed by heterogeneous adaptation rates of players.
Journal of Theoretical Biology, 251, 181–189 (2008).
38. Naoki Masuda, Shun-ichi Amari.
A computational study of synaptic mechanisms of partial memory transfer in cerebellar vestibulo-ocular-reflex learning.
Journal of Computational Neuroscience, 24, 137–156 (2008).
37. Nobuaki Sugimine, Naoki Masuda, Norio Konno, Kazuyuki Aihara.
On global and local critical points of extended contact process on homogeneous trees.
Mathematical Biosciences, 213, 13–17 (2008).

36. [Naoki Masuda](#), Brent Doiron.
Gamma oscillations of spiking neural populations enhance signal discrimination.
PLOS Computational Biology, 3(11), e236, 2348–2355 (2007).
35. [Naoki Masuda](#).
Participation costs dismiss the advantage of heterogeneous networks in evolution of cooperation.
Proceedings of the Royal Society B: Biological Sciences, 274, 1815–1821 (2007).
34. [Naoki Masuda](#), Hiroshi Kori.
Formation of feedforward networks and frequency synchrony by spike-timing-dependent plasticity.
Journal of Computational Neuroscience, 22, 327–345 (2007).
33. [Naoki Masuda](#), Masato Okada, Kazuyuki Aihara.
Filtering of spatial bias and noise inputs by spatially structured neural networks.
Neural Computation, 19, 1854–1870 (2007).
32. [Naoki Masuda](#), Kazuyuki Aihara.
Dual coding hypotheses for neural information representation.
Mathematical Biosciences, 207, 312–321 (2007).
31. [Naoki Masuda](#), Hisashi Ohtsuki.
Tag-based indirect reciprocity by incomplete social information.
Proceedings of the Royal Society B: Biological Sciences, 274, 689–695 (2007).
30. Yong-Yeol Ahn, Hawoong Jeong, [Naoki Masuda](#), Jae Dong Noh.
Epidemic dynamics of two species of interacting particles on scale-free networks.
Physical Review E, 74, 066113 (2006).
29. [Naoki Masuda](#), Norio Konno.
Networks with dispersed degrees save stable coexistence of species in cyclic competition.
Physical Review E, 74, 066102 (2006).
28. Yuichi Katori, [Naoki Masuda](#), Kazuyuki Aihara.
Dynamic switching of optimal neural codes in networks with gap junctions.
Neural Networks, 19, 1463–1466 (2006).
27. [Naoki Masuda](#), Norio Konno.
Multi-state epidemic processes on complex networks.
Journal of Theoretical Biology, 243, 64–75 (2006).
26. Kazumichi Ohtsuka, Norio Konno, [Naoki Masuda](#), Kazuyuki Aihara.
Phase diagrams and correlation inequalities of a three-state stochastic epidemic model on the square lattice.
International Journal of Bifurcation and Chaos, 16, 3687–3693 (2006).
25. [Naoki Masuda](#), Norio Konno.
VIP-club phenomenon: emergence of elites and masterminds in social networks.
Social Networks, 28, 297–309 (2006).
24. [Naoki Masuda](#), Goce Jakimoski, Kazuyuki Aihara, Ljupco Kocarev.
Chaotic block ciphers: from theory to practical algorithms.
IEEE Transactions on Circuits and Systems Part I, 53, 1341–1352 (2006).

23. Naoki Masuda.
Simultaneous rate-synchrony codes in populations of spiking neurons.
Neural Computation, 18, 45–59 (2006).
22. N. Masuda, K.-I. Goh, B. Kahng.
Extremal dynamics on complex networks: Analytic solutions.
Physical Review E, 72, 066106 (2005).
21. Norio Konno, Naoki Masuda, Rahul Roy, Anish Sarkar.
Rigorous results on the threshold network model.
Journal of Physics A: Mathematical and General, 38, 6277–6291 (2005).
20. Naoki Masuda, Brent Doiron, André Longtin, Kazuyuki Aihara.
Coding of temporally varying signals in networks of spiking neurons with global delayed feedback.
Neural Computation, 17, 2139–2175 (2005).
19. Naoki Masuda, Hiroyoshi Miwa, Norio Konno.
Geographical threshold graphs with small-world and scale-free properties.
Physical Review E, 71, 036108 (2005).
18. Naoki Masuda, Hiroyoshi Miwa, Norio Konno.
Analysis of scale-free networks based on a threshold graph with intrinsic vertex weights.
Physical Review E, 70, 036124 (2004).
17. Naoki Masuda, Norio Konno.
Subcritical behavior in the alternating supercritical Domany-Kinzel dynamics.
European Physical Journal B, 40, 313–319 (2004).
16. Naoki Masuda, Norio Konno.
Return times of random walk on generalized random graphs.
Physical Review E, 69, 066113 (2004).
15. Naoki Masuda, Kazuyuki Aihara.
Dual coding and effects of global feedback in multilayered neural networks.
Neurocomputing, 58–60, 33–39 (2004).
14. Naoki Masuda, Norio Konno, Kazuyuki Aihara.
Transmission of severe acute respiratory syndrome in dynamical small-world networks.
Physical Review E, 69, 031917 (2004).
13. Naoki Masuda, Kazuyuki Aihara.
Self-organizing dual coding based on spike-time-dependent plasticity.
Neural Computation, 16, 627–663 (2004).
12. Naoki Masuda, Kazuyuki Aihara.
Global and local synchrony of coupled neurons in small-world networks.
Biological Cybernetics, 90, 302–309 (2004).
11. Naoki Masuda, Kazuyuki Aihara.
Spatial prisoner’s dilemma optimally played in small-world networks.
Physics Letters A, 313, 55–61 (2003).
10. Naoki Masuda, Kazuyuki Aihara.
Filtered interspike interval encoding by class II neurons.
Physics Letters A, 311, 485–490 (2003).

9. [Naoki Masuda](#), Kazuyuki Aihara.
Ergodicity of spike trains: when does trial averaging make sense?
Neural Computation, 15, 1341–1372 (2003).
8. [Naoki Masuda](#), Kazuyuki Aihara.
Duality of rate coding and temporal spike coding in multilayered feedforward networks.
Neural Computation, 15, 103–125 (2003).
7. [Naoki Masuda](#), Kazuyuki Aihara.
Bridging rate coding and temporal spike coding by effect of noise.
Physical Review Letters, 88, 248101 (2002).
6. [Naoki Masuda](#), Kazuyuki Aihara.
Spatiotemporal spike encoding of a continuous external signal.
Neural Computation, 14, 1599–1628 (2002).
5. [Naoki Masuda](#), Kazuyuki Aihara.
Dynamical characteristics of discretized chaotic permutations.
International Journal of Bifurcation and Chaos, 12, 2087–2103 (2002).
4. [Naoki Masuda](#), Kazuyuki Aihara.
Cryptosystems with discretized chaotic maps.
IEEE Transactions on Circuits and Systems Part I, 49, 28–40 (2002).
3. [Naoki Masuda](#), Kazuyuki Aihara.
Synchronization of pulse-coupled excitable neurons.
Physical Review E, 64, 051906 (2001).
2. Henry D. I. Abarbanel, [Naoki Masuda](#), M. I. Rabinovich, Evren Tumer.
Distribution of mutual information.
Physics Letters A, 281, 368–373 (2001).
1. [Naoki Masuda](#), Yasunori Okabe.
Time series analysis with wavelet coefficients.
Japan Journal of Industrial and Applied Mathematics, 18, 129–158 (2001).

Editorial

1. Teruyoshi Kobayashi, [Naoki Masuda](#).
Introduction to the special issue “Economics and Complex Networks”.
Japanese Economic Review, 72, 1–4 (2021).

Commentary

2. [Naoki Masuda](#).
Predicting tipping points in complex systems.
(American Physical Society) Viewpoint (Physics), 17, 110 (2024).

This is a viewpoint article for: Zijia Liu, Xiaozhu Zhang, Xiaolei Ru, Ting-Ting Gao, Jack Murdoch Moore, Gang Yan.

Early predictor for the onset of critical transitions in networked dynamical systems.
Physical Review X, 14, 031009 (2024).

1. Naoki Masuda, Francisco C. Santos.
A mathematical look at empathy.
eLife, 8, e47036 (2019).

Articles for Young Adults (Refereed)

1. Naoki Masuda, Mason A. Porter.
The waiting-time paradox.
Frontiers for Young Minds, 8, 582433 (2021).

Books

4. Naoki Masuda, Christian L. Vestergaard.
Gillespie Algorithms for Stochastic Multiagent Dynamics in Populations and Networks.
Cambridge Elements, Cambridge University Press, Cambridge, UK (2022).
3. Naoki Masuda, Renaud Lambiotte.
A Guide to Temporal Networks (second edition).
World Scientific, Singapore (2020).
(The first edition was published in 2016.)
2. Naoki Masuda, Kwang-Il Goh, Tao Jia, Junichi Yamanoi, Hiroki Sayama. (Editors)
Proceedings of NetSci-X 2020: Sixth International Winter School and Conference on Network Science.
Springer, Cham, Switzerland (2020).
1. Naoki Masuda, Petter Holme. (Editors)
Temporal Network Epidemiology.
Springer, Singapore (2017).

Book Chapters

4. Tomokatsu Onaga, James P. Gleeson, Naoki Masuda.
The effect of concurrency on epidemic threshold in time-varying networks.
In: Temporal Network Theory, Petter Holme and Jari Saramäki (Eds.), Springer, Cham (2019). pp. 253–267.
The same chapter is in pp. 259–274 of Second Edition (2023).
3. Naoki Masuda, Petter Holme.
Introduction to temporal network epidemiology.
In: Temporal Network Epidemiology, Naoki Masuda and Petter Holme (Eds.), Springer, Singapore (2017), pp. 1–16.
2. Leo Speidel, Konstantin Klemm, Víctor M. Eguíluz, Naoki Masuda.
Epidemic threshold in temporally-switching networks.
In: Temporal Network Epidemiology, Naoki Masuda and Petter Holme (Eds.), Springer, Singapore (2017), pp. 161–177.
1. Naoki Masuda, Taro Takaguchi, Nobuo Sato, Kazuo Yano.
Self-exciting point process modeling of conversation event sequences.
In: Temporal Networks, P. Holme and J. Saramäki (Eds.), Springer-Verlag, Berlin (2013), pp. 245–264.

Refereed Conference Papers

10. Masaki Ogura, Junpei Tagawa, Naoki Masuda.
Distributed agreement on activity driven networks.
2018 American Control Conference.
Wisconsin Center, Milwaukee, USA, June 27–29 (2018).
In: Proceedings, 4147–4152.
[Oral presentation]
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, 30, 1–12 (2024).
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).

Media articles featuring my work and related activity

4. [Vendor offering citations for purchase is latest bad actor in scholarly publishing.](#)
[ScienceInsider](#) (online news from Science), 2/12/2024
Quoting my comments that are distantly related to Sadamori Kojaku, Giacomo Livan, Naoki Masuda.
Detecting citation cartels in journal networks.
Scientific Reports, 11, 14524 (2021).
3. [Riconoscimento o gratitudine, le due ricompense dell’altruista.](#)
[le Scienze](#) (in Italian), 3/5/2014
Featuring Takamitsu Watanabe, Masanori Takezawa, Yo Nakawake, Akira Kunimatsu, Hidenori Yamasue, Mitsuhiro Nakamura, Yasushi Miyashita, Naoki Masuda.
Two distinct neural mechanisms underlying indirect reciprocity.
Proceedings of the National Academy of Sciences of the United States of America, 111, 3990–3995 (2014).
2. [Social networks, suicide and statistics.](#)
[I Programmer news](#), 7/6/2012
Featuring Naoki Masuda, Issei Kurahashi, Hiroko Onari.

Suicide ideation of individuals in online social networks.
PLOS ONE, 8, e62262 (2013).

1. [Spotting suicidal tendencies on social networks.](#)
[MIT Technology Review](#), 7/5/2012
Featuring the same article.

Conference/workshop Invited Presentations (without refereed proceeding papers)

46. [Naoki Masuda](#).
Recurrence view of temporal network data.
SIAM UB (University at Buffalo) Student Chapter Applied Mathematics Workshop.
Online, 4/26/2024
[Invited talk]
45. [Naoki Masuda](#).
Correlation network analysis.
Session on Network Analysis and Subsampling Methods. UPSTAT 2024 — Statistical Science at a Crossroads.
Rochester Institute of Technology, 4/13/2024
[Invited talk]
44. [Naoki Masuda](#).
Fixation dynamics on multilayer networks.
Workshop on Modeling and Applications of Evolutionary Game Theory.
Online, 12/8/2023
[Invited talk]
43. [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, 4/10 – 4/11/2023
[Invited talk]
42. [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]
41. [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]
40. [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]

39. Naoki Masuda.
Recurrence view of temporal network data: System-state dynamics, recurrence plot, and embedding.
NetSci 2022.
Online, July 25–29, 2022.
[Invited talk]
38. 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]
37. Naoki Masuda.
System-state dynamics and recurrence of temporal networks.
American Physical Society March Meeting, Chicago, IL, USA, March 14–18, 2022.
[Invited talk]
36. 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]
35. 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]
34. 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]
33. Naoki Masuda. Networks from correlation matrices: An alternative to thresholding. Threshold Networks. University of Nottingham, Nottingham, UK, July 22–24, 2019.
[Invited talk]
32. 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]
31. 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]

30. 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]
29. Naoki Masuda.
Opening Symposium of the Dutch Network Science Society.
TU Delft, Delft, Netherlands, 7 May, 2019.
[10 min pitch talk]
28. 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]
27. 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]
26. Naoki Masuda.
Random walks on networks.
Online Winter School on Spectral Methods for Complex Systems.
Webinar, January 21–30 (2019).
[Video lecture presentation]
25. 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]
24. Naoki Masuda.
Network epidemiology.
Summer Boot Camp of Infectious Disease Modeling, 2018.
The Institute of Statistical Mathematics, Tokyo, Japan, August 3 (2018).
[Invited lecture]
23. 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]
22. Naoki Masuda.
Network epidemiology.
Summer Boot Camp of Infectious Disease Modeling, 2017.
The Institute of Statistical Mathematics, Tokyo, Japan, August 3 (2017).
[Invited lecture]

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)

Peking University, Beijing, China, 8/13/2024
 University of Oxford, UK, 5/23/2024
 Niagara University, Niagara, NY, USA, 3/27/2024
 Santa Fe Institute, NM, USA, 2/19/2024
 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)

128. Neil G. MacLaren, Baruch Barzel, Naoki Masuda.
Approximating dynamics on networks: Hub nodes make poor sentinels.
NetSci 2024, Quebec City, Canada, 6/16/2024–6/21/2024.
127. Sarbendu Rakshit, Naoki Masuda.
Dimensional reduction for hypergraph dynamical systems.
NetSci 2024, Quebec City, Canada, 6/16/2024–6/21/2024.
126. Hiroki Sayama, Naoki Masuda.
Deriving dynamical model equations from temporal network data using a graph rewriting framework.
NetSci 2024, Quebec City, Canada, 6/16/2024–6/21/2024.
125. Kashin Sugishita, Naoki Masuda.
Social network analysis of Japanese manga.
NetSci 2024, Quebec City, Canada, 6/16/2024–6/21/2024.
124. MacLaren, Kundu, Naoki Masuda.
Early warning signals for dynamics on networks.
SIAM Conference on the Life Sciences.
Portland, OR, 6/10/2024–6/13/2024
123. Saiful Islam, Naoki Masuda.
Detection of interpretable communities in multilayer biological networks using a penalized sparse factor model.
Session on Network Analysis and Subsampling Methods. UPSTAT 2024 — Statistical Science at a Crossroads.
Rochester Institute of Technology, 4/13/2024
122. Naoki Masuda.
Early warning signals for dynamics on networks.
Special session on “Complex Systems in the Life Sciences” at the American Mathematical Society (AMS) 2024 Spring Eastern Sectional Meeting.
Howard University, Washington DC, April 6–7, 2024.
121. Katherine Betz, Feng Fu, Naoki Masuda.
Group-structured evolutionary game dynamics with environmental feedback.
NERCCS 2024: Seventh Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 20–22, 2024.
120. Si Thu Aung, Mintao Liu, Uttara Tipnis, Kauser Abbas, Joaquín Goñi, Naoki Masuda.
Evaluating trajectories derived from dynamic functional connectivity across fMRI conditions.
NERCCS 2024: Seventh Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 20–22, 2024.
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. Hang-Hyun Jo, Takayuki Hiraoka, [Naoki Masuda](#), Aming Li. 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
69. Jun Miyata, Akihiko Sasamoto, Takahiro Ezaki, [Naoki Masuda](#), Yasuo Mori, Masanori Isobe, Toshihiko Aso, Toshiya Murai, Hidehiko Takahashi. Is jumping to conclusions bias associated with frequent “jumping” to salience-related functional brain states?
2019 Congress of the Schizophrenia International Research Society, Orlando, Florida, US, April 10–14, 2019.
68. Elohim Fonseca dos Reis, Mark Viney, [Naoki Masuda](#). Immune state networks of wild and laboratory mice.
10th International Conference on Complex Networks (COMPLNET’19).
Tarragona, Spain, March 18–21, 2019.

67. Naoki Masuda.
Energy landscape analysis of multivariate time series data.
New Trends in Statistical Physics.
Lucca, Italy, March 15 (2019).
66. Sadamori Kojaku, Mengqiao Xu, Haoxiang Xia, Naoki Masuda.
Multiscale core-periphery structure in a global liner shipping network.
The 7th International Conference on Complex Networks and Their Applications.
University of Cambridge, Cambridge, UK, December 11–13 (2018).
65. Takamitsu Watanabe, Geraint E. Rees, Naoki Masuda.
Neural retainability in autism.
Society for Neuroscience 2018.
San Diego, CA, November 3–7 (2018).
64. Naoki Masuda.
Energy landscape modelling of network dynamics.
GW4 Biomed MRC DTP, Interdisciplinary Advanced Training Workshop, Computational Modelling.
University of Bristol, Bristol, 10/17/2018.
63. Takahiro Ezaki, Michiko Sakaki, Takamitsu Watanabe, Naoki Masuda.
Energy landscape analysis of age-related changes in human brain activity.
Conference on Complex Systems (CCS 2018).
Thessaloniki, Greece, September 23–28 (2018).
62. Genki Ichinose, Naoki Masuda.
Zero-determinant strategies in repeated prisoner's dilemma games.
ALIFE.
Tokyo, Japan, July 23–27 (2018).
61. Tomokatsu Onaga, James P. Gleeson, Naoki Masuda.
Concurrency-induced transitions in epidemic processes on temporal networks.
NetSci 2018.
Paris, June 11–15 (2018).
60. Naoki Masuda.
Reinforcement learning explains conditional cooperation and its moody cousin in games on networks.
Sattelle meeting: GAMENET: Games on Networks, NetSci 2018.
Paris, June 11–15 (2018).
59. Naoki Masuda.
Detecting sequences of system states in temporal networks.
Symposium on Networks, Time and Causality.
ETH, Zurich, Switzerland, April 13 (2018).
58. Anne-Lene Sax, Liz Coulthard, Naoki Masuda.
Epidemic dynamics of disease progression in dementia – A numerical study.
Brain Networks and Neurological Disorders: from Theory to Clinic.
University of Exeter, Exeter, UK, April 10 (2018).
57. Naoki Masuda, Michiko Sakaki, Takahiro Ezaki, Takamitsu Watanabe.
Clustering coefficients for correlation matrices and their application to neuroimaging data.

- NetSci-X.
Hangzhou, China, Jan 5–8 (2018).
56. Sadamori Kojaku, [Naoki Masuda](#).
Core-periphery structure in degree-heterogeneous networks.
NetSci-X.
Hangzhou, China, Jan 5–8 (2018).
 55. [Naoki Masuda](#).
How do people sense population density to make migration decisions?
Maths and the City Workshop.
University of Bristol, Bristol, UK, January 19 (2017).
 54. Sadamori Kojaku, [Naoki Masuda](#).
Finding multiple core/periphery structure with random walks.
The 5th International Workshop on Complex Networks and Their Applications.
Milan, Italy, November 30 – December 2 (2016).
 53. Kohei Tamura, [Naoki Masuda](#).
Effects of spatial interaction on migration flows.
Asia-Pacific Econophysics Conference 2016.
University of Tokyo, Tokyo, August 24–26 (2016).
 52. Teruyoshi Kobayashi, [Naoki Masuda](#).
A community-based collective influence algorithm for immunizing networks.
Asia-Pacific Econophysics Conference 2016.
University of Tokyo, Tokyo, August 24–26 (2016).
 51. [Naoki Masuda](#), Luis E. C. Rocha.
Exact simulation of interacting non-Markovian renewal processes using the Laplace transform.
NetSci 2016.
Seoul Korea, May 30 – June 3 (2016).
 50. [Naoki Masuda](#).
Immunizing networks by targeting collective influencers at a community level.
Satellite workshop: When complex networks meet complex data: Higher-order models in network science. NetSci 2016.
Seoul, Korea, May 30 – June 3 (2016).
 49. [Naoki Masuda](#).
Ranking professional tennis players using a temporal network centrality measure.
Satellite workshop: Competition networks and centrality, NetSci 2016.
Seoul, Korea, May 30 – June 3 (2016).
 48. [Naoki Masuda](#).
Reinforcement learning explains conditional cooperation and its moody cousin.
GW4 Game Theory Workshop: Incentives for Conflict and Cooperation.
University of Bristol, Bristol, UK, May 9–10 (2016).
 47. [Naoki Masuda](#).
Individual-based approach to the susceptible-infected-recovered epidemic processes on arbitrary dynamic networks.
Dynamical Networks and Network Dynamics.
International Centre for Mathematical Sciences, Edinburgh, UK. January 18–22 (2016).

46. Luis E. C. Rocha, [Naoki Masuda](#).
Individual-based approximation to the susceptible-infected-recovered model on temporal networks.
NetSci-X 2016.
Wroclaw, Poland, January 11–13 (2016).
45. [Naoki Masuda](#), Konstantin Klemm, Víctor M. Eguíluz.
Laplacian dynamics on temporally switching networks.
IEEE International Meeting on Analysis and Applications of Nonsmooth Systems (AANS2014).
Como, Italy, September 10–12 (2014).
44. Hiroyuki Shimoji, Masato S. Abe, Kazuki Tsuji, [Naoki Masuda](#).
Dominance hierarchy networks of ant workers.
The Joint Annual Meeting of the Japanese Society for Mathematical Biology and the Society for Mathematical Biology.
Osaka, Japan, July 28 – August 1 (2014).
43. [Naoki Masuda](#).
Neural underpinning of cooperation under indirect reciprocity.
Making of Humanities: Biological Roots of Mathematics and Cooperation.
Hokkaido University, Sapporo, Japan, July 28 (2014).
42. [Naoki Masuda](#).
Analysis of diffusive processes on temporal networks.
The 3rd International Symposium on Innovative Mathematical Modelling.
University of Tokyo, Tokyo, Japan, November 12–15 (2013).
41. [Naoki Masuda](#).
Indirect reciprocity and ingroup favoritism: mathematical models.
International Workshop on Social Computing 2013 – Perspectives in Socio-Cultural Complexity.
Graduate School's Seoul Office, Seoul, Korea, July 27 (2013).
40. [Naoki Masuda](#).
Social spike trains: where computational neuroscience and computational social science can meet.
Modeling Neural Activity: Statistics, Dynamical Systems, and Networks.
Lihue, Hawaii, June 26–28 (2013).
39. [Naoki Masuda](#).
Suicide ideation in online social networks.
Workshop: NetSciEd2. NetSci2013.
Danish Technical University, Lyngby, Denmark, June 3–7 (2013).
38. Mitsuhiro Nakamura, [Naoki Masuda](#).
Sharing information in groups yields ingroup favoritism in indirect reciprocity.
Modelling Biological Evolution 2013: Recent Progress, Current Challenges and Future Directions.
University of Leicester, UK, May 1–3 (2013).
37. Hiroshi Kori, Yoji Kawamura, [Naoki Masuda](#).
Network structure dependence of collective enhancement of temporal precision in coupled noisy oscillators.
The First Annual Winter q-bio Meeting.
Waikiki, Hawaii, February 18–21 (2013).
36. Hiroshi Kori, Yoji Kawamura, [Naoki Masuda](#).
Dependence of oscillation regularity on network structure in coupled noisy oscillators.

- European Conference on Complex Systems (ECCS'12).
Brussel, Belgium, September 3–7 (2012).
35. Taro Takaguchi, Nobuo Sato, Kazuo Yano, Naoki Masuda.
A centrality measure for interaction events in temporal networks.
European Conference on Complex Systems (ECCS'12).
Brussel, Belgium, September 3–7 (2012).
 34. Taro Takaguchi, Naoki Masuda, Petter Holme.
Effect of bursty communication patterns on contagion in a threshold-based epidemic dynamics.
European Conference on Complex Systems (ECCS'12). Satellite meeting: Data-driven modeling of contagion processes.
Brussel, Belgium, September 3–7 (2012).
 33. Taro Takaguchi, Nobuo Sato, Kazuo Yano, Naoki Masuda.
Detecting important interaction events in temporal networks.
NetSci 2012.
Northwestern University, Evanston, Illinois, USA, June 20–22 (2012).
 32. Shoma Tanabe, Hideyuki Suzuki, Naoki Masuda.
Indirect reciprocity with three reputation values.
The 2nd International Symposium on Innovative Mathematical Modelling.
University of Tokyo, Tokyo, Japan, May 14–19 (2012).
 31. Ryo Fujie, Kazuyuki Aihara, Naoki Masuda.
Conditions for stable coexistence of multiple species in consensus dynamics.
The 2nd International Symposium on Innovative Mathematical Modelling.
University of Tokyo, Tokyo, Japan, May 14–19 (2012).
 30. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Network structure dependence of oscillation regularity in coupled noisy oscillators.
Engineering of Chemical Complexity.
Berlin, Germany, July 4–8 (2011).
 29. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Design principle of precise neural clocks.
The 3rd International Conference on Cognitive Neurodynamics (ICCN 2011).
Hilton Niseko Village, Hokkaido, Japan, June 9–13 (2011).
 28. Takamitsu Watanabe, Naoki Masuda.
Sequential node removal to increase the spectral gap of networks.
NetSci 2011.
Budapest, Hungary, June 8–10 (2011).
 27. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Collective enhancement of temporal precision in networks of noisy oscillators.
SIAM Conference on Applications of Dynamical Systems.
Snowbird, Utah, USA, May 22–26 (2011).
 26. Naoki Masuda, Yoji Kawamura, Hiroshi Kori.
Collective phase diffusion in networks of noisy oscillators.
SIAM Conference on Applications of Dynamical Systems. Workshop: Linking Neuronal Network Architecture and Collective Dynamics.
Snowbird, Utah, USA, May 22–26 (2011).

25. Naoki Masuda.
Laplacian-based centrality in directed networks.
Applications of Network Theory: From Mechanisms to Large-scale Structure.
Nordita, Stockholm, Sweden, April 18 (2011).
24. Hiroshi Kori, Yoji Kawamura, T. Okano, Naoki Masuda.
Collective phase diffusion and temporal precision in networks of noisy oscillators.
Dynamics Days Europe.
Bristol, UK, September 6–10 (2010).
23. Naoki Masuda.
Threshold networks with random weights and their extension to spatial networks.
The 34th Conference on Stochastic Processes and their Applications. Invited special session “Spatial Random Networks” organized by Remco van der Hofstad.
Osaka, September 6–10 (2010).
22. Hiroshi Kori, Yoji Kawamura, Naoki Masuda.
Theory of collective enhancement of temporal precision in oscillator networks.
Biosignal 2010.
Berlin, Germany, July 14–16 (2010).
21. Takehisa Hasegawa, Naoki Masuda.
Information cascades with aging of nodes in networks.
The 9th Asia-Pacific Complex Systems Conference (Complex’09).
Tokyo, Japan, November 4–7 (2009).
20. Ralf Toenjes, Hiroshi Kori, Naoki Masuda.
Synchronization transition in sparse unidirectional networks of identical oscillators.
Frontiers in Network Science Advances and Applications.
Berlin, Germany, September 28–30 (2009).
19. Jin Seop Kim, Naoki Masuda, Byungnam Kahng.
A priority queue model of human dynamics with bursty input tasks.
First International Conference on Complex Sciences: Theory and Applications (Complex’2009).
Shanghai, China, February 23–25 (2009).
In: Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, 5, 2402–2410 (2009).
18. Naoki Masuda, Hisashi Ohtsuki.
Evolutionary dynamics and fixation probabilities on directed and weighted networks.
International Conference on Complex Networks: The Past 10 Years and Future.
Seoul National University, Seoul, Korea, December 19–22 (2008).
17. Naoki Masuda.
Dual coding by spiking neural networks.
NIPS workshop: Statistical analysis and modeling of response dependencies in neural populations, coordinated by A. Onken, K. Obermayer, V. Dragoi, S. Grunewalder, D. Berger.
Whistler, Canada, December 12–13 (2008).
16. Naoki Masuda, Hiroshi Kori.
Emergence of feedforward networks and entrainment in oscillator networks via a biological synaptic plasticity rule.
SigmaPhi – International Conference in Statistical Physics.
Chania, Greece, July 14–18 (2008).

15. Naoki Masuda, Taro Ueno.
Controls of nosocomial infection based on observed social networks of a community hospital.
NetSCI2008.
Norwich, UK, June 23–27 (2008).
14. S. Kondo, Naoki Masuda, H. Tanaka, Yuki Yasuda.
Network analysis of WWW with a website categorization database.
Fourth Joint Japan-North America Mathematical Sociology Conference.
Redondo Beach, USA, May 29 – June 1 (2008).
13. Naoki Masuda.
Evolutionary games with participation costs on networks.
NetSci: International Workshop and Conference on Network Science.
New York, NY USA, May 20–25 (2007).
12. Naoki Masuda, Norio Konno.
Cyclic competitive dynamics on networks.
Japanese-Korean Joint Meeting for Mathematical Biology.
Fukuoka, Japan, September 16–18 (2006).
11. Naoki Masuda, Norio Konno.
Rock-scissors-paper game on complex networks.
NetSci: International Workshop and Conference on Network Science.
Indiana University, Bloomington, Indiana, USA, May 22–25 (2006).
10. Yuichi Katori, Naoki Masuda, Kazuyuki Aihara.
Dynamic switching of neural coding schemes in a network with gap junctions.
Artificial life and robotics 2006 (AROB).
Beppu, Japan, January 23–25 (2006).
9. Naoki Masuda, Norio Konno.
Properties of complex networks generated with vertex fitness and homophily.
NEXT - Sigma Phi, News, Expectations and Trends in Statistical Physics.
Kolymbari, Greece, August 13–18 (2005).
8. Hiroyoshi Miwa, Naoki Masuda, Norio Konno.
Scale-free networks and network mining problems.
IFORS Triennial.
Honolulu, Hawaii, USA, July 11–15 (2005).
7. Naoki Masuda, Hiroyoshi Miwa, Norio Konno.
On a nongrowing small-world and scale-free network model with geographical consideration.
Complexity and Nonextensivity-New Trends in Statistical Mechanics.
Kyoto University, Kyoto, Japan, March 14–18 (2005).
6. Naoki Masuda, Kazuyuki Aihara.
Coexistence of firing rate code and synchronous code in neural populations with synaptic learning.
International Symposium on Complexity Modelling and its Applications.
University of Tokyo, Tokyo, Japan, December 6–8 (2004).
5. Naoki Masuda, Kazuyuki Aihara. Band-pass filtering properties of interspike interval encoding with Morris-Lecar neurons.
Brazilian Symposium on Artificial Neural Networks (SBRN2004).
Sao Luis, Brazil, September 28 – October 1 (2004).

4. Naoki Masuda, Norio Konno, Kazuyuki Aihara.
A model of SARS transmission in dynamical small-world networks.
International Symposium on Dynamical Systems Theory and its Applications to Biology and Environmental Sciences.
Hamamatsu, Japan, March 14–17 (2004).
In: Proceedings p.91.
3. Naoki Masuda.
When can trial averaging of spike trains substitute their population averaging?
NBNI2003.
KAIST, Daejeon, Korea, November 21–22 (2003).
2. Kazuyuki Aihara, Naoki Masuda.
Spatio-temporal dynamics and duality of rate coding and temporal coding in a neural network model.
BIOCOMP2002.
Vietri Sul Mare, Italy, June 3–9 (2002).
In: Proceedings p.13.
1. Naoki Masuda, Kazuyuki Aihara.
Spatio-temporal spike encoding of external signals by downstream Morris-Lecar neurons.
BIOCOMP2002.
Vietri Sul Mare, Italy, June 3–9 (2002).
In: Proceedings pp. 119–120.

Poster Presentations (without refereed proceeding papers)

88. Harrison Hartle, Naoki Masuda.
Autocorrelation properties of temporal networks governed by dynamic node-variables.
NetSci 2024, Quebec City, Canada, 6/16/2024–6/21/2024.
87. Saiful Islam, Alber Aqil, Ibrahim Numanagić, Omer Gokcumen, Naoki Masuda.
Exploring genomic evolution through network analysis of duplications across multiple species.
NetSci 2024, Quebec City, Canada, 6/16/2024–6/21/2024.
86. Saiful Islam, Alber Aqil, Ibrahim Numanagić, Omer Gokcumen, Naoki Masuda.
Toward understanding genomic segmental duplications by network analysis across multiple species.
NERCCS 2024: Seventh Northeast Regional Conference on Complex Systems
Clarkson University, Potsdam, NY, March 20–22, 2024.
85. Neil G. MacLaren, Baruch Barzel, Naoki Masuda.
Approximating nonlinear dynamics on networks by sentinel nodes.
International Symposium on Nonlinear Science and Medicine (ISNSM2024).
University of Tokyo, Tokyo, Japan, March 15, 2024.
84. Si Thu Aung, Takamitsu Watanabe, Pitambar Khanra, Naoki Masuda.
Dynamic functional connectivity in patients with major depression.
UB (University at Buffalo) Health AI Symposium.
State University of New York at Buffalo, Buffalo, NY, USA, 2/27/2024.
83. Jiyoung Kang, Naoki Masuda.
Quantifying concurrency of edges in temporal networks.
2023 Korean Physics Society Fall Meeting.
Changwon Exhibition Convention Center, Changwon, South Korea, October 24–27, 2023.

82. Jnanajyoti Bhaumik, [Naoki Masuda](#).
Fixation dynamics for switching networks.
Society for Mathematical Biology Annual Meeting 2023.
Ohio State University, Columbus, OH, July 16–21, 2023.
81. Kazuki Nakajima, Ruodan Liu, Kazuyuki Shudo, [Naoki Masuda](#).
Quantitative analysis of gender imbalance in East Asian academia.
ICSSI 2023: International Conference on Science of Science and Innovation.
Northwestern University, Evanston, IL, June 26–28, 2023.
80. Jnanajyoti Bhaumik, [Naoki Masuda](#).
Fixation probability of switching temporal networks.
NERCCS 2023: Sixth Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 22–24, 2023.
79. Madison Russell, Marie Saitou, Omer Gokcumen, [Naoki Masuda](#).
Co-expression networks across different organs reveal physically clustered gene communities.
NERCCS 2023: Sixth Northeast Regional Conference on Complex Systems.
Clarkson University, Potsdam, NY, March 22–24, 2023.
78. Pitambar Khanra, [Naoki Masuda](#), Takamitsu Watanabe.
Reliability of energy landscape analysis of resting-state functional MRI data.
Conference on Complex Systems.
Palma de Mallorca, Spain, October 17–21, 2022.
77. Madison Russell, Marie Saitou, [Naoki Masuda](#).
Communities in gene co-expression networks across different organs.
NetSci 2022.
Online, July 25–29, 2022.
76. Maisha Islam Sejunti, [Naoki Masuda](#), Dane Taylor.
Floquet theory for spreading dynamics over periodically switching networks.
NetSci 2022.
Online, July 25–29, 2022.
75. Prosenjit Kundu, Hiroshi Kori, [Naoki Masuda](#).
Validity of a one-dimensional reduction of dynamical systems on networks.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
[Honorable Mention of the Best Poster Award]
74. Yanyan Li, Ziliang Wang, Marie Saitou, [Naoki Masuda](#).
Finding genes with outstanding co-expression patterns among organs.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
73. Lingqi Meng, [Naoki Masuda](#).
Perturbation theory for graph surgery: A case of theory of cooperation.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
72. Madison Russell, Marie Saitou, [Naoki Masuda](#).
Communities in gene co-expression networks across different organs.

NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.

71. Chanon Thongprayoon, Lorenzo Livi, [Naoki Masuda](#).
Trajectories of temporal social contact networks.
NERCCS 2022: Fifth Northeast Regional Conference on Complex Systems.
Buffalo, March 30 – April 1, 2022.
70. Noha Abdel-Mottaleb, Kashin Sugishita, [Naoki Masuda](#), Qiong Zhang.
Bio-inspired water distribution network design.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
69. Rupam Acharyya, Penghang Liu, A. Erdem Sariyüce, [Naoki Masuda](#).
Detecting fraudulent users in online marketplaces using temporal motifs.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
68. Ruodan Liu, Masaki Ogura, Elohim Fonseca Dos Reis, [Naoki Masuda](#).
Modeling epidemic spreading in Markovian temporal networks with different degrees of concurrency.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
67. Penghang Liu, Tomomi Kito, [Naoki Masuda](#), A. Erdem Sariyüce.
Temporal motifs in patent opposition and collaboration networks.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021. [Best Poster Award]
66. Kazuki Nakajima, Kazuyuki Shudo, [Naoki Masuda](#).
] Configuration models for hypergraphs preserving local quantities of nodes and hyperedges.
NERCCS 2021: Fourth Northeast Regional Conference on Complex Systems.
Online, March 31 – April 2, 2021.
65. Kashin Sugishita, Noha Abdel-Mottaleb, Qiong Zhang, [Naoki Masuda](#).
A growth model for water distribution networks with loops.
COMPLEX20 (Conference on Complex Systems 2020).
Online, December 4–11, 2020.
64. Xiuxiu Zhan, Ziyu Li, [Naoki Masuda](#), Petter Holme and Huijuan Wang.
Spreading-based network embedding for link prediction in static and temporal networks.
NetSci 2020.
Rome, Italy (held online due to COVID-19), September 17–25, 2020.
63. Kashin Sugishita, Mason A. Porter, Mariano Beguerisse-Díaz, [Naoki Masuda](#).
Opinion dynamics in tie-decay temporal networks.
Third Northeast Regional Conference on Complex Systems.
Online, April 1–3, 2020.
62. Lingqi Meng, [Naoki Masuda](#).
Stationary distribution and spectral gap of the node2vec random walks.
Third Northeast Regional Conference on Complex Systems.
Online, April 1–3, 2020.

61. Elohim Fonseca dos Reis, Aming Li, [Naoki Masuda](#).
Human dynamics as a mixture of Poisson processes.
NetSci-X 2020.
Tokyo, Japan, January 20–23, 2020.
60. Lingqi Meng, [Naoki Masuda](#).
Second-order random walks in a toy network.
International Conference on AI and Data Science: Mathematics and Applications.
Suwon, Korea, November 4–5, 2019.
59. Dominik Krzemiński, [Naoki Masuda](#), Khalid Hamandi, Krish Singh, Jiaxiang Zhang.
MEG energy landscape abnormalities in juvenile myoclonic epilepsy.
2019 Conference on Cognitive Computational Neuroscience.
Berlin, Germany, September 13–16, 2019.
58. Elohim Fonseca dos Reis, Mark Viney, [Naoki Masuda](#).
Network structure of wild and laboratory mouse immune systems. Threshold Networks. University of Nottingham, Nottingham, UK, July 22–24, 2019.
57. Sadamori Kojaku, [Naoki Masuda](#).
Constructing networks from correlation matrices: An application to economical data.
Threshold Networks. University of Nottingham, Nottingham, UK, July 22–24, 2019.
56. Mengqiao Xu, Qian Pan, Haoxiang Xia, [Naoki Masuda](#).
Estimating international trade statuses of individual countries from a global liner shipping network.
NetSci 2019, University of Vermont, Burlington, VA, USA, May 27–31, 2019
55. Shun Kodate, Ryusuke Chiba, Shunya Kimura, [Naoki Masuda](#).
Detecting problematic transactions in a consumer-to-consumer e-commerce network.
NetSci 2019, University of Vermont, Burlington, VA, USA, May 27–31, 2019
54. Sadamori Kojaku, [Naoki Masuda](#).
A generalised significance test for individual communities in networks.
NetSci 2018.
Paris, June 11–15 (2018).
53. Koji Oishi, Takamitsu Watanabe, [Naoki Masuda](#).
Overlapping communities in correlation matrices.
NetSci 2018.
Paris, June 11–15 (2018).
52. Christelle van Antwerpen, Giovanni DeMarco, Angela Davies-Smith, Rosemary Jones, [Naoki Masuda](#), N. Jade Thai.
Neural correlates of fatigue: a voxel-based morphometric MRI study in multiple sclerosis.
Organization of Human Brain Mapping Annual Meeting.
Singapore, June 17–21 (2018).
51. Christelle van Antwerpen, N. Jade Thai, Simon Godwin, Angela Davies-Smith, Rosemary Jones, [Naoki Masuda](#).
Impact of fatigue on functional connectivity in multiple sclerosis.
Organization of Human Brain Mapping Annual Meeting.
Singapore, June 17–21 (2018).

50. Simon Godwin, Jade Thai, Christelle van Antwerpen, Lucia Marucci, Angela Davies-Smith, Rosemary Jones, [Naoki Masuda](#).
Resting-state large scale functional networks of patients with multiple sclerosis.
Organization of Human Brain Mapping Annual Meeting.
Singapore, June 17–21 (2018).
49. Sadamori Kojaku, [Naoki Masuda](#).
Multi-scale organisation of core-periphery structure in networks.
1st Laten American Conference on Complex Networks.
Puebla, Mexico, September 25–29 (2017).
48. Masanori Takezawa, Yutaka Horita, Takahiro Ezaki, [Naoki Masuda](#).
What governs behavior in a public goods game: social preferences or reinforcement learning?
CES 2017 (Inaugural Meeting of the Cultural Evolution Society).
Jena, Germany, September 13–15 (2017).
47. Sadamori Kojaku, [Naoki Masuda](#).
Core-periphery structure of networks: Consideration for random heterogeneous networks.
NetSci 2017.
Indianapolis, Indiana, USA, June 19–23 (2017).
46. Takahiro Ezaki, Michiko Sakaki, Takamitsu Watanabe, [Naoki Masuda](#).
Energy landscape analysis of age-related changes in the human brain.
Crossroads in Complex Systems. IFISC, Mallorca, Spain June 5–8 (2017).
45. [Naoki Masuda](#), Takamitsu Watanabe.
Speed of brain dynamics: comparison between autistic and healthy individuals using fMRI data.
Computational Neurology 2017.
Newcastle University, Newcastle, UK, February 20–21 (2017).
44. Sadamori Kojaku, [Naoki Masuda](#).
An extension of modularity for finding multiple core/periphery structure in networks.
NetSci-X 2017.
Tel Aviv, Israel, January 15–18 (2017).
[2017 NetSci-X Best Contribution on Financial Networks Award, sponsored by The Journal of Network Theory in Finance]
43. Takahiro Ezaki, Yutaka Horita, Masanori Takezawa, [Naoki Masuda](#).
Reinforcement learning accounts for conditional cooperation behavior in social dilemma games.
Conference on Complex Systems.
Amsterdam, Netherland, September 19–22 (2016).
42. Takahiro Ezaki, Yutaka Horita, Masanori Takezawa, [Naoki Masuda](#).
Reinforcement learning explains conditional cooperation in repeated social dilemma games. Asia-Pacific Econophysics Conference 2016.
University of Tokyo, Tokyo, August 24–26 (2016).
[Best Poster Award]
41. Yutaka Horita, Masanori Takezawa, Takuji Kinjo, Yo Nakawake, [Naoki Masuda](#).
Transient nature of pay-it-forward reciprocity.
The 31st International Congress of Psychology.
PACIFICO Yokohama, Yokohama, Japan, July 24–29 (2016).

40. Yutaka Horita, Masanori Takezawa, Takuji Kinjo, Yo Nakawake, [Naoki Masuda](#).
Contagion of cooperation in a donation game played on chain networks.
NetSci 2016.
Seoul, Korea, May 30 – June 3 (2016).
39. Masato S. Abe, [Naoki Masuda](#).
Modeling dominance networks with intrinsic node weights.
Conference on Complex Systems.
Tempe, Arizona, USA, September 28 – October 2 (2015).
38. Masato S. Abe, [Naoki Masuda](#).
Analysis of dominance network models with intrinsic node weights.
2015 Joint Meeting of JSMB and CJK Colloquium on Mathematical Biology, Doshisha University,
Kyoto, Japan, August 26–29 (2015).
37. Leo Speidel, Taro Takaguchi, Kazuyuki Aihara, [Naoki Masuda](#).
Community detection in directed acyclic graphs.
NetSci 2015.
Zaragoza, Spain, June 1–5 (2015).
36. Takamitsu Watanabe, [Naoki Masuda](#), Fukuda Megumi, Ryota Kanai, Geraint Rees. Energy landscape of human brain activity during bistable perception.
Society for Neuroscience.
Washington DC, November 15–19 (2014).
35. Leo Speidel, Renaud Lambiotte, Kazuyuki Aihara, [Naoki Masuda](#).
Active and passive random walks on stochastic temporal networks.
Social Modeling and Simulations + Econophysics Colloquium 2014.
Nichii Gakkan, Kobe, Japan, November 4–6 (2014).
34. Takehisa Hasegawa, Taro Takaguchi, [Naoki Masuda](#).
Network observability transitions under degree correlation.
NetSci 2014.
Berkeley, CA, USA, June 2–6 (2014).
33. Ryosuke Nishi, [Naoki Masuda](#).
Dynamics of social balance on the temporal complete graph.
NetSci 2014.
Berkeley, CA, USA, June 2–6 (2014).
32. Leo Speidel, Renaud Lambiotte, Kazuyuki Aihara, [Naoki Masuda](#).
Passive random walks on stochastic temporal networks.
NetSci 2014.
Berkeley, CA, USA, June 2–6 (2014).
31. Takehisa Hasegawa, Taro Takaguchi, [Naoki Masuda](#).
Impact of correlated structure on network observability transition.
The 3rd International Symposium on Innovative Mathematical Modelling.
University of Tokyo, Tokyo, November 12–15 (2013).
30. Ryosuke Nishi, [Naoki Masuda](#).
Imitation of immunization behavior on scale-free networks under different update rules.
International Workshop on Phase Transition, Critical Phenomena and Related Topics in Complex

Networks.

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

29. Taro Takaguchi, Nobuo Sato, Kazuo Yano, [Naoki Masuda](#).
Inferring directed static networks of influence from undirected temporal networks.
The 37th Annual International Computer Software & Applications Conference (COMPSAC).
Kyoto, Japan, July 22–26 (2013).
28. Ryosuke Nishi, [Naoki Masuda](#).
Bayesian collective opinion formation under confirmation bias.
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, July 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)
------	--

Organization of Conferences and Workshops

Reviewer

Eighth Northeast Regional Conference on Complex Systems
Binghamton, NY, USA, 4/9/2025–4/11/2025

Program Committee Member and judge of “Best Presentation by an Early Career Scientist (ECR)” award

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

Copenhagen, 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, 2019 (Head of the Committee), 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.

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 100 journals including Nature Communications, Nature Physics, Physical Review Letters, Physical Review X, Proceedings of the National Academy of Sciences of the United States of America,

Science Advances, and SIAM Review.

For a full list, see naokimas.github.io/naokimasuda.github.io/publ_e.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 (in Japanese) on academic writing, Enago

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

Evaluator for Promotion and Tenure for Other Institutions

Six times for R1 universities and one time for an R2 university in the US

One university in Japan

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 International
Graduate Student Language Assessment

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, 5/29/2017–6/2/2017

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 till 8/2023;
co-supervision terminated because Prof. Taylor moved to a different university)
- 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)

PhD thesis supervision — completed

2/2020–5/2024	Ruodan Liu, University at Buffalo Department of Mathematics (sole supervision by NM)
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

8/2021–5/2022	Yanyan Li, Senior Thesis (undergraduate), University at Buffalo (sole supervision by NM)
7/2020–5/2021	Mengyuan (Jason) Sun, Senior Thesis (undergraduate), University at Buffalo (sole supervision by NM)
1/2019–8/2019	Daiying Zhu (MSc, University of Bristol) “Project networks: data analysis and mathematical modelling”
1/2018–8/2018	Victor Küpper (MSc, University of Bristol) “Recurrence quantification analysis of recurrence plots with application to MEG data”
1/2018–8/2018	Longxin Wang (MSc, University of Bristol) “Epidemic dynamics modelling of disease progression in Alzheimer disease”
9/2018–5/2019	Arthur Dodson (MEng, University of Bristol) “Network-based early warning signals for financial markets”
9/2017–5/2018	Duncan Cassells (MEng, University of Bristol) “Energy landscape of financial markets”
9/2016–5/2017	Sophie Landon (MEng, University of Bristol) “Analysis and further development of an agent-based model for nest selection in the ant <i>Temnothorax albipennis</i> ”
9/2016–5/2017	Ryan Stuart (MEng, University of Bristol) “Autistic brain networks”
9/2016–5/2017	Yiyoung Kim (BEng, University of Bristol) “Immunising networks”
9/2015–5/2016	Jamie Wright (MEng, University of Bristol) “Network based sports rankings in international football”
9/2014–5/2015	Bobby East (MEng, University of Bristol) “Network-based ranking systems — An analysis of formula 1 driver ability”
4/2007–2/2014	13 M.Sc students, University of Tokyo (two year project)
10/2006–2/2013	17 B.Sc students, University of Tokyo (one semester project)

Rotation and summer 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

8/2024– Tharusha Bandara (funded by Japan Science and Technology Agency)
 5/2023– Si Thu Aung (funded by Japan Science and Technology Agency)
 1/2022–7/2024 Neil G. MacLaren (funded by Japan Science and Technology Agency)
 12/2021–11/2023 Pitambar Khanra (funded by Japan Science and Technology Agency)
 8/2020–5/2021 Rupam Acharyya (funded by JP Morgan Chase)
 4/2019–3/2021 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

- 6/5/2023–8/4/2023 Carlos Vázquez-de Jesus (undergraduate student,
University of Puerto Rico at Cayey)
- 1/18/2023–2/25/2023 Prof. Jiyoung Kang (Assistant Professor,
Pukyong National University, South Korea)
- 8/24/2021–4/21/2022 Kazuki Nakajima (PhD student, Tokyo Institute of Technology, Japan)
& 9/28/2022–3/21/2023

University of Bristol

- 5/13/2019–8/31/2019 Bruna Campos Guedes (undergraduate student,
Polytech Marseille — Aix-Marseille Université, France)
- 9/13/2018–3/12/2019 Shun Kodate (PhD student, Tohoku University, Japan)
visit funded by Graduate Program in Data Science, Tohoku University
- 3/5/2018–4/6/2018 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
- 1/19/2017–3/17/2017 Elohim Fonseca dos Reis (PhD student, University of Campinas, Brazil)
visit funded by EPSRC, UK

University of Tokyo

- 7/16/2013–8/30/2013 Yanru Chen (undergraduate student, Tsinghua University, China)
visit funded by Tsinghua University
- 6/11/2013–8/21/2013 Friederike Greb (postdoc, Georg-August-Universität Göttingen, Germany)
visit funded by Summer Program, Japan Society for the Promotion of Science
- 2/3/2012–3/2/2012 Paul Expert (postdoc, Imperial College, UK)
visit funded by Postdoctoral Fellowships for Foreign Researchers (short-term),
Japan Society for the Promotion of Science
- 5/1/2009–2/28/2010 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)

11/2023–	External dissertation committee member, Xiliang Mao, University of South Florida, USA
4/2024	Pre-examiner, Javier Urena-Carrion, Aalto University, Finland
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
10/2017	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)

Last updated: August 18, 2024