Masaki Ogura
Curriculum Vitae
Monday 24th April, 2023

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Graduate School of Information Science and Technology
Osaka University
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AREAS OF EXPERTISE

Control theory, network science, optimization, stochastic processes, biological physics

EDUCATION

- Ph.D. in Mathematics, *Texas Tech University*. 2014
- M.Sc. in Informatics, *Kyoto University*. 2009
- B.Eng., *Kyoto University*. 2007

PROFESSIONAL APPOINTMENTS

- Associate Professor, Department of Bioinformatic Engineering, Graduate School of Information Science and Technology, Osaka University, Japan. Nov 2019–present
- Visiting Associate Professor, Division of Information Science, Graduate School of Science and Technology, Nara Institute of Science and Technology, Japan. Apr 2020–Mar 2021
- Assistant Professor, Graduate School of Information Science, Nara Institute of Science and Technology, Japan. Mar 2017–Oct 2019
- Postdoctoral Researcher, Department of Electrical and Systems Engineering, University of Pennsylvania, Oct 2014–Feb 2017

SHORT TERM VISITS

- Department of Mechanical Engineering, University of Hong Kong. 2018, 2019
- ICTEAM Institute, Université catholique de Louvain, Belgium. 2013

SELECTED AWARDS AND HONORS

- Runner-up of the 2019 Best Paper Award, *IEEE Transactions on Network Science and Engineering*. 2019
- Summer Dissertation/Thesis Research Award, Texas Tech University. 2014
- Cash Family Endowed Fellowship, Texas Tech University. 2013
- Best Paper Award, The Society of Instrument and Control Engineers. 2012

PUBLICATIONS

Book Chapters

[1] V. M. Preciado, M. Zargham, C. Nowzari, S. Han, M. Ogura, A. Jadbabaie, and G. J. Pappas, "Bio-inspired Framework for Allocation of Protection Resources in Cyber-Physical Networks," in *Principles of Cyber-Physical Systems*. Cambridge University Press, 2020, pp. 293–322.

[2] M. Ogura and V. M. Preciado, "Optimal Containment of Epidemics in Temporal and Adaptive Networks," in *Temporal Networks Epidemiology*. Springer, 2017, pp. 241–266.

[3] M. Ogura and C. F. Martin, "Linear Switching Systems and Random Products of Matrices," in *Mathematical System Theory – Festschrift in Honor of Uwe Helmke on the Occasion of his Sixtieth Birthday*, K. Hüper and J. Trumpf, Eds. CreateSpace, 2013, pp. 291–300.

Refereed Journal Articles

[1] C. Zhao, K. Sakurama, and M. Ogura, "Optimization of buffer networks via DC programming," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 70, no. 2, pp. 606–610, 2023.

[2] M. Ogura and N. Wakamiya, "Reduced-order model predictive control of a fish schooling model," *Nonlinear Analysis: Hybrid Systems*, vol. 49, p. 101342, 2023.

[3] A. Li, M. Ogura, and N. Wakamiya, "Communication-free shepherding navigation with multiple steering agents," *Frontiers in Control Engineering*, vol. 4, 2023.

[4] A. Fujioka, M. Ogura, and N. Wakamiya, "Shepherding algorithm for heterogeneous flock with model-based discrimination," *Advanced Robotics*, vol. 37, no. 1-2, pp. 99–114, 2023.

[5] X. Gong, M. Ogura, J. Shen, T. Huang, and Y. Cui, "Optimal epidemics policy seeking on networks of networks under malicious attacks by geometric programming," *IEEE Transactions on Systems, Man, and Cybernetics: Systems* (accepted for publication), 2022.

[6] B. Zhu, J. Lam, and M. Ogura, "Log-log convexity of an optimal control problem for positive linear systems," *Automatica*, vol. 146, p. 110553, 2022.

[7] M. Nagahara, M. Ogura, and Y. Yamamoto, "Iterative greedy LMI for sparse control," *IEEE Control Systems Letters*, vol. 6, pp. 986–991, 2022.

[8] M. Kumazaki, M. Ogura, and T. Tachibana, "Dynamic service chain construction based on model predictive control in NFV environments," *IEICE Transactions on Communications*, vol. E105-B, no. 4, 2022.

[9] M. Kishida* and M. Ogura*, "Temporal deep unfolding for constrained nonlinear stochastic optimal controls," *IET Control Theory & Applications*, vol. 16, no. 2, pp. 139–150, 2022. (*equal contribution)

[10] R. Himo, M. Ogura, and N. Wakamiya, "Iterative algorithm for shepherding unresponsive sheep," *Mathematical Biosciences and Engineering*, vol. 19, no. 4, pp. 3509–3525, 2022.

[11] T. Kimura and M. Ogura, "Distributed 3D deployment of aerial base stations for on-demand communication," *IEEE Transactions on Wireless Communications*, vol. 20, no. 12, pp. 7728–7742, 2021.

[12] K. Hashimoto, Y. Onoue, M. Ogura, and T. Ushio, "Event-triggered control for mitigating SIS spreading processes," *Annual Reviews in Control*, vol. 52, pp. 479–494, 2021.

[13] K. Sugimoto, T. Aihara, M. Ogura, and K. Hanada, "Gain scheduling for sampled-data state estimation over lossy networks," *Transactions of the Institute of Systems, Control and Information Engineers*, vol. 34, no. 11, pp. 287–293, 2021.

[14] M. Nagahara, B. Krishnamachari, M. Ogura, A. Ortega, Y. Tanaka, Y. Ushifusa, and T. W. Valente, "Control, intervention, and behavioral economics over human social networks against COVID-19," *Advanced Robotics*, vol. 35, no. 11, pp. 733–739, 2021.

[15] C. Zhao, M. Ogura, M. Kishida, and A. Yassine, "Optimal resource allocation for dynamic product development process via convex optimization," *Research in Engineering Design*, vol. 32, no. 1, pp. 71–90, 2021.

[16] X. Chen, M. Ogura, and V. M. Preciado, "SDP-Based moment closure for epidemic processes on networks," *IEEE Transactions on Network Science and Engineering*, vol. 7, no. 4, pp. 2850–2865, 2020.

[17] M. Ogura, M. Kishida, and J. Lam, "Geometric programming for optimal positive linear systems," *IEEE Transactions on Automatic Control*, vol. 65, no. 11, pp. 4648–4663, 2020.

[18] W. Mei, C. Zhao, M. Ogura, and K. Sugimoto, "Mixed H_2/H_∞ control of delayed Markov jump linear systems," *IET Control Theory Applications*, vol. 14, no. 15, pp. 2076–2083, 2020.

[19] C. Zhao, M. Ogura, and K. Sugimoto, "Stability optimization of positive semi-Markov jump linear systems via convex optimization," *SICE Journal of Control, Measurement, and System Integration*, vol. 13, no. 5, pp. 233–239, 2020.

[20] M. Kishida*, M. Ogura*, Y. Yoshida, and T. Wadayama, "Deep learning-based average consensus," *IEEE Access*, vol. 8, pp. 142 404 – 142 412, 2020. (*equal contribution)

[21] X. Chen, M. Ogura, and V. M. Preciado, "Bounds on the spectral radius of digraphs from motif counts," *SIAM Journal on Matrix Analysis and Applications*, vol. 41, no. 2, pp. 525–553, 2020.

[22] N. Masuda, V. M. Preciado, and M. Ogura, "Analysis of the susceptible-infected-susceptible epidemic dynamics in networks via the non-backtracking matrix," *IMA Journal of Applied Mathematics*, vol. 85, no. 2, pp. 214–230, 2020.

[23] M. Ogura, W. Mei, and K. Sugimoto, "Synergistic effects in networked epidemic spreading dynamics," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 67, no. 3, pp. 496–500, 2020.

[24] M. Ogura and V. M. Preciado, "Stability of SIS spreading processes in networks with non-Markovian transmission and recovery," *IEEE Transactions on Control of Network Systems*, vol. 7, no. 1, pp. 349–359, 2020.

[25] Y. Abe, M. Ogura, H. Tsuji, A. Miura, and S. Adachi, "Resource and network management framework for a large-scale satellite communications system," *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, vol. E103, no. 2, pp. 492–501, 2020. **Telecom System Technology Student Award**, Telecommunication Advancement Foundation.

[26] M. Ogura, J. Harada, M. Kishida, and A. Yassine, "Resource optimization of product development projects with time-varying dependency structure," *Research in Engineering Design*, vol. 30, no. 3, pp. 435–452, 2019.

[27] M. Ogura, V. M. Preciado, and N. Masuda, "Optimal containment of epidemics over temporal activity-driven networks," *SIAM Journal on Applied Mathematics*, vol. 79, no. 3, pp. 986–1006, 2019.

[28] W. Mei and M. Ogura, "Kronecker weights for instability analysis of Markov jump linear systems," *IET Control Theory & Applications*, vol. 13, no. 3, pp. 360–366, 2019.

[29] M. Wakaiki, M. Ogura, and J. P. Hespanha, "LQ-optimal sampled-data control under stochastic delays: gridding approach for stabilizability and detectability," *SIAM Journal on Control and Optimization*, vol. 56, no. 4, pp. 2634–2661, 2018.

[30] M. Ogura and V. M. Preciado, "Second-order moment-closure for tighter epidemic thresholds," *Systems & Control Letters*, vol. 113, pp. 59–64, 2018.

[31] M. Ogura, A. Cetinkaya, T. Hayakawa, and V. M. Preciado, "State feedback control of Markov jump linear systems with hidden-Markov mode observation," *Automatica*, vol. 89, pp. 65–72, 2018.

[32] M. Ogura and V. M. Preciado, "Optimal design of switched networks of positive linear systems via geometric programming," *IEEE Transactions on Control of Network Systems*, vol. 4, no. 2, pp. 213–222, 2017.

[33] M. Ogura, M. Wakaiki, H. Rubin, and V. M. Preciado, "Delayed bet-hedging resilience strategies under environmental fluctuations," *Physical Review E*, vol. 95, p. 052404, 2017.

[34] M. Ogura, V. M. Preciado, and R. M. Jungers, "Efficient method for computing lower bounds on the p-radius of switched linear systems," *Systems & Control Letters*, vol. 94, pp. 159–164, 2016.

[35] M. Ogura and V. M. Preciado, "Epidemic processes over adaptive state-dependent networks," *Physical Review E*, vol. 93, p. 062316, 2016.

[36] M. Ogura and V. M. Preciado, "Stability of Markov regenerative switched linear systems," *Automatica*, vol. 69, pp. 169–175, 2016.

[37] M. Ogura and V. M. Preciado, "Stability of spreading processes over time-varying large-scale networks," *IEEE Transactions on Network Science and Engineering*, vol. 3, no. 1, pp. 44–57, 2016. Runner-up of **2019 IEEE TNSE Best Paper Award**.

[38] M. Ogura and C. F. Martin, "Stability analysis of linear systems subject to regenerative switchings," *Systems & Control Letters*, vol. 75, pp. 94–100, 2015.

[39] M. Ogura and C. F. Martin, "A limit formula for joint spectral radius with p-radius of probability distributions," *Linear Algebra and its Applications*, vol. 458, pp. 605–625, 2014.

[40] M. Ogura and C. F. Martin, "Stability analysis of positive semi-Markovian jump linear systems with state resets," *SIAM Journal on Control and Optimization*, vol. 52, pp. 1809–1831, 2014.

[41] M. Ogura and C. F. Martin, "Generalized joint spectral radius and stability of switching systems," *Linear Algebra and its Applications*, vol. 439, no. 8, pp. 2222–2239, 2013.

[42] M. Ogura and Y. Yamamoto, "Dissipativity of pseudorational behaviors," *IEEE Transactions on Automatic Control*, vol. 58, no. 4, pp. 823–833, 2013.

[43] M. Nagahara, M. Ogura, and Y. Yamamoto, "H^∞ design of periodically nonuniform interpolation and decimation for non-band-limited signals," *SICE Journal of Control, Measurement, and System Integration*, vol. 4, no. 5, pp. 341–348, 2011. **2012 SICE Best Paper Award**.

Refereed Conference Proceedings

[1] J. Aizawa, M. Ogura, M. Shimono, and N. Wakamiya, "Temporal deep unfolding-based MPC for controlling firing patterns of neuronal network." in *2023 RISP International Workshop on Nonlinear Circuits, Communications and Signal Processing*, 2023.

[2] C. Zhao, X. Gong, Y. Ebihara, and M. Ogura, "Impulse-to-peak optimization of positive linear systems via DC drogramming," in *22nd IFAC World Congress* (accepted), 2023.

[3] A. Fujioka, M. Ogura, and N. Wakamiya, "Shepherding heterogeneous flocks: overview and prospect," in *22nd IFAC World Congress* (accepted), 2023.

[4] A. Li, M. Ogura, and N. Wakamiya, "Proposal of a bearing-only shepherding algorithm with limited sensing capabilities," in *AROB-ISBC-SWARM 2023*, 2023, pp. GS34–1.

[5] Y. Deng, M. Ogura, A. Li, and N. Wakamiya, "Shepherding control for separating a single agent from a swarm," in *1st IFAC Workshop on Control of Complex Systems*, 2022, pp. 217–222.

[6] A. Fujioka, M. Ogura, and N. Wakamiya, "Shepherding algorithm based on variant agent detection for heterogeneous flock," in *SICE Annual Conference 2022*, 2022, pp. 87–91. Finalists of **SICE Annual Conference 2022 Young Author's Award**.

[7] A. Li, M. Ogura, Y. Tsunoda, and N. Wakamiya, "Proposal of farthest-agent targeting algorithm with indirect chasing," in *SICE Annual Conference 2022*, 2022, pp. 92–94.

[8] M. Ogura, K. Kobayashi, and K. Sugimoto, "Static output feedback synthesis of time-delay linear systems via deep unfolding," in *17th IFAC Workshop on Time Delay Systems*, 2022, pp. 214–215.

[9] M. Kishida and M. Ogura, "Temporal deep unfolding for nonlinear stochastic optimal control," in *7th International Conference on Advances in Control & Optimization of Dynamical Systems*, 2022, pp. 908–913.

[10] M. Ogura and N. Wakamiya, "Model predictive control of fish schooling model with reduced-order prediction model," in *60th IEEE Conference on Decision and Control*, 2021, pp. 4115–4120.

[11] M. Kishida and M. Ogura, "Temporal deep unfolding for nonlinear maximum hands-off control," in *SICE Annual Conference 2021*, 2021, pp. 1007–1010.

[12] K. Kobayashi, M. Ogura, T. Kobayashi, and K. Sugimoto, "Deep unfolding-based output feedback control design for linear systems with input saturation," in *SICE International Symposium on Control Systems 2021*, 2021, pp. 33–39.

[13] M. Kumazaki, M. Ogura, and T. Tachibana, "Service chain construction with efficient VNF sharing based on model predictive control," in *2020 International Conference on Emerging Technologies for Communications*, 2020, pp. M1–5.

[14] K. Sugimoto, M. Ogura, K. Hanada, and T. Aihara, "Sampled-data suboptimal state estimation over lossy networks," in *52nd ISCIE International Symposium on Stochastic Systems Theory and Its Applications*, 2020.

[15] C. Zhao, M. Ogura, and K. Sugimoto, "Finite-time control of discrete-time positive linear systems via convex optimization," in *SICE Annual Conference 2020*, 2020, pp. 1230–1235.

[16] Y. Abe, M. Ogura, H. Tsuji, A. Miura, and S. Adachi, "Resource and network management for satellite communications systems: a chance-constrained approach," in *21th IFAC World Congress*, 2020, pp. 3304–3309.

[17] T. Kimura and M. Ogura, "Distributed collaborative 3D-deployment of UAV base stations for on-demand coverage," in *IEEE INFOCOM 2020*. IEEE, 2020, pp. 1748–1757. Acceptance rate **19.8 percent**.

[18] M. Aida, C. Takano, and M. Ogura, "On the fundamental equation of user dynamics and the structure of online social networks," in *NetSci-X 2020*, 2020, pp. 155–170.

[19] M. Ogura, M. Kishida, K. Hayashi, and J. Lam, "Geometric programming for optimizing stability of distributed power control algorithms," in *SICE Annual Conference 2019*, 2019, pp. 679–680.

[20] M. Ogura, W. Mei, and K. Sugimoto, "Upper-bounding dynamics on networked synergistic susceptible-infected-susceptible model," in *SICE Annual Conference 2019*, 2019, pp. 1430–1431.

[21] M. Ogura, M. Kishida, and A. Yassine, "Optimizing product development projects under asynchronous and aperiodic system-local interactions," in *21st International DSM Conference*, 2019, pp. 97–106.

[22] M. Ogura, M. Kishida, K. Hayashi, and J. Lam, "Resource allocation for robust stabilization of Foschini-Miljanic Algorithm," in *2019 American Control Conference*, 2019, pp. 4030–4035.

[23] M. Kumazaki, M. Ogura, and T. Tachibana, "VNF management with model predictive control for multiple service chains," in *IEEE International Conference on Consumer Electronics – Taiwan*, 2019.

[24] T. Tadenuma, M. Ogura, and K. Sugimoto, "Sampled-data state observation over lossy networks under round-robin scheduling," in *5th IFAC Conference on Analysis and Control of Chaotic Systems*, 2018, pp. 197–202. **Young Author Award Finalist**.

[25] W. Mei and M. Ogura, "Instability analysis of Markov jump linear systems by spectral optimization," in *SICE Annual Conference 2018*, 2018, pp. 419–422.

[26] M. Ogura, J. Wan, and S. Kasahara, "Model predictive control for energy-efficient operation of data centers with cold aisle containments," in *6th IFAC Conference on Nonlinear Model Predictive Control*, 2018, pp. 241–246.

[27] M. Ogura and J. Harada, "Resource allocation for containing epidemics from temporal network data," in *23rd International Symposium on Mathematical Theory of Networks and Systems*, 2018, pp. 537–542.

[28] M. Ogura, J. Tagawa, and N. Masuda, "Distributed agreement on activity driven networks," in *2018 American Control Conference*, 2018, pp. 4147–4152.

[29] X. Chen, M. Ogura, K. R. Ghusinga, A. Singh, and V. M. Preciado, "Semidefinite bounds for moment dynamics: Application to epidemics on networks," in *56th IEEE Conference on Decision and Control*, 2017, pp. 2448–2454.

[30] M. Wakaiki, M. Ogura, and J. P. Hespanha, "Linear quadratic control for sampled-data systems with stochastic delays," in *2017 American Control Conference*, 2017, pp. 1978–1983.

[31] M. Ogura and V. M. Preciado, "Katz centrality of Markovian temporal networks: analysis and optimization," in *2017 American Control Conference*, 2017, pp. 5001–5006.

[32] M. Ogura and V. M. Preciado, "Efficient containment of exact SIR Markovian processes on networks," in *55th IEEE Conference on Decision and Control*, 2016, pp. 967–972. **29**.

[33] M. Ogura, M. Wakaiki, and V. M. Preciado, "Dynamic analysis of bet-hedging strategies as a protection mechanism against environmental fluctuations," in *55th IEEE Conference on Decision and Control*, 2016, pp. 4178–4183.

[34] M. Wakaiki, M. Ogura, and J. P. Hespanha, "Robust stability under asynchronous sensing and control," in *55th IEEE Conference on Decision and Control*, 2016, pp. 5962–5967.

[35] V. M. Preciado and M. Ogura, "Structural analysis of spreading processes from ego-nets," in *6th IFAC Workshop on Distributed Estimation and Control in Networked Systems*, 2016, pp. 345–350.

[36] M. Ogura, A. Cetinkaya, T. Hayakawa, and V. M. Preciado, "Efficient criteria for stability of large-scale networked control systems," in *6th IFAC Workshop on Distributed Estimation and Control in Networked Systems*, 2016, pp. 13–18.

[37] M. Ogura, M. Wakaiki, J. P. Hespanha, and V. M. Preciado, "L^2-gain analysis of regenerative switched linear systems under sampled-data state-feedback control," in *2016 American Control Conference*, 2016, pp. 709–714.

[38] M. Ogura and V. M. Preciado, "Optimal design of networks of positive linear systems under stochastic uncertainty," in *2016 American Control Conference*, 2016, pp. 2930–2935.

[39] M. Ogura and V. M. Preciado, "Cost-optimal switching protection strategy in adaptive networks," in *54th IEEE Conference on Decision and Control*, 2015, pp. 3574–3579.

[40] M. Ogura and V. M. Preciado, "Spreading processes over socio-technical networks with phase-type transmissions," in *54th IEEE Conference on Decision and Control*, 2015, pp. 3548–3553.

[41] C. Nowzari, M. Ogura, V. M. Preciado, and G. J. Pappas, "A general class of spreading processes with non-Markovian dynamics," in *54th IEEE Conference on Decision and Control*, 2015, pp. 5073–5078.

[42] M. Ogura, M. Nagahara, and V. M. Preciado, "L^1-optimal disturbance rejection for disease spread over time-varying networks," in *SWARM 2015: The First International Symposium on Swarm Behavior and Bio-Inspired Robotics*, 2015, pp. 377–378.

[43] C. Nowzari, M. Ogura, V. M. Preciado, and G. J. Pappas, "Optimal resource allocation for containing epidemics on time-varying networks," in *49th Asilomar Conference on Signals, Systems and Computers*, 2015, pp. 1333–1337.

[44] M. Ogura, A. Cetinkaya, and V. M. Preciado, "State-feedback stabilization of Markov jump linear systems with randomly observed markov states," in *2015 American Control Conference*, 2015, pp. 1764–1769.

[45] M. Ogura and V. M. Preciado, "Disease spread over randomly switched large-scale networks," in *2015 American Control Conference*, 2015, pp. 1782–1787.

[46] M. Ogura and R. M. Jungers, "Efficiently computable lower bounds for the *p*-radius of switching linear systems," in *53rd IEEE Conference on Decision and Control*, 2014, pp. 5463–5468.

[47] M. Ogura and C. F. Martin, "Mean stability of continuous-time semi-Markov jump linear positive systems," in *2014 American Control Conference*, 2014, pp. 3261–3266.

[48] M. Ogura and C. F. Martin, "On the mean stability of a class of switched linear systems," in *52nd IEEE Conference on Decision and Control*, 2013, pp. 97–102.

[49] M. Ogura and C. F. Martin, "Stability of switching systems and generalized joint spectral radius," in *2013 European Control Conference*, 2013, pp. 3185–3190.

[50] M. Ogura and C. F. Martin, "Stochastic properties of switched Riccati differential equations," in *51st IEEE Conference on Decision and Control*, 2012, pp. 1319–1324.

[51] M. Ogura, Y. Yamamoto, and J. C. Willems, "On the dissipativity of pseudorational behaviors," in *49th IEEE Conference on Decision and Control*, 2010, pp. 1737–1742.

[52] Y. Yamamoto, J. C. Willems, and M. Ogura, "Pseudorational behaviors and Bezoutians," in *19th International Symposium on Mathematical Theory of Networks and Systems*, 2010, pp. 1917–1921.

[53] M. Ogura and Y. Yamamoto, "Dissipativity of pseudorational behaviors," in *19th International Symposium on Mathematical Theory of Networks and Systems*, 2010, pp. 849–853.

[54] M. Ogura and Y. Yamamoto, "Hankel norm computation for pseudorational transfer functions," in *48th IEEE Conference on Decision and Control held jointly with 2009 28th Chinese Control Conference*, 2009, pp. 5502–5507.

[55] M. Nagahara, M. Ogura, and Y. Yamamoto, "A novel approach to repetitive control via sampled-data H^∞ filters," in *7th Asian Control Conference*, 2009, pp. 160–165.

[56] M. Nagahara, M. Ogura, and Y. Yamamoto, "Interpolation of nonuniformly decimated signals via sampled-data H^∞ optimization," in *SICE Annual Conference 2008*, 2008, pp. 1151–1154.

[57] M. Ogura, M. Nagahara, and Y. Yamamoto, "Optimal wavelet expansion via sampled-data H^∞ control theory," in *SICE Annual Conference 2007*, 2007, pp. 1422–1426.

Invited and Hourly Talks

[1] "Perspectives on Artificial Intelligence," *2nd Japanese-Canadian Frontiers of Science (JCFoS) Symposium*, 2023.

[2] "When deep unfolding meets control engineering," *37th International Technical Conference on Circuits\Systems, Computers and Communications*, 2022.

[3] "Optimization of positive linear systems via geometric programming," *Shenzhen University*, 2019.

[4] "Optimization of positive linear systems via geometric programming," *Guandong University of Technology*, 2019.

[5] "Synthesis of positive linear systems by geometric programming," *University of Hong Kong*, 2019.

[6] "Networked epidemic spreading: modeling, analysis, and control," *National Insitutite of Informatics*, 2018.

[7] "Network epidemiology and control theory," *University of Hong Kong*, 2018.

[8] "Analysis and control of spreading processes over complex networks," *Washington State University*, 2017.

[9] "Analysis and control of spreading processes over complex networks," *Tokyo University of Agriculture and Technology*, 2016.

[10] "Stability analysis of switched linear systems with non-traditional switching signals," in *GRASP special seminar*, University of Pennsylvania, 2014.

[11] "Mean stability of switched linear systems," *Université Catholique de Louvain*, 2013.

TEACHING ACTIVITIES

Osaka University
- Basic Theory of Bio-networks (2021–present)
- Informatics for Engineering Science 1 (2020–present)
- Fundamentals of Information and Computer Sciences (2020–present)
- Bio-network Engineering (2020–present)

Nara Institute of Science and Technology
- Machine Learning and Intelligent Control (Spring 2019)
- Advanced Intelligent System Control (Spring 2017, 2018)

University of Pennsylvania
Co-lecturer:
- Convex Optimization in Systems and Control (Fall 2015)

Texas Tech University
Graduate Part-Time Instructor:
- Calculus II (Summer 2014, Spring 2014, Spring 2013)

- Calculus I (Summer 2013, Fall 2012)
- Trigonometry (Fall 2011)
- College Algebra (Fall 2013, Spring 2012)

Teaching Assistant:
- Advanced Calculus (Summer 2012)
- Linear Algebra (Summer 2012)
- Higher Mathematics for Engineers and Scientists I (Summer 2011)

Kyoto School of Computer Science

Lecturer:
- Control Engineering (Fall 2009, Fall 2008)
- Electrical Circuits (Spring 2008)
- Data Structures (Spring 2008)
- Numerical Analysis (Spring 2010, Spring 2009)

Kyoto University

Teaching Assistant:
- Modern Control Theory (Fall 2009, Fall 2008)

PROFESSIONAL SERVICE

Editorial Work
- Associate Editor, IET Control Theory & Applications, 2022–present.
- Associate Editor, Franklin Open, 2022–present.
- Associate Editor, Journal of The Franklin Institute, 2020–present.
- Associate Editor, The 5th IFAC Workshop on Distributed Estimation and Control in Networked Systems, 2015.

Organization of Conferences and Workshops
- International Program Committee Secretary, 8th IFAC Conference on Nonlinear Model Predictive Control, 2024.
- Registration Chair, 10th IFAC Symposium on Robust Control Design, 2022.
- Program Committee member, International Conference on Complex Networks and their Applications, 2022.
- Program Committee member, International Conference on Complex Networks and their Applications, 2021.
- Program Committee member, International Conference on Complex Networks and their Applications, 2020.
- Program & Steering Committee member, 52nd ISCIE International Symposium on Stochastic Systems Theory and Its Applications, 2020.
- Local Arrangements Vice Chair, SICE Annual Conference 2018.

PhD External Examiner
- Ximing Chen, Department of Electrical and Systems Engineering, University of Pennsylvania, 2019.

Journal Reviewer

Advanced Robotics; Annual Reviews in Control; Automatica; Applied Mathematics and Computation; Applied Network Science; Asian Journal of Control; Computer Communications; Discrete Mathematics; European Journal of Control European Physical Journal B; Foundations of Computational Mathematics; IEEE Access; IEEE/ACM Transactions on Computational Biology and Bioinformatics; IEEE Circuits and Systems Magazine; IEEE Control Systems Letters; IEEE Intelligent Systems; IEEE Transactions on Automatic Control; IEEE Transactions on Big Data; IEEE Transactions on Circuits and Systems; IEEE Transactions on Control of Network Systems; IEEE Transactions on Fuzzy Systems; IEEE Transactions on Signal Processing; IEEE Transactions on Systems, Man and Cybernetics: Systems; IEEE Transactions on Network Science and Engineering; IEEE Transactions on Neural Networks and Learning Systems; IET Control Theory & Applications; International Journal of Robust and Nonlinear Control; Journal of Biological Dynamics; Journal of the Franklin Institute; Mathematics of Control, Signals, and Systems; Neural Networks; Neurocomputing; Nonlinear Analysis: Hybrid Systems; Operations Research and Decisions; Physica A; Physics Letters A; SIAM Journal on Control and Optimization; SICE Journal of Control, Measurement, and System Integration; Stochastics and Dynamics; Systems and Control Letters; Research in Engineering Design;

Research Advising

PhD thesis supervision — completed
- Chengyan Zhao, Nara Institute of Science and Technology (Apr 2018–Mar 2021)

Master and Bachelor thesis supervision
- Deng Yaosheng, Master Thesis, Osaka University (Apr 2022–present)
- 2 BEng students, Osaka University (Apr 2022–present, one-year project)
- Junpei Aizawa, Master Thesis, Osaka University (Apr 2021–present)
- Anna Fujioka, Master Thesis, Osaka University (Apr 2021–present)
- Aiyi Li, Master Thesis, Osaka University (Apr 2021–present)
- Hirotada Wada, Master Thesis, Osaka University (Apr 2021–present)
- 3 BEng students, Osaka University (Apr 2021–Mar 2022, one-year project)
- 2 BEng students, Osaka University (Apr 2020–Mar 2021, one-year project)
- 6 MEng students, Osaka University (Apr 2017–Mar 2020, two-year project)

Masaki Ogura, April 2023