

Masako Kishida

Professor
University of Tsukuba

✉ kishida@cs.tsukuba.ac.jp
🌐 <https://mkishida.github.io/www/>
1-1-1 Tennodai, Tsukuba, Ibaraki 305-8573 Japan

Affiliations

University of Tsukuba Institute of Systems and Information Engineering, Professor	Ibaraki, Japan 2025–present
National Institute of Informatics Principles of Informatics Division, Associate Professor	Tokyo, Japan 2016–2025
Graduate University for Advanced Studies, SOKENDAI Informatics Program, Associate Professor	Tokyo, Japan 2016–2025
The University of Osaka Graduate School of Information Science and Technology, Guest Associate Professor	Osaka, Japan 2021–2023
The Otto-von-Guericke Universität Magdeburg Humboldt Research Fellow	Magdeburg, Germany 2015–2016
University of Canterbury Electrical and Computer Engineering, Lecturer	Christchurch, New Zealand 2013–2015
University of Tokyo Graduate School of Information Science and Technology, Assistant Professor	Tokyo, Japan 2012
University of Tokyo Graduate School of Information Science and Technology, Project Researcher	Tokyo, Japan 2012
Massachusetts Institute of Technology Department of Chemical Engineering, Visiting Scholar	Cambridge, MA 2010–2012
University of Illinois at Urbana-Champaign Department of Chemical and Biomolecular Engineering, Postdoctoral Research Associate	Urbana, IL 2010–2012

Education

University of Illinois at Urbana-Champaign Ph.D., Mechanical Engineering – Thesis: “Robust Optimal Boundary and Spatial Field Control of Distributed Parameter Systems”	Urbana, IL 2010
University of Michigan, Ann Arbor M.S.E., Aerospace Engineering	Ann Arbor, MI 2006
University of Michigan, Ann Arbor M.S., Applied and Interdisciplinary Mathematics	Ann Arbor, MI 2006
University of Michigan, Ann Arbor B.S.E., Aerospace Engineering with minor in Mathematics	Ann Arbor, MI 2004

Honors, Awards and Interdisciplinary Meetings

■ Participant, 5th ERCIM/JST Joint Workshop	2024
■ General participant, 16th Japan-America Frontiers of Engineering Symposium (日米先端工学 (JAFoE) シンポジウム参加研究者)	2023
■ The Young Scientists' Prize, The Commendation for Science and Technology by MEXT (令和2年度科学技術分野の文部科学大臣表彰 若手科学者賞)	2020
■ Telecom System Technology Award, The Telecommunications Advancement Foundation (公益財団法人 電気通信普及財団 第34回テレコムシステム技術賞 奨励賞)	2019
■ Discussant, 2nd JSPS Japanese-American-German Frontiers of Science Symposium (第2回日米独先端科学 (JAGFoS) シンポジウム参加研究者)	2019
■ IEEE Senior Member	2018
■ Okawa Foundation Grant Recipient (公益財団法人大川情報通信基金 2017年度研究助成)	2017
■ Humboldt Research Fellowship, Alexander von Humboldt Foundation	2015
■ Best Presentation in Session, American Control Conference	2013
■ Hanratty Travel Award, University of Illinois at Urbana-Champaign	2010
■ Graduate College Travel Grant Award, University of Illinois at Urbana-Champaign	2008
■ Schaller Travel Award, University of Illinois at Urbana-Champaign	2008
■ Marian Sarah Parker Scholar, The University of Michigan, Ann Arbor	2003

Professional Affiliations

IEEE

Grants ((co-)PI only)

■ FOREST, Japan Science and Technology Agency (国立研究開発法人科学技術振興機構 創発的研究支援事業 「構造不確実性と時間変化に対応する次世代グラフ信号処理」後藤パネル 2024年度)	2026-2032
■ CRONOS, Japan Science and Technology Agency (国立研究開発法人科学技術振興機構 戦略的創造研究推進事業 CRONOS 「視覚情報の時空間スパース性を活用した計測・通信・制御の協調設計」川原領域)	2025-2030
■ Strategic Research Projects, Research Organization of Information and Systems 2024-SRP-05: How to adapt to different pianos? Insights from neuroscience and control theory (情報・システム研究機構 戦略的研究プロジェクト)	2024-2025
■ PRESTO, Japan Science and Technology Agency JPMJPR22C3: The construction and development of risk-aware control theory (国立研究開発法人科学技術振興機構 戦略的創造研究推進事業 さきがけ 「リスク・アウェア制御理論の構築とその展開」有村総括)	2022-2026
■ CREST, Japan Science and Technology Agency (Lead Joint Researcher) JPMJCR2012: CyPhAI: Formal analysis and design of aI-intensive cyber-physical systems (国立研究開発法人科学技術振興機構 戦略的創造研究推進事業 CREST 主たる共同研究者 「AI集約的サイバーフィジカルシステムの形式的解析設計手法」(代表: 末永幸平) 上田総括)	2020-2026
■ Travel Grant, Tateisi Foundation 公益財団法人立石科学技術振興財団 2018年度前期国際交流助成)	2018
■ Grant-in-Aid for Research Activity Start-up, Japan Society for the Promotion of Science (16H07412) (日本学術振興会平成28年度研究活動スタート支援)	2016

- International Aid, Yazaki Memorial Foundation for Science and Technology (公益財団法人矢崎科学技術振興記念財団 2016年度国際交流援助(中期)) 2016
- IEEE Registration Grant for Young Researchers for CDC 2015
- IEEE Student Travel Grants for MSC, ACC and CDC 2008–2010

Professional Service

Editorial board member

- IEEE Open Journal of Control Systems, Associate Editor 2025 –present
- IEEE Transactions on Automatic Control, Associate Editor 2024 –present
- Frontiers in Control Engineering, Community Reviewer 2022 –present
- IET Control Theory & Applications 2020 –2025
- IEEE Control Systems Society Conference 2018 –2025

Conference committees

- Program Committee, SICE International Symposium on Control Systems 2024, 2025
- International Program Committee, IFAC Conference on Nonlinear Model Predictive Control 2024
- Registration Co-Chair, IFAC World Congress 2023
- International Program Committee, IFAC Symposium on Robust Control Design 2021
- International Program Committee Technical Associated Editor, IFAC 2020
- Program Committee Member, American Control Conference 2015
- International Program Committee Member, IFAC Int. Symp. on Advanced Control of Chemical Processes 2015
- Technical Program Committee Member, 10th Asian Control Conference 2015

Session (Co-)Chair

- IEEE Conference on Decision and Control 2024, 2023, 2022, 2018, 2015, 2014, 2012
- American Control Conference 2017, 2013
- IFAC World Congress 2020
- SICE Annual Conference 2021
- IFAC Symposium on Robotics 2025

Technical Committees (selected)

Technical Committee on Optimal Control (Member, IFAC), Technical Committee on Robust and Complex Systems (Member, IEEE Control Systems Society), Technical Committee on Process Control (Member, IEEE Control Systems Society), SICE Research Committee on Human-Connected Control Systems 人とつながる制御システム調査研究会 (2022-2023) SICE Research Committee on Cyber-Physical & Human System サイバーフィジカルと人間システム調査研究会 (2019-2020) SICE Research Committee on IoT時代に向けたイベントベース制御調査研究会 (2018-2019), SICE Research Committee on Fusion of Machine Learning and Dynamics in Model-Based Control モデルベース制御における機械学習とダイナミクスの融合調査研究会 (2017-2018), SICE Research Committee on Control and System Design for Urban Infrastructures, 都市インフラシステム構築と制御調査研究会 (2016-2017)

Reviewers (selected)

IEEE Transactions on Automatic Control, Automatica, International Journal of Robust and Nonlinear Control, Optimal Control Applications & Methods, Computers and Chemical Engineering, American Control Conference, IEEE Conference on Decision and Control, IFAC Symposium on Dynamics and Control of Process, Computational and Mathematical Methods in Medicine Systems, European Control Conference, Asian Control Conference, IFAC International Symposium on Advanced Control of Chemical Processes, SICE Annual Conference

Misc.

- 計測自動制御学会制御理論部会 委員 2023-2024年度
(The Society of Instrument and Control Engineers, Committee of Control Theory, Member)
- 計測自動制御学会 代議員 2021-2024年度
(The Society of Instrument and Control Engineers, Delegate)

Publications

Book Chapters

2. **M. Kishida** and Y. Hioka, “Circularly Moving Sensor for Use of Modulation Effect - CAROUSEL,” In *Sensing Technology Current Status and Future Trends IV, Smart Sensors, Measurement and Instrumentation Volume 12*, Springer, pp.217-234, 2015
1. **M. Kishida** and R. D. Braatz, “Internal model control,” In *The Control Handbook*, 2nd edition, W. S. Levine, editor, CRC Press, Boca Raton, Florida, Chapter 9.7, 2010

Referred Journal Articles

39. **M. Kishida**, “Risk-aware control: Integrating worst-case conditional value-at-risk with control barrier function,” *IET Control Theory & Applications*, vol. 19, no. 1, e70024, 2025
38. **M. Kishida**, S. Ono, “Graph learning over polytopic uncertain graph,” *IEEE Signal Processing Letters*, vol. 32, pp. 716–720, 2025
37. W. Hashimoto, K. Hashimoto, **M. Kishida**, and S. Takai, “Robust learning-based iterative model predictive control for unknown non-linear systems,” *IET Control Theory & Applications*, vol. 18, no.18, pp. 2540–2554, 2024
36. S. Patil, K. Hashimoto, **M. Kishida**, “A robust traffic flow control using connected vehicle technology: Signal spatio-temporal logic-based approach,” *IEEE Transactions on Intelligent Transportation Systems*, vol.25, no.12, pp.19658-19674, 2024
35. W. Hashimoto, K. Hashimoto, A. Wachi, X. Shen, **M. Kishida**, and S. Takai, “Data-efficient safe learning and control with on-board sensors: Bayesian meta-learning and barrier function based approach,” *Advanced Robotics*, vol. 38, no. 21, pp. 1501–1514, 2024
34. **M. Kishida**, “Risk-aware stability, ultimate boundedness, and positive invariance,” *IEEE Transactions on Automatic Control*, vol. 69, no. 1, pp. 681-688, 2024
33. 和田弘匡, 小蔵正輝, 岸田昌子, 若宮直紀 “深層展開を用いた静的出力フィードバック安定化におけるハイパーパラメータの考察,” 計測自動制御学会論文集 vol. 59, no. 7, pp. 309-320, 2023 (Hyperparameter selection in deep unfolding-based static output feedback stabilization)
32. **M. Kishida**, “Risk-aware self-triggered linear quadratic control,” *IET Control Theory & Applications*, vol. 17, no. 9, pp. 1167-1183, 2023
31. **M. Kishida** and M. Nagahara, “Risk-aware maximum hands-off control using worst-case conditional value-at-risk,” *IEEE Transactions on Automatic Control*, vol. 68, no. 10, pp. 6353-6360, 2023
30. 相澤純平, 小蔵正輝, 岸田昌子, 若宮直紀 “時相深層展開を用いたモデル予測制御の多重振り子系に対する有効性の検証,” システム制御情報学会論文誌 vol. 36, no. 4, 2023 (Evaluation of temporal deep unfolding-based MPC for multilink pendulum)

29. **M. Kishida** and A. Cetinkaya, "Risk-aware linear quadratic control using conditional value-at-risk," *IEEE Transactions on Automatic Control*, vol. 68, no.1, pp.416-423, 2023
28. K. Hashimoto, A. Saoud, **M. Kishida**, T. Ushio, D. V. Dimarogonas, "Learning-based symbolic abstractions for nonlinear control systems," *Automatica* pp.110646, 2022
27. **M. Kishida** and M. Ogura, "Temporal deep unfolding for constrained nonlinear stochastic optimal control," *IET Control Theory & Applications*, vol.16, pp. 139-150, 2022
26. A. Cetinkaya and **M. Kishida**, "Impossibility results for constrained control of stochastic systems," *IEEE Transactions on Automatic Control*, vol.66, pp. 5974-5981, 2021
25. A. Cetinkaya and **M. Kishida**, "Instabilizability conditions for continuous-time stochastic systems under control input constraints," *IEEE Control Systems Letters*, vol.6, pp. 1430-1435, 2021
24. 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, pp. 71-90, 2021
23. K. Hashimoto, **M. Kishida**, Y. Yoshimura, T. Ushio, "A Bayesian optimization approach to decentralized event-triggered control," *IEICE*, Vol.E104-A, No.2, pp. 447-454, 2021
22. 八木聖太, 小蔵正輝, 岸田昌子, 木村達明, 林和則, "Geometric programによる送信電力制御アルゴリズムのロバスト安定化," 信学会和文論文誌B, Vol. J103-B, No.12, 2020 (Robust Stabilization of Power Control Algorithm by Geometric Programming)
21. **M. Kishida**, M. Ogura, Y. Yoshida and T. Wadayama, "Deep learning-based average consensus," *IEEE Access*, vol.8, pp.142404-142412, 2020
20. M. Ogura, **M. Kishida** and J. Lam, "Geometric programming for optimal positive linear systems," *IEEE Transactions on Automatic Control*, vol.65, pp.4648-4663, 2020
19. S. Kawamura, K.Cai, and **M. Kishida**, "Distributed output regulation of heterogeneous uncertain linear agents," *Automatica*, vol. 119, 109094, 2020
18. K. Hashimoto, A. Saoud, **M. Kishida**, T. Ushio and D. V. Dimarogonas, "A symbolic approach to the self-triggered design for networked control systems," *IEEE Control Systems Letters*, vol. 3, pp. 1050-1055, 2019
17. 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, pp. 435-452, 2019
16. **M. Kishida**, "Event-triggered control with self-triggered sampling for discrete-time uncertain systems," *IEEE Transactions on Automatic Control*, vol. 64, pp. 1273-1279, 2019
15. **M. Kishida**, "Encrypted control system with quantiser," *IET Control Theory & Applications*, vol. 13, pp. 146-151, 2019
14. **M. Kishida**, "On problems involving eigenvalues for uncertain matrices by structured singular values," *IEEE Transactions on Automatic Control*, vol. 62, pp. 6657-6663, 2017
13. **M. Kishida**, M. Koegel and R. Findeisen, "Combined event- and self-triggered control approach with guaranteed finite-gain L_2 stability for uncertain linear systems," *IET Control Theory & Applications*, vol. 11, pp. 1674-1683, 2017

12. **M. Kishida**, "Approaches to determining box consistent parameter sets for polytopic output constraints on linear fractional models using structured singular values," *IEEE Transactions on Automatic Control*, vol. 62, pp. 1417-1423, 2017
11. **M. Kishida**, "On computations of variance, covariance and correlation for interval data," *Mechanical Systems and Signal Processing*, vol. 84, pp. 462-468, 2017
10. S. Streif, K. Kim, P. Rumschinski, **M. Kishida**, D. E. Shen, R. Findeisen and R. D. Braatz, "Robustness analysis, prediction, and estimation for uncertain biochemical networks: An overview," *Journal of Process Control*, vol. 42, pp. 14-34, 2016
9. **M. Kishida** and R. D. Braatz, "On the analysis of the eigenvalues of uncertain matrices by μ and ν : Applications to bifurcation avoidance and convergence rates," *IEEE Transactions on Automatic Control*, vol. 61, no. 3, pp.748-753, 2016
8. **M. Kishida** and R. D. Braatz, "Optimal spatial field control for controlled release," *Optimal Control Applications & Methods*, vol.36, no. 6, pp.968-984, 2015
7. **M. Kishida** and R. D. Braatz, "Quality-by-design by skewed spherical structured singular value," *IET Control Theory & Applications*, vol.9, no. 15, pp. 2202 -2210, 2015
6. **M. Kishida** and R. D. Braatz, "Ellipsoidal bounds on state trajectories for discrete-time systems with linear fractional uncertainties," *Optimization and Engineering*, vol. 16, pp. 695-711, 2015
5. **M. Kishida**, P. Rumschinski, R. Findeisen and R. D. Braatz, "Efficient polynomial-time outer bounds on state trajectories for uncertain polynomial systems using skewed structured singular values," *IEEE Transactions on Automatic Control*, vol. 59, pp. 3063-3068, 2014
4. **M. Kishida** and R. D. Braatz, "Skewed structured singular value based approach for the construction of design spaces: theory and applications," *IET Control Theory & Applications*, vol. 8, pp. 1321-1327, 2014
3. **M. Kishida**, A. N. Ford, D. W. Pack and R. D. Braatz, "Optimal control of one-dimensional cellular uptake in tissue engineering," *Optimal Control Applications & Methods*, vol. 34, pp. 680-695, 2013
2. L. Goh, **M. Kishida** and R. D. Braatz, "On the analysis of robust stability of metabolic pathways," *IEEE Control Systems Magazine*, vol. 32, pp. 92-94, 2012
1. **M. Kishida** and R. D. Braatz, "Worst-case analysis of distributed parameter systems with application to the 2D reaction-diffusion equation," *Special Issue on Optimal Process Control, Optimal Control Applications & Methods*, vol. 31, no. 5, pp. 433-449, 2010

Refereed Conference Proceedings

57. **M. Kishida**, "Risk-aware safety verification and robustness analysis of neural network," *Proc. of IEEE Conference on Decision and Control*, 2025 to appear
56. T. Sone, M. Ogura, **M. Kishida**, "Temporal deep unrolling-based MPC for vehicle trajectory tracking," *Proc. of IEEE International Conference on Systems, Man, and Cybernetics*, 2025 to appear
55. A. Kurami, Y. Wasa, **M. Kishida**, "Vision-based mobile robot control in a floor projected mixed-reality," *Proc. of Joint 10th IFAC Symposium on Mechatronic Systems and 14th Symposium on Robotics*, 2025 to appear
54. A. R. Ibrahim, A. Cetinkaya, **M. Kishida**, "Data-driven rationalizability analysis of simple platoon games: a revealed preference view," *Proc. of European Control Conference*, 2025 to appear

53. **M. Kishida**, “Risk-aware control of discrete-time stochastic systems: Integrating Kalman filter and worst-case CVaR in control barrier functions,” *Proc. of IEEE Conference on Decision and Control*, pp.2019- 2024, 2024
52. **M. Kishida**, “Greedy synthesis of event- and self-triggered controls with control Lyapunov-barrier function,” *Proc. of IEEE Conference on Decision and Control*, pp.4467-4473, 2023
51. T. Koizumi, Y. Wasa, **M. Kishida**, “Information transfer-based topology identification of dynamic multi-agent systems,” *Proc. of IFAC World Congress*, pp.3948-3953, 2023
50. S. Patil, K. Hashimoto, **M. Kishida**, “Robust traffic flow control using signal spatio-temporal logic,” *Proc. of European Control Conference*, 2023 doi: 10.23919/ECC57647.2023.10178127
49. A. R. Ibrahim, A. Cetinkaya, **M. Kishida**, “Complexity and efficiency of Nash equilibria in noncooperative simple platoon games,” *Proc. of IEEE Conference on Decision and Control*, pp. 4449-4454, 2022
48. S. Patil, K. Hashimoto, **M. Kishida**, “Traffic Flow Control at Signalized Intersections using Signal Spatio-Temporal Logic,” *Proc. of IEEE Conference on Decision and Control*, pp. 1051-1058, 2022
47. **M. Kishida**, “Risk-aware event- and self-triggered controls by worst-case conditional value-at-risk,” *Proc. of IEEE Conference on Decision and Control*, pp. 2961-2966, 2022
46. A. R. Ibrahim, A. Cetinkaya, **M. Kishida**, “Modeling heterogeneous transportation services by two-stage congestion games,” *Proc. of European Control Conference*, pp. 2117-2123, 2022
45. S. Patil, K. Hashimoto, **M. Kishida**, “Traffic flow control at signalized intersections using signal spatio temporal logic,” *Proc. of IEEE Conference on Decision and Control*, pp. 1051-1058, 2022
44. **M. Kishida**, M. Ogura, “Temporal deep unfolding for nonlinear stochastic optimal control,” *Proc. of International Conference on Advances in Control & Optimization of Dynamical Systems*, IFAC-PapersOnLine, vol. 55, pp. 908-913, 2022
43. A. Cetinkaya, **M. Kishida**, “Nonlinear data-driven control for stabilizing periodic orbits,” *Proc. of IEEE Conference on Decision and Control*, pp.4326-4331, 2021
42. A. R. Ibrahim, A. Cetinkaya, **M. Kishida**, “Timed congestion games with application to multi-fleet platoon matching,” *Proc. of IEEE Conference on Decision and Control*, pp.1677-1682, 2021
41. **M. Kishida**, M. Ogura, “Temporal deep unfolding for nonlinear maximum hands-off control,” *Proc. of SICE Annual Conference*, Japan, pp.1007-1010, 2021
40. S. Patil, K. Hashimoto, **M. Kishida**, “Traffic flow control at signalized intersections using signal spatio temporal logic,” *Proc. of SICE International Symposium on Control Systems*, 2022 (position paper)
39. D. Weyns, B. Schmerl, **M. Kishida**, A. Leva, M. Litoiu, N. Ozay, C. Paterson and K. Tei, “Towards better adaptive systems by combining MAPE, control theory, and machine learning”, *Proc. of Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS)*, 2021
38. A. Cetinkaya and **M. Kishida**, “Impossibility results for stochastic constrained control,” *Proc. of SICE International Symposium on Control Systems*, 2A2-1, 2021 (position paper)
37. A. Cetinkaya and **M. Kishida**, “An impossibility result concerning bounded average-moment control of linear stochastic systems,” *Proc. of IFAC World Congress*, pp. 2301-2306, 2020

36. **M. Kishida**, M. Nagahara, and D. Chatterjee, "Discrete-time maximum hands-off control with minimum switches," *Proc. of IEEE Conference on Decision and Control*, pp.529-534, 2019
35. S. Kawamura, K. Cai and **M. Kishida** "Robust output regulation of networked heterogeneous linear agents by distributed internal model principle," *Proc. of IEEE Conference on Decision and Control*, pp.7301-7306, 2019
34. S. Pruekprasert, X. Zhang, J. Dubut, C. Huang and **M. Kishida**, "Decision making for autonomous vehicles at unsignalized intersection in presence of malicious vehicles," *Proc. of IEEE Intelligent Transportation Systems Conference*, Auckland, New Zealand, pp. 2299-2304, 2019
33. C. Huang, B. Li and **M. Kishida**, "Model predictive approach to integrated path planning and tracking for autonomous vehicles," *Proc. of IEEE Intelligent Transportation Systems Conference*, Auckland, New Zealand, pp. 1448-1453, 2019
32. M. Ogura, **M. Kishida** and A. Yassine, "Optimizing product development projects under asynchronous and aperiodic system-local interactions," *Proc. of International DSM Conference*, Monterey, CA, pp. 91-100, 2019
31. M. Ogura, **M. Kishida**, K. Hayashi and J. Lam, "Geometric programming for optimizing stability of distributed power control algorithms," *Proc. of SICE Annual Conference*, Hiroshima, Japan, pp.679-680, 2019
30. M. Ogura, **M. Kishida**, K. Hayashi and J. Lam, "Resource allocation for robust stabilization of Foschini-Miljanic algorithm," *Proc. of American Control Conference*, Philadelphia, PA, pp. 4030-4035, 2019
29. **M. Kishida**, "Encrypted average consensus with quantized control law," *Proc. of IEEE Conference on Decision and Control*, Miami Beach, FL, pp.5850-5856, 2018
28. R. Baba, K. Kogiso and **M. Kishida**, "Detection method of controller falsification attacks against encrypted control system," *Proc. of SICE Annual Conference*, Nara, Japan, pp. 244-248, 2018
27. **M. Kishida**, M. Barforooshan and M. Nagahara, "Maximum hands-off control for discrete-time linear systems subject to polytopic uncertainties," *Proc. of IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys)*, Groningen, Netherlands, IFAC-PapersOnLine, vol. 51, no. 23, pp. 355-360, 2018.
26. **M. Kishida**, "Event-triggered control for discrete-time nonlinear systems using state-dependent Riccati equation," *Proc. of European Control Conference*, Limassol, Cyprus, pp.1499-1504, 2018
25. **M. Kishida**, "Self-triggered control for uniform ultimate boundedness using skewed structured singular values," *Proc. of IFAC World Congress*, Toulouse, France, pp.15878-15883, 2017
24. **M. Kishida**, M. Koegel and R. Findeisen, "Event-triggered actuator signal update using self-triggered sampled data for uncertain linear systems," *Proc. of American Control Conference*, Seattle, WA, pp. 3035-3041, 2017
23. **M. Kishida**, M. Koegel and R. Findeisen, "Verifying robust forward admissibility for nonlinear systems using (skewed) structured singular values," *Proc. of IEEE Conference on Decision and Control*, Las Vegas, NV, pp. 4065-4071, 2016
22. **M. Kishida** and R. Findeisen, " μ -based approaches to determining guaranteed consistent and inconsistent parameter sets," *Proc. of IEEE Conference on Decision and Control*, Osaka, Japan, pp. 6603-6608, 2015

21. **M. Kishida** and R. D. Braatz, "Volume maximization of consistent parameter sets for linear fractional models," *Proc. of IEEE Conference on Decision and Control*, Los Angeles, CA, pp. 1905-1910, 2014
20. J. Kim, **M. Kishida** and D. G. Bates, "State bounds estimation for nonlinear systems using μ -analysis," *Proc. of IFAC World Congress*, Cape Town, South Africa, pp. 1661-1666, 2014
19. Y. Hioka and **M. Kishida**, "Direction of arrival estimation of harmonic signal using single moving sensor," *Proc. of IEEE Sensor Array and Multichannel Signal Processing Workshop*, A Coruña, Spain, pp. 1-4, 2014
18. **M. Kishida** and R. D. Braatz, "Non-existence conditions of local bifurcation for rational systems with structured uncertainties," *Proc. of American Control Conference*, Portland, OR, pp. 5085-5090, 2014
17. S. Streif, K. Kim, P. Rumschinski, **M. Kishida**, D. E. Shen, R. Findeisen and R. D. Braatz, "Robustness analysis, prediction and estimation for uncertain biochemical networks," *Proc. of IFAC Symposium on Dynamics and Control of Process Systems*, Mumbai, India, pp. 1-20, 2013. [Invited plenary paper]
16. A. Mesbah, **M. Kishida** and R. D. Braatz, "Design of multi-objective failure-tolerant control systems for infinite-dimensional systems," *Proc. of IEEE Conference on Decision and Control*, Firenze, Italy, pp. 3006-3013, 2013
15. **M. Kishida** and Y. Hioka, "Circularly moving sensor for use of modulation effect," *Proc. of International Conference on Sensing Technology*, Wellington, New Zealand, pp. 242-246, 2013
14. **M. Kishida** and R. D. Braatz, "Quality-by-Design by using the skewed spherical structured singular value," *Proc. of American Control Conference*, Washington, DC, pp. 6673 - 6678, 2013
13. **M. Kishida** and R. D. Braatz, "Inversion-based output regulation of chemotaxis using a constrained influx of chemical signaling molecules," *Proc. of American Control Conference*, Washington, DC, pp. 3443-3448, 2013 [Best presentation in session]
12. **M. Kishida** and R. D. Braatz, "A model-based approach for the construction of design spaces in Quality-by-Design," *Proc. of American Control Conference*, Montréal, Canada, pp.1513-1518, 2012
11. **M. Kishida** and R. D. Braatz, "Ellipsoid bounds on state trajectories for discrete-time systems with time-invariant and time-varying linear fractional uncertainties," *Proc. of IEEE Conference on Decision and Control and European Control Conference*, Orlando, FL, pp. 5671-5676, 2011
10. **M. Kishida**, P. Rumschinski, R. Findeisen and R. D. Braatz, "Efficient polynomial-time outer bounds on state trajectories for uncertain polynomial systems using skewed structured singular values," *Proc. of IEEE International Symposium on Computer-Aided Control System Design*, Denver, CO, pp. 216-221, 2011
9. **M. Kishida** and R. D. Braatz, "Robust anti-windup compensation for normal systems with application to the reaction-diffusion equation," *Proc. of IFAC World Congress*, Milan, Italy, pp. 7316-7321, 2011
8. K. Chen, **M. Kishida**, M. S. Strano and R. D. Braatz, "Parameter identifiability in parallel reaction networks with application to single-walled carbon nanotubes," *Proc. of American Control Conference*, San Francisco, CA, pp. 2873-2878, 2011
7. **M. Kishida** and R. D. Braatz, "Structured spatial control of the reaction-diffusion equation with parametric uncertainties," *Proc. of the IEEE International Symposium on Computer-Aided Control System Design*, Yokohama, Japan, pp. 1097-1102, 2010

6. **M. Kishida**, D. W. Pack and R. D. Braatz, “State-constrained optimal spatial field control for controlled release in tissue engineering,” *Proc. of American Control Conference*, Baltimore, MD, pp. 4361-4366, 2010
5. **M. Kishida** and R. D. Braatz, “RBF-based 2D optimal spatial control of the 3D reaction-convection-diffusion equation,” *Proc. of the European Control Conference*, Budapest, Hungary, pp. 1949-1954, 2009
4. **M. Kishida** and R. D. Braatz, “Optimal spatial field control of distributed parameter systems,” *Proc. of American Control Conference*, St. Louis, MO, pp. 32-37, 2009
3. **M. Kishida** and R. D. Braatz, “Internal model control of infinite dimensional systems,” *Proc. of IEEE Conference on Decision and Control*, Cancun, Mexico, pp. 1434-1441, 2008
2. **M. Kishida** and R. D. Braatz, “Robustness analysis of distributed parameter systems with application to the 2D reaction-diffusion equation,” *Proc. of 18th International Symposium on Mathematical Theory of Networks and Systems*, Blacksburg, VA, paper SSRussell1.4, 2008
1. **M. Kishida**, A. N. Ford, D. W. Pack and R. D. Braatz, “Optimal control of cellular uptake in tissue engineering,” *Proc. of American Control Conference*, Seattle, WA, pp. 2118-2123, 2008

Misc.

50. 芹澤和伸, 橋本和宗, 岸田昌子, 高井重昌「無線給電ドローンのための信号時相論理仕様に基づく自律誘導制御」第28回情報論的学習理論ワークショップ, 2025年
49. 曾根大雅, 小蔵正輝, 岸田昌子「条件付きバリュー・アット・リスクを用いたリスク考慮型モデル予測制御による車両軌道追従および障害物回避」第28回情報論的学習理論ワークショップ, 2025年
48. 佐藤真紀, 横山雅之, 岸田昌子「ポート・ハミルトン系に基づく核融合プラズマ輸送モデルの可制御性グラミアン解析」第68回自動制御連合講演会, 2025年
47. 宮本真菜, 和佐泰明, 岸田昌子「歩行者空間における人の行動変化を考慮した自律移動ロボット制御」第68回自動制御連合講演会, 2025年
46. 曾根大雅, 小蔵正輝, 岸田昌子「時相深層展開を用いたモデル予測制御の軌道追従制御」人工知能学会全国大会, 2025年5月
45. 倉見明日花, 和佐泰明, 岸田昌子「歩行者空間における安全走行のための自律移動ロボット制御」人工知能学会全国大会, 2025年5月
44. 橋本航, 橋本和宗, 高井重昌, 岸田昌子「Neural certificate function を用いた反復型モデル予測制御」システム制御情報学会研究発表講演会, 2025年5月
43. 宮本真菜, 和佐泰明, 岸田昌子「人込みへの注意機構を伴う自律走行ロボットの意思決定アルゴリズム」第15回横幹連合コンファレンス, 東京, 2024年12月
42. 佐藤真紀, 岸田昌子, 榊原悟, 横山雅之「ポート・ハミルトン系を用いたトカマクプラズマの状態フィードバック制御系の設計」(ポスター) 第41回プラズマ・核融合学会年会 東京, 2024年11月
41. 倉見明日花, 和佐泰明, 岸田昌子「ストーリーミング情報に基づく走行環境の複雑性を考慮したオンライン経路制御：実験環境構築と検証」第27回情報論的学習理論ワークショップ, 2024年11月
40. 橋本和宗, 橋本航, 岸田昌子, 高井重昌「信号時相論理式のベクトル埋め込みによるニューラル制御器の設計」第27回情報論的学習理論ワークショップ, 2024年11月

39. 小蔵正輝, 岸田昌子, 「深層展開を用いたモデルベース制御系設計」 システム/制御/情報, 第68巻第11号, pp. 428-433, 2024年11月
38. **M. Kishida**, S. Ono, “Introducing graph learning over polytopic uncertain graph,” (selected for oral) *Graph Signal Processing Workshop*, Delft, June 2024,
37. 菅原朔, 竹内孝, 西田知史, 原聡, 藤井慶輔, 松原崇, 谷中瞳, 岸田昌子, 大谷まゆ, 大塚淳, 丸山隆一 「信頼されない? AI #1 社会とAIの新しいつながりを考える」 人工知能学会全国大会企画セッション 2024年5月
36. 佐藤真紀, 岸田昌子, 榊原悟, 横山雅之, 「制御理論が我々にもたらしてくれるものとは?—プラズマの分布制御に向けて—」 国立研究開発法人量子科学技術研究開発機構 (QST) 原型炉研究開発共同研究統括会合, 2024年1月18日
35. 佐藤真紀, 岸田昌子, 横山雅之, 「核融合炉実現のための制御の諸課題について」 2023年度計測自動制御学会関西支部・システム制御情報学会シンポジウム, 2024年1月12日
34. 佐藤真紀, 岸田昌子, 榊原悟, 横山雅之, Study of model-based control for tokamak plasma profile, 第21回燃焼プラズマ統合コード研究会, 2023年12月21日
33. 橋本航, 橋本和宗, 和地瞭良, 沈迅, 岸田昌子, 高井重昌, 「センサデータを用いた制御バリア関数のベイズ的メタ学習」 第66回自動制御連合講演会, pp.58-62, 2023年
32. 三好健太, 和佐泰明, 岸田昌子, 「塩素多点注入動的配水網システムの数理モデリングと実時間塩素濃度制御」 第66回自動制御連合講演会, pp. 865-868, 2023年
31. 岸田昌子, 「やりたいことをやるための3つの不安解消法」, 計測と制御, 第62巻第6号, 2023
30. 小泉輝起, 和佐泰明, 岸田昌子, 「マルチエージェントシステムの制御性能改善のための移動情報量を用いたネットワーク構造推定」 計測自動制御学会制御部門マルチシンポジウム, 1PS1-17, 2023 (ポスター) (Transfer Entropy-based Topology Identification for Improving Control Performance in Dynamic Multi-agent Systems)
29. 和田弘匡, 小蔵正輝, 岸田昌子, 若宮直紀, 「制約下でのゲイン設計における深層展開のハイパーパラメータ選定について」 計測自動制御学会第10回制御部門マルチシンポジウム, pp. 2M4-1, 2023
28. 小蔵正輝, 岸田昌子, 「制御系設計のためのモデルベース機械学習: 深層展開によるアプローチ」, 電子情報通信学会ソサイエティ大会, 2022
27. P. Sagar, K. Hashimoto, **M. Kishida**, Traffic flow control using signal spatio-temporal logic, 電子情報通信学会ソサイエティ大会, 2022
26. 岸田昌子, 「サイバーフィジカルシステムのための省リソースな制御」, 日本ロボット学会誌 40(3) 21-24, 2022
25. 相澤純平, 小蔵正輝, 岸田昌子, 若宮直紀 「時相深層展開を用いたモデル予測制御の多重振り子系に対する有効性の検証」, 第66回システム制御情報学会研究発表講演会, pp. 253-3, 2022
24. 和田弘匡, 小蔵正輝, 岸田昌子, 若宮直紀 「深層展開を用いた静的出力フィードバック安定化問題におけるハイパーパラメータの考察」, 自動制御連合講演会, pp. 1F2-5, 2021
23. 岸田昌子, 小蔵正輝 「時相深層展開の提案とその非線形制御への適用」, 第24回情報論的学習理論ワークショップ, 2021
22. 小蔵正輝, 岸田昌子, 林参, 解説「大規模非負システムの幾何計画による最適設計」, 計測と制御 Vol.60 No.1, 特集「IoT時代に向けたイベントベース制御」, 2021

21. **M. Kishida**, “Event-triggered control with self-triggered sampling,” 自動制御連合講演会, 2020
20. M. Ogura, **M. Kishida**, J. Lam, “Optimization of positive linear systems via geometric programming,” Extended abstract, International Symposium on Mathematical Theory of Networks and Systems, 2020.
19. S. Pruekprasert, J. Dubut, X. Zhang, C. Huang and **M. Kishida**, “A game theoretic approach to decision making for multiple vehicles at roundabout,” late-breaking result category, IFAC World Congress, 2020.
18. 小林恒輝, 小蔵正輝, 岸田昌子, 和田山正, 杉本謙二, “深層学習を活用したフィードバック制御系設計,” システム制御情報学会研究発表講演会, pp. 276–278, 2020. (Feedback controller synthesis by deep learning techniques)
17. 小蔵正輝, 岸田昌子, J. Lam, “幾何計画による非負システムの最適設計,” 第7回計測自動制御学会制御部門マルチシンポジウム, pp. 1G2–2, 2020.
16. 小林恒輝, 小蔵正輝, 岸田昌子, 和田山正, 杉本謙二, “Neural Ordinary Differential Equationを用いた静的出力フィードバック安定化の検討,” 信学技法, vol. 119, no. 395, RCC2019-73, pp. 19–22, 2020 (Neural ordinary differential equations-based static output feedback stabilization)
15. **M. Kishida**, M. Ogura, Y. Yoshida and T. Wadayama, “Deep-learning based average consensus,” *Information-Based Induction Science Workshop*, 2019.
14. 小林恒輝, 小蔵正輝, 岸田昌子, 和田山正, 杉本謙二, “深層展開による出力フィードバック安定化の検討,” 信学技法, vol. 119, no. 270, RCC2019-65, pp. 59–62, 2019. (Deep learning-based output feedback stabilization)
13. 八木聖太, 小蔵正輝, 岸田昌子, 杉本謙二, 林和則, “公平性を担保した送信電力制御アルゴリズムのロバスト安定化,” 信学技法, vol. 119, no. 270, RCC2019-63, pp. 49–52, 2019. (Robust stabilization of transmit power control algorithm with fairness)
12. 八木聖太, 小蔵正輝, 岸田昌子, 杉本謙二, 林和則, “構造的な不確かさをもつ環境における分散送信電力制御アルゴリズムのロバスト安定化,” 無線通信システム研究会 (RCS), 2019. (Robust stabilization of distributed power control algorithms under structurally-uncertain communication environments)
11. **M. Kishida**, “Poster abstract: Encrypted control system with quantizer,” *22nd ACM International Conference on Hybrid Systems: Computation and Control*, poster, 2019.
10. 原田潤一, 小蔵正輝, 岸田昌子, 杉本謙二, “設計プロジェクトにおける追加タスクの影響を最小化するためのロバスト最適化,” 日本機械学会第28回設計工学・システム部門講演会, paper no.1101, 2018.
9. R. Baba, K. Kogiso, O. Kaneko, **M. Kishida** and K. Sawada, “Theory and applications of encrypted control systems for cyber security,” *International Workshop on Security*, poster, 2018.
8. **M. Kishida**, “Event-triggered control signal updates with self-triggered sampling for uncertain linear systems,” *SICE Annual Conference*, late breaking poster, 2016.
7. 岸田昌子, 加嶋健司, 反応移流拡散系の制御と安定性, 計測と制御, 55 (4), pp.350-355, 2016. (**M. Kishida** and K. Kashima, “Control and stability of reaction-convection-diffusion systems,” *Journal of the Society of Instrument and Control Engineers*, vol. 55, no. 4, 2016 (in Japanese))
6. 岸田昌子, 旅 : ある旅の途中の研究者の話(連載講座 機械工学は21世紀を拓けるか?(第13回)), 日本機械学会誌 116 (1137), pp. 598-600, 2013. (**M. Kishida**, *Journey*, *Journal of the Japan Society of Mechanical Engineers*, vol. 116, no. 1137, pp. 598-600, 2013 (in Japanese))

5. **M. Kishida** and R. D. Braatz (speaker), “A model-based approach for the construction of design spaces in Quality-by-Design,” *AIChE Annual Meeting*, Pittsburgh, PA, Paper265879, October 2012.
4. **M. Kishida**, D. W. Pack and R. D. Braatz (speaker), “Computer-based design for stem cell tissue engineering,” *Synthetic Biology: Building on Nature’s Inspiration, 7th Annual National Academies Keck Futures Initiative (NAKFI) Conference, The National Academies*, Irvine, California, November 19-22, 2009. (poster)
3. **M. Kishida** and R. D. Braatz, “Optimal 3D spatial field control of nonlinear spatially distributed systems with state feedback,” *IFAC Workshop on Control of Distributed Parameter Systems*, Toulouse, France, July 2009.
2. **M. Kishida**, A. N. Ford, D. W. Pack and R. D. Braatz, “Optimal control of cellular uptake in tissue engineering”, *University of Illinois Student Interdisciplinary Conference*, Urbana, IL, January 2009.
1. **M. Kishida**, A. N. Ford, D. W. Pack and R. D. Braatz, “Optimal control of cellular uptake rate in tissue scaffolds”, *AIChE Annual Meeting*, Salt Lake City, UT, Paper 96d, November 2007.

Dissertation

1. **M. Kishida**, “Robust Optimal Boundary and Spatial Field Control of Distributed Parameter Systems,” *University of Illinois at Urbana-Champaign*, 2010.

Talks

22. “Control of nonlinear stochastic system using deep unfolding,” RIMS Symposium 2024 July 9-12
21. 「数理最適化に基づく制御～モデル予測制御を中心に～」第3回数理最適化と機械学習(MOAI)研究部会 2024年3月22日 [Online]
20. “An overview of basics and recent techniques in control,” 10th US-Japan HI-Tech Industrialization Forum, October 16 [Hybrid]
19. 「制御理論における数理最適化」日本オペレーションズ・リサーチ学会研究部会「最適化の理論とアルゴリズム」RAOTA第2回研究会, 2023年9月20日国立情報学研究所
18. 「モノの動きのデザイン術 ～数学を通して見えてくるもの～」第8回 BJRF in Japan 2023年6月10日 CIC Tokyo
17. 「動きをデザインする科学 ～数学に基づく現象の理解とモノの動きの設計～」第32回 つくばサイエンスネットワーク交流会 2021年7月17日 [Online]
16. 「10年アメリカ暮らし」SICE九州支部フォーラム2020, 海外で活躍する若者たち：コロナを乗り越える留学・就職・長期滞在のノウハウ, 2020年10月18日 (講演者兼パネリスト) [Online]
15. “Computer Bugs,” Ig Nobel Prize Ceremony, 24/7 Lecture, September 2020 [Online]
14. “Structured deep neural networks for control with a recent overview of control theory,” 3rd US-Japan HI-Tech Industrialization Forum, August 2020 [Online]
13. “Encrypted control system with quantizer,” Frontier of Secure Cyber-Physical-Human System (Workshop), University of Electro-Communications, Tokyo, July, 2019
12. “Encrypted control system”, MathWorks Asia Research Summit (invitation-only event), September 8, 2018

11. “テクノロジー・トレンドと制御”, 平成30年度 国立情報学研究所 オープンハウス産官学連携セミナー, 2018年6月22日 (NII open house seminar: Technology trend and control)
10. “動きをデザインする科学ー制御屋さんのモノの見方と考え方ー”, 平成29年度 国立情報学研究所 市民講座「情報学最前線」第4回, 2017年10月18日 (NII Public Lecture series, Science of motion design - mindset of control theorists)
9. “Introduction to event- and self-triggered control”, NII Hasuo Lab seminar (ERATO MMSD Project colloquium), August 4, 2017
8. “A resource-aware strategy for networked control of uncertain linear systems”, NII Luncheon seminar, November 24, 2016
7. “Analysis of uncertain systems using μ and ν ”, University of Tsukuba, Workshop on systems management and control, December 12, 2015
6. “On some optimization problems for systems with uncertainties using μ and ν ”, Lund University, August 17, 2015
5. “On some optimization problems for systems with uncertainties using μ and ν ”, Kyoto University, August 8, 2015
4. “Quality-by-Design using the concept of robust control,” Massachusetts Institute of Technology, July 24, 2013
3. “Quality-by-Design meets with control theory,” Keio University, November 29, 2012
2. “Analysis of uncertain systems using skewed structured singular values,” University of Canterbury, March 12, 2012
1. “Optimal 3D spatial field control of spatially distributed systems” (Part 1), “Internal model control of distributed parameter systems” (Part 2), University of Tokyo, October 9, 2009.

Teaching

National Institute of Informatics

- Applied Linear Algebra (coordinator) 2024, 2023, 2022, 2021
- Control Theory and Optimization 2022, 2020, 2018
- Applied Linear Algebra (co-teaching) 2020, 2019
- Scientific Presentation(co-teaching) 2019
- Scientific Writing (co-teaching) 2019
- Optimization Theory 2016

University of Canterbury

- ENEL 321: Control Systems (course coordinator, co-teaching) 2015[S1], 2014[S1], 2013[S1]
- ENEL 220: Circuits and Systems (co-teaching) 2015[S1], 2014[S2], 2013[S2]
- ENMT 301: Mechatronics System Design (co-teaching) 2014[W]
- ENEL 400: 3rd Pro Project (supervision) 2014[W], 2013[W]
- ENEL 220: Circuits and Systems (co-teaching) 2013[S2]

University of Illinois at Urbana-Champaign

- ChBE 594: Systems Engineering (Graduate Teaching Assistant) Spring 2009
- ChBE 523: Analysis of Transport Phenomena (Graduate Teaching Assistant) Spring 2008
- Calculus and Physics (Tutor at Division of Intercollegiate Athletics) 2006