Masako Kishida

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Affiliations

National Institute of Informatics — Tokyo, Japan
Associate Professor — 2016–present

The Graduate University for Advanced Studies, SOKENDAI — Tokyo, Japan
Associate Professor — 2016–present

Osaka University — Osaka, Japan
Guest Associate Professor — 2021–2023

The Otto-von-Guericke Universität Magdeburg — Magdeburg, Germany
Humboldt Research Fellow — 2015–2016

University of Canterbury — Christchurch, New Zealand
Lecturer — 2013–2015

The University of Tokyo — Tokyo, Japan
Assistant Professor — 2012

The University of Tokyo — Tokyo, Japan
Project Researcher — 2012

Massachusetts Institute of Technology — Cambridge, MA
Visiting Scholar — 2010–2012

University of Illinois at Urbana-Champaign — Urbana, IL
Postdoctoral Research Associate — 2010–2012

Education

University of Illinois at Urbana-Champaign — Urbana, IL
Ph.D., Mechanical Engineering — 2010

- Thesis: "Robust Optimal Boundary and Spatial Field Control of Distributed Parameter Systems"

The University of Michigan, Ann Arbor — Ann Arbor, MI
M.S.E., Aerospace Engineering — 2006

The University of Michigan, Ann Arbor — Ann Arbor, MI
M.S., Applied and Interdisciplinary Mathematics — 2006

The University of Michigan, Ann Arbor — Ann Arbor, MI
B.S.E., Aerospace Engineering with minor in Mathematics — 2004

Honors, Awards and Interdisciplinary Meetings

- Participant, 5th ERCIM/JST Joint Workshop 2024
- General participant, 16th Japan-America Frontiers of Engineering Symposium 2023
  (日米先端工学（JAFoE）シンポジウム参加研究者)
- The Young Scientists' Prize, The Commendation for Science and Technology by MEXT 2020
  (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)
- Telecom System Technology Award, The Telecommunications Advancement Foundation 2019
  (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)
- Discussant, 2nd JSPS Japanese-American-German Frontiers of Science Symposium 2019
  (第2回日米独先端科学（JAGFoS）シンポジウム参加研究者)
- IEEE Senior Member 2018
- 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)

- Strategic Research Projects, Research Organization of Information and Systems 2024-2025
  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)
- PRESTO, Japan Science and Technology Agency 2022-2026
  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)
- CREST, Japan Science and Technology Agency (Lead Joint Researcher) 2020-2026
  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)
- Travel Grant, Tateisi Foundation 2018
  (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)
- Research Grant, Okawa Foundation 2017
  (公益財団法人大川情報通信基金 2017年度研究助成)
- Grant-in-Aid for Research Activity Start-up, Japan Society for the Promotion of Science (16H07412) 2016
  (日本学術振興会平成28年度研究活動スタート支援)
- International Aid, Yazaki Memorial Foundation for Science and Technology 2016
  (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))
- 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 –
- IEEE Transactions on Automatic Control, Associate Editor 2024 –present
- Frontiers in Control Engineering, Review Editor 2022 –present
- IET Control Theory & Applications 2020 –present
- IEEE Control Systems Society Conference 2018 –present

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

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ト制御調査研究会 (2018-2019), SICE Research Committee on Fusion of Machine Learning and Dynamics in Model-Based Control モデルベースト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

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*, to appear

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*, to appear

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, 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

52. **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.4467-4473, 2024

51. **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

50. 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

49. 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

48. 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

47. 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

46. **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

45. 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

44. 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

43. **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

42. A. Cetinkaya, **M. Kishida**, "Nonlinear data-driven control for stabilizing periodic orbits," *Proc. of IEEE Conference on Decision and Control*, pp.4326-4331, 2021

41. 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

40. **M. Kishida**, M. Ogura, "Temporal deep unfolding for nonlinear maximum hands-off control," *Proc. of SICE Annual Conference*, Japan, pp.1007-1010, 2021

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

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.

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

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37. **M. Kishida**, S. Ono, "Introducing graph learning over polytopic uncertain graph," (selected for oral) *Graph Signal Processing Workshop*, Delft, June 2024,

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ー」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

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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

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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

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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

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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)

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15. **M. Kishida**, M. Ogura, Y. Yoshida and T. Wadayama, "Deep-learning based average consensus," *Information-Based Induction Science Workshop*, 2019.

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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))

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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：コロナを乗り切る留学・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・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－制御屋さんのモノの見方と考え方－ ”, 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