

Yongxin Chen

CONTACT INFORMATION

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PROFESSIONAL APPOINTMENTS

Associate Professor

School of Aerospace Engineering, Machine Learning Center, Institute for Robotics and Intelligent Machines, Georgia Institute of Technology, 2023 - Present.

Assistant Professor

School of Aerospace Engineering, Machine Learning Center, Institute for Robotics and Intelligent Machines, Georgia Institute of Technology, 2018 - 2023.

Assistant Professor

Department of Electrical and Computer Engineering, Iowa State University, 2017 - 2018.

Research Fellow

Memorial Sloan Kettering Cancer Center (MSKCC), New York, 2016 - 2017.

EDUCATION

PhD in Mechanical Engineering

University of Minnesota, Minneapolis, 2011 - 2016.

Thesis: *Modeling and control of collective dynamics: from Schrödinger bridges to optimal mass transport*

Advisor: Prof. **Tryphon T. Georgiou**.

Minor: **Mathematics**

BS in Mechanical Engineering

Shanghai Jiao Tong University, Shanghai, China, 2007 - 2011.

HONORS AND AWARDS

1. Manfred Thoma Medal for Outstanding Contributions by a Young Researcher and/or Engineer Under the Age of 40 to the Field of Systems and Control, 2026
2. SIGEST Paper Award, Society for Industrial and Applied Mathematics (SIAM), 2025
3. Semi-Plenary Speaker, International Symposium on Mathematical Theory of Networks and Systems, 2024
4. Plenary Speaker, American Control Conference, 2023
5. *SIAM Activity Group on Control and System Theory Best Paper Award*, SIAM Journal on Control and Optimization, 2023, "Multimarginal Optimal Transport with a Tree-Structured Cost and the Schrödinger Bridge Problem."
6. *Donald P. Eckman Award* for Outstanding Young Engineer in the Field of Automatic Control, 2022.
7. *A.V. 'Bal' Balakrishnan Award* for Excellence in Scientific Research in the Mathematics of Systems, 2021.

8. Simons-Berkeley Research Fellowship, 2021.
9. NSF CAREER Award, 2020.
10. *George S. Axelby Best Paper Award*, IEEE Transactions on Automatic Control, 2017, “Optimal steering of a linear stochastic system to a final probability distribution, Part I.”
11. Doctoral Dissertation Fellowship (DDF), University of Minnesota, 2015-2016.

JOURNAL PAPERS
(ACCEPTED)

1. J. Liang, and Y. Chen. “Proximal Oracles for Optimization and Sampling,” *Journal of Optimization Theory and Applications*, 2026.
2. Z. Liu, and Y. Chen. “Data-driven Adversarial Online Control for Unknown Linear Systems,” *Systems & Control Letters*, 2025.
3. Z. Liu, S. Jafarpour, and Y. Chen. “Probabilistic Reachability Analysis of Stochastic Control Systems,” *IEEE Transactions on Automatic Control*, **70** (11), pp. 7080 - 7094, 2025.
4. K. Hoshino, H. Yu, T. Tanaka, and Y. Chen. “Path Integral Control of Partially Observed Systems via Fully Observable Control Approximations,” *Systems & Control Letters*, 2025.
5. Z. Chang, H. Yu, P. Vela, and Y. Chen. “Efficient Iterative Proximal Variational Inference Motion Planning,” *Robotics and Autonomous Systems*, 2025.
6. L. Ma, Z. Liu, H. Yu, and Y. Chen. “Verification of Stochastic Systems Under Signal Temporal Logic Specifications,” *IEEE Control Systems Letters*, 2025.
7. Y. Chen, T. T. Georgiou, and M. Pavon. “Optimal Survival Strategies for Diffusive Flows: A Schrodinger Bridge Approach to Unbalanced Transport,” *SIAM Review*, **67** (3), pp. 579 - 604, 2025.
8. B. Yuan, J. Fan, J. Liang, and Y. Chen. “Client-only Distributed Markov Chain Monte Carlo Sampling over a Network,” *Transactions on Machine Learning Research*, 2025.
9. Z. Liu, S. Jafarpour, and Y. Chen. “Safety Verification of Stochastic Systems: A Set-Erosion Approach,” *IEEE Control Systems Letters*, **8**, pp.2859 - 2864, 2024.
10. Y. Chen. “Density Control of Interacting Agent Systems,” *IEEE Transactions on Automatic Control*, **69** (1), pp. 246 - 260, 2024.
11. A. Ringh, I. Haasler, Y. Chen, and J. Karlsson. “Graph-structured tensor optimization for nonlinear density control and mean field games,” *SIAM Journal on Control and Optimization*, **62** (4), pp. 2176 - 2202, 2024.
12. I. Haasler, A. Ringh, Y. Chen, and J. Karlsson. “Scalable Computation of Dynamic Flow Problems via Multi-marginal Graph-structured Optimal Transport,” *Mathematics of Operation Research*, **49** (2), pp. 986 - 1011, 2024.
13. R. Fu, O. M. Miangolarra, A. Taghvaei, Y. Chen, and T. T. Georgiou. “Stochastic thermodynamic engines under time-varying temperature profile,” *Automatica*, **159**, p. 111361, 2024.

14. A. Ringh, I. Haasler, Y. Chen, and J. Karlsson. “Mean field type control with species dependent dynamics via structured tensor optimization,” *IEEE Control Systems Letters*, **7**, pp.2898 - 2903, 2023.
15. H. Yu, and Y. Chen. “A Gaussian Variational Inference Approach to Motion Planning,” *IEEE Robotics and Automation Letters*, **8** (5), pp.2518 - 2525, 2023.
16. J. Fan, S. Liu, S. Ma, H. Zhou, and Y. Chen “Neural Monge Map estimation and its applications,” *Transactions on Machine Learning Research*, 2023.
17. B. Yuan, J. Fan, Y. Wang, M. Tao, and Y. Chen. “Markov Chain Monte Carlo for Gaussian: A Linear Control Perspective,” *IEEE Control Systems Letters*, **7**, pp.2173 - 2178, 2023.
18. J. Moyalan, Y. Chen, and U. Vaidya. “Convex Approach to Data-driven Off-road Navigation via Linear Transfer Operators,” *IEEE Robotics and Automation Letters*, **8** (6), pp.3278 - 3285, 2023.
19. J. Liang, and Y. Chen. “A Proximal Algorithm for Sampling,” *Transactions on Machine Learning Research*, 2023.
20. A. Teter, Y. Chen, and A. Halder. “On the Contraction Coefficient of the Schrödinger Bridge for Stochastic Linear Systems,” *IEEE Control Systems Letters*, **7**, pp.3325 - 3330, 2023.
21. R. Singh, and Y. Chen. “Signed Graph Neural Networks: A Frequency Perspective,” *Transactions on Machine Learning Research*, 2023.
22. Q. Zhang, A. Taghvaei, and Y. Chen. “An optimal control approach to particle filtering,” *Automatica*, **151**, pp.110894, 2023.
23. J. Moyalan, H. Choi, Y. Chen, and U. Vaidya. “Data-driven Optimal Control via Linear Transfer Operators: A Convex Approach,” *Automatica*, **150**, pp.110841, 2023.
24. J. V. Siches, O. M. Miangolarra, A. Taghvaei, Y. Chen, and T. T. Georgiou. “Inertialess Gyration Engines,” *PNAS Nexus*, **1** (5), pp. pgac251, 2022.
25. R. Singh, Q. Zhang, and Y. Chen. “Learning Hidden Markov Models from Aggregate Observations,” *Automatica*, **137**, pp.110100, 2022.
26. B. Yuan, Q. Zhang, and Y. Chen. “An optimal control approach to particle filtering on Lie groups,” *IEEE Control Systems Letters*, **7**, pp.1195 - 1200, 2022.
27. R. Singh, I. Haasler, Q. Zhang, J. Karlsson, and Y. Chen. “Inference with Aggregate Data in Probabilistic Graphical Models: An Optimal Transport Approach,” *IEEE Trans. Automat. Control*, **67** (9), pp. 4483 - 4497, 2022.
28. F. Ariaei, Z. Askarzadeh, Y. Chen, and T. T. Georgiou. “Macroscopic network circulation for planar graphs,” *IEEE Transactions on Control of Network Systems*, **9** (4), pp. 1840 - 1850, 2022.
29. R. Singh, and Y. Chen. “Learning Gaussian Hidden Markov Models from Aggregate Data,” *IEEE Control Systems Letters*, **6**, pp. 478 - 483, 2022.
30. R. Singh, Q. Zhang, and Y. Chen. “Inference of Aggregate Hidden Markov Models with Continuous Observations,” *IEEE Control Systems Letters*, **6**, pp. 2377 - 2382, 2022.

31. H. Yu, J. Moyalan, U. Vaidya, and Y. Chen. “Data-Driven Optimal Control of Non-linear Dynamics Under Safety Constraints,” *IEEE Control Systems Letters*, **6**, pp. 2240 - 2245, 2022.
32. Y. Chen, T. T. Georgiou, and M. Pavon. “The most likely evolution of diffusing and vanishing particles: Schrödinger Bridges with unbalanced marginals,” *SIAM Journal on Control and Optimization*, **60** (4), pp.2016 - 2039, 2022.
33. W. Haddad, Y. Chen, and M. Lanchares. “Mixed Norm H_2/H_∞ and Entropy Covariance Control: A Convex Optimization Approach,” in *International Journal of Control*, **95** (4), pp. 985 - 995, 2022.
34. Y. Chen, and V. Gupta. “Toll Design for Routing Games with Stochastic Demands,” *IEEE Control Systems Letters*, **6**, pp. 3445 – 3450, 2022.
35. O.M. Miangolarra, A. Taghvaei, Y. Chen, and T. T. Georgiou. “Geometry of Finite-Time Thermodynamic Cycles with Anisotropic Thermal Fluctuations,” *IEEE Control Systems Letters*, **6**, pp. 3409 – 3414, 2022.
36. I. Haasler, Y. Chen, and J. Karlsson. “Optimal Steering of Ensembles with Origin-Destination Constraints,” *IEEE Control Systems Letters*, **5** (3), pp. 881 - 886, 2021.
37. R. Singh, I. Haasler, Q. Zhang, J. Karlsson, and Y. Chen. “Incremental inference of collective graphical models,” *IEEE Control Systems Letters*, **5** (2), pp. 421 -426, 2021.
38. Y. Chen, T. T. Georgiou, and M. Pavon. “Controlling Uncertainty,” *IEEE Control Systems Magazine*, **41** (4), pp. 82 -94, 2021.
39. V. Ciccone, Y. Chen, T. T. Georgiou, and M. Pavon. “Regularized transport between singular covariance matrices”, *IEEE Trans. Automat. Control*, **66** (7), pp. 3339-3346, 2021.
40. W. Chen, D. Wang, J. Liu, Y. Chen, SZ. Khong, T. Basar, KH. Johansson, and L. Qiu. “On Spectral Properties of Signed Laplacians with Connections to Eventual Positivity,” *IEEE Trans. Automat. Control*, **66** (5), pp. 2177-2190, 2021.
41. Y. Chen, T. T. Georgiou, and M. Pavon. “Stochastic control liaisons: Richard Sinkhorn meets Gaspard Monge on a Schrödinger bridge,” *SIAM Review*, **63** (2), pp. 249 - 313, 2021.
42. I. Haasler, R. Singh, Q. Zhang, J. Karlsson, and Y. Chen. “Multi-marginal Optimal Transport and Probabilistic Graphical Models,” *IEEE Transactions on Information Theory*, **67** (7), pp. 4647 - 4668, 2021.
43. I. Haasler, A. Ringh, Y. Chen, and J. Karlsson. “Multi-marginal optimal transport with a tree-structured cost and the Schrödinger bridge problem,” *SIAM Journal on Control and Optimization*, **59** (4), 2428 - 2453, 2021, **Best Paper Award**.
44. A. Taghvaei, O. M. Miangolarra, R. Fu, Y. Chen, and T. T. Georgiou. “On the relation between information and power in stochastic thermodynamic engine,” *IEEE Control Systems Letters*, **6**, pp. 434 - 439, 2021.
45. O. M. Miangolarra, A. Taghvaei, R. Fu, Y. Chen, and T. T. Georgiou. “Underdamped stochastic thermodynamic engines in contact with a heat bath with arbitrary temperature profile,” *Physical Review E*, **103**, p. 062103, 2021.

46. O. M. Miangolarra, A. Taghvaei, R. Fu, Y. Chen, and T. T. Georgiou. “Energy harvesting from anisotropic fluctuations ,” *Physical Review E*, **104**, p. 044101, 2021.
47. R. Fu, A. Taghvaei, Y. Chen, and T. T. Georgiou. “Maximal Power Output of a Stochastic Thermodynamic Engine,” *Automatica*, **123**, p. 109366, 2021.
48. J. Kim, A. Taghvaei, Y. Chen, and P. G. Mehta. “Feedback Particle Filter for Collective Inference,” *Foundations of Data Science*, **3** (3), pp. 543-561, 2021.
49. Y. Chen, T. T. Georgiou, and M. Pavon. “Optimal Transport in Systems and Control,” *Annual Review of Control, Robotics, and Autonomous Systems*, **4**, pp. 89 - 113, 2021.
50. Y. Chen, T. T. Georgiou, M. Pavon, and A. Tannenbaum. “Relaxed Schrödinger bridges and robust network routing,” *IEEE Transactions on Control of Network Systems*, **7** (2), pp. 923 - 931, 2020.
51. Y. Chen, W. Gangbo, T. T. Georgiou, and A. Tannenbaum. “On the matrix Monge-Kantorovich problem,” *European Journal of Applied Mathematics*, **31** (4), pp. 574 - 600, 2020.
52. Y. Chen, T. T. Georgiou, and A. Tannenbaum. “Stochastic control and non-equilibrium thermodynamics: fundamental limits,” *IEEE Trans. Automat. Control*, **65** (7), pp. 2979 - 2991, 2020.
53. S. Lu, I. Tsaknakis, M. Hong and Y. Chen. “Hybrid Block Successive Approximation for One-Sided Non-Convex Min-Max Problems: Algorithms and Applications,” *IEEE Trans. Signal Processing*, **68**, pp. 3676 - 3691, 2020.
54. Y. Chen, T. T. Georgiou, and A. Tannenbaum. “Interpolation of Matrices and Matrix-Valued Measures: The Unbalanced Case,” *European Journal of Applied Mathematics*, **30** (3), pp. 458 - 480, 2019.
55. H. Farooq, Y. Chen, T.T. Georgiou, A. Tannenbaum, and C. Lenglet. “Network Curvature as a Hallmark of Brain Structural Connectivity,” *Nature Communications*, **10** (1), pp. 1 - 11, 2019.
56. Z. Askarzadeh, R. Fu, A. Halder, Y. Chen, and T.T. Georgiou. “Stability theory of stochastic models in opinion dynamics,” *IEEE Trans. Automat. Control*, **65** (2), pp. 522 - 533, 2019.
57. Y. Chen, J. Karlsson, and T. T. Georgiou. “The role of the time-arrow in mean-square estimation of stochastic processes,” *IEEE Control Systems Letters*, **2** (1), pp. 85 - 90, 2018.
58. K. Yamamoto, Y. Chen, L. Ning, T. T. Georgiou and A. Tannenbaum “Regularization and Interpolation of Positive Matrices,” *IEEE Trans. Automat. Control*, **63** (4), pp. 1208 -1212, 2018.
59. Y. Chen, T. T. Georgiou, and A. Tannenbaum. “Matrix Optimal Mass Transport: a Quantum Mechanical Approach,” *IEEE Trans. Automat. Control*, **63** (8), pp. 2612 - 2619, 2018.
60. Y. Chen, T. T. Georgiou, M. Pavon, and A. Tannenbaum “Efficient-Robust Routing for Single Commodity Network Flows,” *IEEE Trans. Automat. Control*, **63** (7), pp. 2287 - 2294, 2018.

61. Y. Chen, T. T. Georgiou, and M. Pavon. "Optimal steering of a linear stochastic system to a final probability distribution, part III," *IEEE Trans. Automat. Control*, **63** (9), pp. 3112 - 3118, 2018.
62. Y. Chen, and J. Karlsson. "State tracking of linear ensembles via optimal mass transport," *IEEE Control Systems Letters*, **2** (2), pp. 260 - 265, 2018.
63. E. K. Ryu, Y. Chen, W. Li, and S. Osher. "Vector and Matrix Optimal Mass Transport: Theory, Algorithm, and Applications," *SIAM Journal of Scientific Computing*, **40** (5), A3675-A3698, 2018.
64. Y. Chen, G. Conforti, and T.T. Georgiou. "Measure-valued spline curves: an optimal transport viewpoint," *SIAM Journal of Mathematical Analysis*, **50** (6), pp. 5947 - 5968, 2018
65. Y. Chen, T. T. Georgiou, and A. Tannenbaum. "Vector-valued Optimal Mass Transport," *SIAM Journal on Applied. Math*, **78** (3), pp. 1682 -1696, 2018.
66. Y. Chen, T.T. Georgiou, and M. Pavon. "Steering the Distribution of Agents in Mean-Field Games System," *Journal of Optimization Theory and Applications*, **179** (1), pp. 332 - 357, 2018.
67. Y. Chen, T.T. Georgiou, and A. Tannenbaum. "Optimal transport for Gaussian mixture models," *IEEE Access*, **7**, pp. 6269 - 6278, 2018.
68. Y. Chen, E. Haber, K. Yamamoto, T. T. Georgiou, and A. Tannenbaum. "An efficient algorithm for matrix-valued and vector-valued optimal mass transport," *Journal of Scientific Computing*, **77** (1), pp. 79 - 100, 2018.
69. A. Zare, Y. Chen, M. R. Jovanović and T. T. Georgiou. "Low-complexity modeling of partially available second-order statistics via matrix completion," *IEEE Trans. Automat. Control*, **62** (2), pp. 1368 - 1383, 2017.
70. Y. Chen, T. T. Georgiou, and M. Pavon. "Optimal transport over a linear dynamical system," *IEEE Trans. Automat. Control*, **62** (5), pp. 2137 - 2152, 2017.
71. Y. Chen, T. T. Georgiou, M. Pavon, and A. Tannenbaum. "Robust transport over networks," *IEEE Trans. Automat. Control*, **62** (9), pp. 4675 - 4682, 2017.
72. Y. Chen, T. T. Georgiou, L. Ning, and A. Tannenbaum. "Matricial Wasserstein-1 Distance," *IEEE Control Systems Letters*, **1** (1), pp. 14 - 19, 2017.
73. Y. Chen, F. D. Cruz, R. Sandhu, A. Kung, P. Mundi, J. Deasy, and A. Tannenbaum "Pediatric Sarcoma Data Forms a Unique Cluster Measured via the Earth Mover's Distance," *Scientific Reports* **7**, article number: 7035, 2017.
74. Y. Chen, T. T. Georgiou. "Stochastic bridges of linear systems," *IEEE Trans. Automat. Control*, **61** (2), pp. 526-531, 2016.
75. Y. Chen, T. T. Georgiou, and M. Pavon. "Optimal steering of a linear stochastic system to a final probability distribution, part I," *IEEE Trans. Automat. Control*, **61** (5), pp. 1158-1169, 2016. **George S. Axelby Best Paper Award.**
76. Y. Chen, T. T. Georgiou, and M. Pavon. "Optimal steering of a linear stochastic system to a final probability distribution, part II," *IEEE Trans. Automat. Control*, **61** (5), pp. 1170-1180, 2016.

77. Y. Chen, T. T. Georgiou, and M. Pavon. “On the relation between optimal transport and Schrödinger bridges: A stochastic control viewpoint,” *Journal of Optimization Theory and Applications*, **169** (2), pp. 671-691, 2016.
78. Y. Chen, T. T. Georgiou, and M. Pavon. “Entropic and displacement interpolation: a computational approach using the Hilbert metric,” *SIAM Journal on Applied. Math.*, **76** (6), pp. 2375-2396, 2016.
79. Y. Chen, T. T. Georgiou, and M. Pavon. “Fast cooling for a system of stochastic oscillators,” *Journal of Mathematical Physics*, **56** (11), p. 113302, 2015.

MACHINE
LEARNING
CONFERENCES

1. B. Yuan, J. Fan, J. Liang, and Y. Chen. “Proximal Sampler with Adaptive Step Size,” *28th International Conference on Artificial Intelligence and Statistics*, 2025.
2. W. Guo, M. Tao, and Y. Chen. “Provable Benefit of Annealed Langevin Monte Carlo for Non-log-concave Sampling,” *13th International Conference on Learning Representations*, 2025.
3. J. Choi, Y. Chen, and J. Choi. “Improving Neural Optimal Transport via Displacement Interpolation,” *13th International Conference on Learning Representations*, 2025.
4. K. Zheng, Y. Chen, H. Mao, M. Liu, J. Zhu, and Q. Zhang. “Masked Diffusion Models are Secretly Time-Agnostic Masked Models and Exploit Inaccurate Categorical Sampling,” *13th International Conference on Learning Representations*, 2025.
5. J. Fan, H. Xue, Q. Zhang, and Y. Chen. “RefDrop: Controllable Consistency in Image or Video Generation via Reference Feature Guidance,” *2024 Conference on Neural Information Processing Systems*, 2024.
6. Y. Chen, H. Xue, and Y. Chen. “Diffusion Policy Attacker: Crafting Adversarial Attacks for Diffusion-based Policies,” *2024 Conference on Neural Information Processing Systems*, 2024.
7. A. Mete, H. Xue, A. Wilcox, Y. Chen, and A. Garg. “QueST: Self-Supervised Skill Abstractions for Learning Continuous Control,” *2024 Conference on Neural Information Processing Systems*, 2024.
8. U. Mishra, Y. Chen, and D. Xu. “Generative Factor Chaining: Coordinated Manipulation with Diffusion-based Factor Graph,” *2024 Conference on Robot Learning*, 2024.
9. H. Xue, C. Liang, X. Wu, and Y. Chen. “Toward Effective Protection Against Diffusion Based Mimicry through Score Distillation,” *12th International Conference on Learning Representations*, 2024.
10. H. Xue, A. Araujo, B. Hu, and Y. Chen. “Diffusion-Based Adversarial Sample Generation for Improved Stealthiness and Controllability,” *2023 Conference on Neural Information Processing Systems*, 2023.
11. U. Mishra, S. Xue, Y. Chen, and D. Xu. “Generative Skill Chaining: Long-Horizon Skill Planning with Diffusion Models,” *2023 Conference on Robot Learning*, 2023.
12. J. Fan, B. Yuan, and Y. Chen. “Improved Dimension Dependence of a Proximal Algorithm for Sampling,” *36th Annual Conference on Learning Theory*, 2023.
13. B. Yuan, J. Fan, J. Liang, A. Wibisono, and Y. Chen. “On a Class of Gibbs Sampling over Networks,” *36th Annual Conference on Learning Theory*, 2023.

14. J. Song, Q. Zhang, H. Yin, M. Mardani, M. Liu, J. Kautz, Y. Chen, and A. Vahdat. “Loss-Guided Diffusion Models for Plug-and-Play Controllable Generation,” *40th International Conference on Machine Learning*, 2023.
15. Q. Zhang, J. Song, X. Huang, Y. Chen, and M. Liu. “DiffCollage: Parallel Generation of Large Content with Diffusion Models,” *Conference on Computer Vision and Pattern Recognition*, 2023.
16. Qinsheng Zhang, Yongxin Chen. “Fast sampling of diffusion models with exponential integrator,” *Eleventh International Conference on Learning Representations*, 2023.
17. Qinsheng Zhang, Molei Tao, Yongxin Chen. “gDDIM: Generalized denoising diffusion implicit models,” *Eleventh International Conference on Learning Representations, Spotlight*, 2023.
18. Y. Chen, S. Chewi, A. Salim, and A. Wibisono. “Improved analysis for a proximal algorithm for sampling,” in *The 35th Annual Conference on Learning Theory*, London, UK, 2022.
19. J. Fan, Q. Zhang, A. Taghvaei, and Y. Chen. “Variational Wasserstein gradient flow,” in *Thirty-ninth International Conference on Machine Learning*, Baltimore, MD, 2022.
20. Q. Zhang, and Y. Chen. “Path Integral Sampler: a stochastic control approach for sampling,” *Tenth International Conference on Learning Representations*, 2022.
21. J. Fan, I. Haasler, J. Karlsson, and Y. Chen. “On the complexity of the optimal transport problem with graph-structured cost,” *25th International Conference on Artificial Intelligence and Statistics*, 2022.
22. Q. Zhang, and Y. Chen. “Diffusion Normalizing Flow,” *2021 Conference on Neural Information Processing Systems*, Online, 2021.
23. J. Fan, A. Taghvaei, and Y. Chen. “Scalable Computations of Wasserstein Barycenter via Input Convex Neural Networks,” in *Thirty-eighth International Conference on Machine Learning, Long talk*, Online, 2021.
24. Y. Zhang, Q. Cai, Z. Yang, Y. Chen, and Z. Wang. “Can Temporal-Difference and Q-Learning Learn Representation? A Mean-Field Theory”, in *2020 Conference on Neural Information Processing Systems, Oral*, Vancouver, Canada, 2020.
25. Z. Fu, Z. Yang, Y. Chen, and Z. Wang. “Actor-Critic Provably Finds Nash Equilibria of Linear-Quadratic Mean-Field Games” in *International Conference on Learning Representations 2020*, Addis Ababa, Ethiopia, 2020.
26. Z. Yang, Y. Chen, M. Hong, and Z. Wang. “Provably Global Convergence of Actor-Critic: A Case for Linear Quadratic Regulator with Ergodic Cost” in *2019 Conference on Neural Information Processing Systems*, Vancouver, Canada, 2019.

OTHER
CONFERENCES
(SELECTED)

1. U. Mishra, and Y. Chen. “Reorientdiff: Diffusion model based reorientation for object manipulation,” *IEEE International Conference on Robotics and Automation*, 2024.
2. J. Fan, B. Yuan, J. Liang, and Y. Chen. “Nesterov smoothing for sampling without smoothness,” *62nd IEEE Conference on Decision and Control*, 2023.
3. D. Adu, and Y. Chen. “Stochastic Bridges over Ensemble of Linear Systems,” *62nd IEEE Conference on Decision and Control*, 2023.

4. H. Yu, J. Moyalan, U. Vaidya, and Y. Chen. “Data-Driven Optimal Control under Safety Constraints Using Sparse Koopman Approximation,” *IEEE International Conference on Robotics and Automation*, 2023.
5. J. Liang, and Y. Chen. “A Proximal Algorithm for Sampling from Non-smooth Potentials,” *Winter Simulation Conference*, Singapore, 2022.
6. J. Moyalan, Y. Chen, and U. Vaidya. “Navigation with Probabilistic Safety Constraints: A Convex Formulation,” *American Control Conference*, Atlanta, GA, 2022.
7. R. Singh, K. Lee, and Y. Chen. “Sample-based distributional policy gradient,” *4th Learning for dynamics & control conference*, Stanford, 2022.
8. R. Singh, and Y. Chen “Inference of collective Gaussian hidden Markov models,” *60th IEEE Conference on Decision and Control*, Online, 2021.
9. A. Ringh, I. Haasler, Y. Chen, and J. Karlsson “Efficient computations of multi-species mean field games via graph-structured optimal transport,” *60th IEEE Conference on Decision and Control*, Online, 2021.
10. H. Yu, J. Moyalan, D. Tellez-Castro, U. Vaidya, and Y. Chen. “Convex Optimal Control Synthesis Under Safety Constraints,” *60th IEEE Conference on Decision and Control*, Online, 2021.
11. J. Moyalan, H. Choi, Y. Chen, and U. Vaidya “Sum of Squares based Convex Approach for Optimal Control Synthesis,” *29th Mediterranean Conference on Control and Automation*, Online, 2021.
12. Y. Chen, T. T. Georgiou, and M. Pavon. “Fast and Asymptotic Steering to a Steady State for Networks Flows,” *5th International Conference on Geometric Science of Information*, 2021.
13. R. Fu, O. M. Miangolarra, A. Taghvaei, Y. Chen, and T. T. Georgiou. “Harvesting energy from a periodic heat bath,” in *59th IEEE Conference on Decision and Control*, Online, 2020.
14. R. Singh, Q. Zhang, and Y. Chen. “Improving Robustness via Risk Averse Distributional Reinforcement Learning”, in *2nd Learning for dynamics & control conference*, Berkeley, 2020.
15. Z. Yi, Z. Cao, E. Theodorou, and Y. Chen. “Nonlinear Covariance Control via Differential Dynamic Programming”, in *2020 American Control Conference*, Denver, CO, 2020.
16. W. Haddad, Y. Chen, and M. Lanchares. “Mixed Norm H_2/H_∞ and Entropy Covariance Control: A Convex Optimization Approach”, in *2020 American Control Conference*, Denver, CO, 2020.
17. S. Lu, R. Singh, X. Chen, Y. Chen, and M. Hong. “Alternating Gradient Descent Ascent for Nonconvex-strongly-concave Min-Max Optimization” in *53rd Asilomar Conference on Signals, Systems and Computers*, Asilomar, USA, 2019.
18. Y. Chen, T. T. Georgiou, and M. Pavon. “Covariance Steering in Zero-Sum Linear-Quadratic Two-Player Differential Games” in *58th IEEE Conference on Decision and Control*, Nice, France, 2019.

19. I. Haasler, A. Ringh, Y. Chen, and J. Karlsson. “Estimating Ensemble Flows on a Hidden Markov Chain” in *58th IEEE Conference on Decision and Control*, Nice, France, 2019.
20. D. Alpag0, Y. Chen, T. T. Georgiou, and M. Pavon. “On optimal steering of a non-Markovian Gaussian process” in *58th IEEE Conference on Decision and Control*, Nice, France, 2019.
21. Y. Chen, G. Conforti, T.T. Georgiou, and L. Ripani. “Multi-marginal Schrödinger bridges” in *4th conference on Geometric Science of Information*, Toulouse, France, 2019.
22. Y. Chen, and U. Vaidya. “Sample Complexity for Nonlinear Stochastic Dynamics” in *2019 American Control Conference*, Philadelphia, PA, 2019.
23. Z. Askarzadeh, R. Fu, A. Halder, Y. Chen, and T.T. Georgiou. “Stability Analysis of Opinion Dynamics Over Influence Networks” in *2019 American Control Conference*, Philadelphia, PA, 2019.
24. Y. Chen, T. T. Georgiou, and M. Pavon. “Steering the Distribution of Agents in Mean-Field Games” in *57th IEEE Conference on Decision and Control*, Miami Beach, FL, USA, 2018.
25. Y. Chen, T. T. Georgiou, and A. Tannenbaum. “Wasserstein Geometry of Quantum States and Optimal Transport of Matrix-Valued Measures ” in Workshop of Emerging Applications of Control and System Theory (EACST), 2017 (Dedicated to Professor Mathukumalli Vidyasagar on his 70th birthday.)
26. J. Lerner, R. Sandhu, Y. Chen, and A. Tannenbaum “Machine Learning for Joint Classification and Segmentation” in Workshop of Emerging Applications of Control and System Theory (EACST), 2017 (Dedicated to Professor Mathukumalli Vidyasagar on his 70th birthday.)
27. H. Farooq, Y. Chen, T.T. Georgiou, and C. Lenglet. “Brain Parcellation and Connectivity Mapping using Wasserstein Geometry” in *20th International Conference on Medical Image Computing and Computer Assisted Intervention*, 2017.
28. Y. Chen, J. H. Oh, R. Sandhu, S. Lee, J.O. Deasy, and A. Tannenbaum. “Transcriptional responses to ultraviolet and ionizing radiation: An approach based on graph curvature” in *IEEE International Conference on Bioinformatics and Biomedicine*, 2016.
29. Y. Chen, T. T. Georgiou, M. Pavon, and A. Tannenbaum. “A new approach to robust transportation over networks” in *Proceedings of the 55th IEEE Conference on Decision and Control*, Las Vegas, NV, USA, 2016.
30. H. Farooq, Y. Chen, T.T. Georgiou, and C. Lenglet. “Some geometric ideas for feature enhancement of diffusion tensor fields” in *Proceedings of the 55th IEEE Conference on Decision and Control*, Las Vegas, NV, USA, 2016.
31. W. Chen, J. Liu, Y. Chen, S.Z. Khong, D. Wang, T. Basar, L. Qiu, and K. H. Johansson. “Characterizing the Positive Semidefiniteness of Weighted Laplacians via Generalized Effective Resistances” in *Proceedings of the 55th IEEE Conference on Decision and Control*, Las Vegas, NV, USA, 2016.

32. Y. Chen, S. Z. Khong, and T. T. Georgiou. “On the definiteness of graph Laplacians with negative weights: Geometrical and passivity-based approaches” in *2016 American Control Conference*, Boston, MA, USA, 2016.
33. Y. Chen, T. T. Georgiou, and M. Pavon. “Steering state statistics with output feedback” in *Proceedings of the 54th IEEE Conference on Decision and Control*, Osaka, Japan, 2015.
34. Y. Chen, T. T. Georgiou, and M. Pavon. “Optimal control of the state statistics for a linear stochastic system” in *Proceedings of the 54th IEEE Conference on Decision and Control*, Osaka, Japan, 2015.
35. Y. Chen, T. T. Georgiou, and M. Pavon. “Optimal mass transport over bridges” in *Proceedings of the 2nd Conference on Geometric Science of Information*, Paris, France, 2015.
36. Y. Chen, T. T. Georgiou, and M. Pavon. “Optimal steering of inertial particles diffusing anisotropically with losses” in *Proceedings of the 2015 American Control Conference*, Chicago, IL, USA, 2015.
37. Y. Chen and T. T. Georgiou. “The flatness of power spectral zeros and their significance in quadratic estimation” in *Proceedings of the 53rd IEEE Conference on Decision and Control*, Los Angeles, CA, USA, 2014.
38. Y. Chen, M. R. Jovanović, and T. T. Georgiou. “State covariances and the matrix completion problem” in *Proceedings of the 52nd IEEE Conference on Decision and Control*, Florence, Italy, 2013.

INVITED TALKS

1. “Stochastic Diffusions in Control, Inference, and Learning,” *International Symposium on Mathematical Theory of Networks and Systems*, **Semi-Plenary talk**, 2024.
2. “Stochastic Diffusions in Control, Inference, and Learning,” *Purdue University*, 2024.
3. “A Journey through Diffusions in Control, Inference, and Learning,” *American Control Conference*, **Plenary talk**, 2023.
4. “Stochastic Diffusions in Control, Inference, and Learning,” *University of Texas at Austin*, 2023.
5. “A Proximal Algorithm for Sampling,” *University of Georgia*, 2023.
6. “A Proximal Algorithm for Sampling,” *Georgia State University*, 2023.
7. “Graphical Optimal Transport and its Applications,” *The Institute for Computational and Experimental Research in Mathematics*, RI, 2023.
8. “A Proximal Algorithm for Sampling,” *Duke University*, 2023.
9. “A Journey through Diffusions in Control, Inference, and Learning,” *University of Michigan*, MI, 2023.
10. “Fast Sampling of Diffusion Models,” *University of Minnesota*, MN, 2023.
11. “A Journey through Diffusions in Control, Inference, and Learning,” *University of Illinois at Urbana-Champaign*, IL, 2023.
12. “A Proximal Algorithm for Sampling,” *Simons Institute for the Theory of Computing*, Berkeley, CA, 2023.