



Mykel Kochenderfer

Associate Professor of Aeronautics and Astronautics and, by courtesy, of Computer Science

CONTACT INFORMATION

- **Administrator**

Corinna Haussecker - Administrative Associate

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Tel (650) 723-2107

Bio

BIO

Mykel Kochenderfer is Associate Professor of Aeronautics and Astronautics at Stanford University. Prior to joining the faculty, he was at MIT Lincoln Laboratory where he worked on airspace modeling and aircraft collision avoidance, with his early work leading to the establishment of the ACAS X program. He received a Ph.D. from the University of Edinburgh and B.S. and M.S. degrees in computer science from Stanford University. Prof. Kochenderfer is the director of the Stanford Intelligent Systems Laboratory (SISL), conducting research on advanced algorithms and analytical methods for the design of robust decision making systems. Of particular interest are systems for air traffic control, unmanned aircraft, and other aerospace applications where decisions must be made in uncertain, dynamic environments while maintaining safety and efficiency. Research at SISL focuses on efficient computational methods for deriving optimal decision strategies from high-dimensional, probabilistic problem representations. He is an author of "Decision Making under Uncertainty: Theory and Application" (2015), "Algorithms for Optimization" (2019), and "Algorithms for Decision Making" (2022), all from MIT Press. He is a third generation pilot.

ACADEMIC APPOINTMENTS

- Associate Professor, Aeronautics and Astronautics
- Associate Professor (By courtesy), Computer Science
- Member, Bio-X
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Co-Director, Center for AI Safety, (2018- present)
- Director, SAIL-Toyota Center for AI Research, (2018- present)

PROGRAM AFFILIATIONS

- Symbolic Systems Program

PROFESSIONAL EDUCATION

- Ph.D., University of Edinburgh , Informatics (2006)
- M.S., Stanford University , Computer Science (2003)
- B.S., Stanford University , Computer Science (2003)

LINKS

- Personal site: <https://mykel.kochenderfer.com>
- Lab site: <https://sisl.stanford.edu>

Teaching

COURSES

2022-23

- Artificial Intelligence and Society: MLA 373 (Spr)
- Artificial Intelligence and Society: OSPOXFRD 29 (Aut)
- Decision Making under Uncertainty: AA 228 (Win)
- Engineering Design Optimization: AA 222, CS 361 (Spr)
- Engineering and Technology in India: OSPGEN 20 (Sum)

2021-22

- Advanced Topics in Sequential Decision Making: AA 229, CS 239 (Win)
- Decision Making under Uncertainty: AA 228, CS 238 (Aut)
- Engineering Design Optimization: AA 222, CS 361 (Spr)

2020-21

- Building Trust in Autonomy: AA 120Q (Win)
- Decision Making under Uncertainty: AA 228, CS 238 (Aut)
- Engineering Design Optimization: AA 222 (Spr)

2019-20

- Advanced Topics in Sequential Decision Making: AA 229, CS 239 (Win)
- Decision Making under Uncertainty: AA 228, CS 238 (Aut)
- Engineering Design Optimization: AA 222, CS 361 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

John Alsterda, Spenser Anderson, Somrita Banerjee, Mingkun Chen, Kaitlin Dennison, Tyler Hall, Jessie Lauzon, Thomas Lew, Brian Munguía, Jacob Needels, Jeff Park, Harsh Patel, Jordan Smart, Aliyah Smith, Joe Vincent, Gradey Wang, Patrick Washington, Noah Youkilis, Javier Yu, Jean de Becdelievre, yizheng wang

Orals Chair

Andrey Kurenkov

Postdoctoral Faculty Sponsor

Anthony Corso, Jiachen Li, Aolin Xu, Esen Yel

Orals Evaluator

Spenser Anderson, Jean de Becdelievre

Doctoral Dissertation Advisor (AC)

Dylan Asmar, Victoria Dax, Harrison Delecki, Fadhil Ginting, Arec Jamgochian, Soyeon Jung, Sydney Katz, Liam Kruse, Bernard Lange, Joshua Ott, Oriana Peltzer, Marc Schlichting, Maneekwan Toyungyernsub, Alexandros Tzikas, Anil Yildiz

Doctoral Dissertation Co-Advisor (AC)

Samuel Akinwande, David Wu

Master's Program Advisor

Mahdi Al-Husseini, Michelle Bao, Ian Chakraborty, Mary Cooper, Michael Dacus, Joon Lee, Tiffany Lee, Levi Lian, Shai Limonchik, Amaury Reed, Sean Roelofs, Biswas (Brian) Sha, Rohan Sinha, Ken Wang, Amber Yang

Doctoral (Program)

Robert Moss, Anka Reuel, Aliyah Smith, Emi Soroka, Romeo Valentin

Publications

PUBLICATIONS

- **Algorithms for Decision Making**

Kochenderfer, M. J., Wheeler, T. A., Wray, K. H.
MIT Press.2022

- **Modeling human driving behavior through generative adversarial imitation learning** *IEEE Transactions on Intelligent Transportation Systems*

Bhattacharyya, R., Wulfe, B., Phillips, D. J., Kuefler, A., Morton, J., Senanayake, R., Kochenderfer, M. J.
2022

- **Personalizing exoskeleton assistance while walking in the real world** *Nature*

Slade, P., Kochenderfer, M. J., Delp, S. L., Collins, S. H.
2022; 610 (7931): 277-282

- **Towards assessing subcortical “deep brain” biomarkers of PTSD with functional near-infrared spectroscopy** *Cerebral Cortex*

Balters, S., Schlichting, M. R., Foland-Ross, L., Brigadoi, S., Millar, J. G., Kochenderfer, M. J., Garrett, A. S., Reiss, A. L.
2022: 1--16

- **Interpretable self-aware neural networks for robust trajectory prediction** *Conference on Robot Learning (CoRL)*

Itkina, M., Kochenderfer, M. J.
2022

- **Interaction modeling with multiplex attention** *Advances in Neural Information Processing Systems (NeurIPS)*

Sun, F., Kauvar, I., Zhang, R., Li, J., Kochenderfer, M. J., Wu, J., Haber, N.
2022

- **Collaborative decision making using action suggestions** *Advances in Neural Information Processing Systems (NeurIPS)*

Asmar, D., Kochenderfer, M. J.
2022

- **Risk-driven design of perception systems** *Advances in Neural Information Processing Systems (NeurIPS)*

Corso, A., Katz, S. M., Innes, C. A., Du, X., Ramamoorthy, S., Kochenderfer, M. J.
2022

- **Collision risk and operational impact of speed change advisories as aircraft collision avoidance maneuvers** *AIAA AVIATION Forum*

Katz, S. M., Alvarez, L. E., Owen, M., Wu, S., Brittain, M. W., Das, A., Kochenderfer, M. J.
2022

- **Prioritizing emergency evacuations under compounding levels of uncertainty** *IEEE Global Humanitarian Technology Conference (GHTC)*

-
- Einstein, L. J., Moss, R. J., Kochenderfer, M. J.
2022
- **Uncertainty-aware online merge planning with learned driver behavior** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Kruse, L., Yel, E., Senanayake, R., Kochenderfer, M. J.
2022
 - **Verification of image-based neural network controllers using generative models** *Journal of Aerospace Information Systems*
Katz, S. M., Corso, A. L., Strong, C. A., Kochenderfer, M. J.
2022; 19 (9): 574-584
 - **Multi-objective policy gradients with topological constraints** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Wray, K., Tiomkin, S., Kochenderfer, M. J., Abbeel, P.
2022
 - **FIG-OP: Exploring large-scale unknown environments on a fixed time budget** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Peltzer, O., Bouman, A., Kim, S., Senanayake, R., Ott, J., Delecki, H., Sobue, M., Kochenderfer, M. J., Schwager, M., Burdick, J., Agha-mohammadi, A.
2022
 - **Dynamics-aware spatiotemporal occupancy prediction in urban environments** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Toyungyernsub, M., Yel, E., Li, J., Kochenderfer, M. J.
2022
 - **How do we fail? Stress testing perception in autonomous vehicles,** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Delecki, H., Itkina, M., Lange, B., Senanayake, R., Kochenderfer, M. J.
2022
 - **Adaptive coverage path planning for efficient exploration of unknown environments** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Bouman, A., Ott, J., Kim, S., Chen, K., Kochenderfer, M. J., Lopez, B., Agha-mohammadi, A., Burdick, J.
2022
 - **A sequential decision-making framework with uncertainty quantification for groundwater management** *Advances in Water Resources*
Wang, Y., Zechner, M., Mern, J. M., Kochenderfer, M. J., Caers, J. K.
2022; 166
 - **Hierarchical planning for dynamic resource allocation in smart and connected communities** *ACM Transactions on Cyber-Physical Systems*
Pettet, G., Mukhopadhyay, A., Kochenderfer, M. J., Dubey, A.
2022
 - **Optimal pointing sequences in spacecraft formation flying using online planning with resource constraints** *Conference on Learning for Dynamics and Control (LADC)*
Low, S. Y., Kochenderfer, M. J.
2022
 - **Scalable online planning for multi-agent MDPs,** *Journal of Artificial Intelligence Research*
Choudhury, S., Gupta, J. K., Morales, P., Kochenderfer, M. J.
2022; 73: 821-846
 - **Learning emergent discrete message communication for cooperative reinforcement learning** *IEEE International Conference on Robotics and Automation (ICRA)*
Li, S., Zhou, Y., Allen, R., Kochenderfer, M. J.
2022
 - **Infrastructure-enabled autonomy: An attention mechanism for occlusion handling** *IEEE International Conference on Robotics and Automation (ICRA)*
Dax, V. M., Kochenderfer, M. J., Senanayake, R., Ibrahim, U.
2022
 - **Multi-agent variational occlusion inference using people as sensors** *IEEE International Conference on Robotics and Automation (ICRA)*
Itkina, M., Mun, Y., Driggs-Campbell, K., Kochenderfer, M. J.
2022

- **A review of incident prediction, resource allocation, and dispatch models for emergency management** *Accident Analysis and Prevention*
Mukhopadhyay, A., Pettet, G., Vazirizade, S. M., Lu, D., Jaimes, A., El Said, S., Baroud, H., Vorobeychik, Y., Kochenderfer, M. J., Dubey, A.
2022; 165
- **Coordinated multi-agent path finding for drones and trucks over road networks** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
Choudhury, S., Solovey, K., Kochenderfer, M. J., Pavone, M.
2022
- **Agent-time attention for sparse rewards multi-agent reinforcement learning** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
She, J., Gupta, J. K., Kochenderfer, M. J.
2022
- **Recursive reasoning graph for multi-agent reinforcement learning** *AAAI Conference on Artificial Intelligence (AAAI)*
Ma, X., Isele, D., Gupta, J. K., Fujimura, K., Kochenderfer, M. J.
2022
- **OVERT: An algorithm for safety verification of neural network control policies for nonlinear systems** *Journal of Machine Learning Research*
Sidrane, C., Maleki, A., Irfan, A., Kochenderfer, M. J.
2022; 23 (117): 1-45
- **ZoPE: A fast optimizer for ReLU networks with low-dimensional inputs** *NASA Formal Methods Symposium (NFM)*
Strong, C. A., Katz, S. M., Corso, A. L., Kochenderfer, M. J.
2022
- **Portfolio construction as linearly constrained separable optimization** *Optimization and Engineering*
Moehle, N., Gindi, J., Boyd, S., Kochenderfer, M. J.
2022
- **Improving automated driving through POMDP planning with human internal states** *IEEE Transactions on Intelligent Transportation Systems*
Sunberg, Z. N., Kochenderfer, M. J.
2022; 23 (11): 20073-20083
- **Algorithms for verifying deep neural networks** *Foundations and Trends in Optimization*
Liu, C., Arnon, T., Lazarus, C., Strong, C., Barrett, C., Kochenderfer, M. J.
2021; 4 (3-4): 244--404
- **Reluplex: a calculus for reasoning about deep neural networks** *Formal Methods in System Design*
Katz, G., Barrett, C., Dill, D. L., Julian, K. D., Kochenderfer, M. J.
2021
- **Comparison of machine learning approaches to improve diagnosis of optic neuropathy using photopic negative response measured using a handheld device** *Frontiers in Medicine*
Diao, T., Kushzad, F., Patel, M. D., Bindiganavale, M. P., Wasi, M., Kochenderfer, M. J., Moss, H. E.
2021; 8
- **Dyadic sex composition and task classification using fNIRS hyperscanning data** *IEEE International Conference on Machine Learning and Applications*
Kruse, L., Reiss, A., Kochenderfer, M. J., Balters, S.
2021
- **Evidential softmax for sparse multimodal distributions in deep generative models** *Advances in Neural Information Processing Systems (NeurIPS)*
Chen, P., Itkina, M., Senanayake, R., Kochenderfer, M. J.
2021
- **Dynamic multi-robot task allocation under uncertainty and temporal constraints** *Autonomous Robots*
Choudhury, S., Gupta, J. K., Kochenderfer, M. J., Sadigh, D., Bohg, J.
2021
- **Multimodal sensing and intuitive steering assistance improve navigation and mobility for people with impaired vision** *Science Robotics*

-
- Slade, P., Tambe, A., Kochenderfer, M. J.
2021; 6 (59): 1-13
- **A hybrid rule-based and data-driven approach to driver modeling through particle filtering** *IEEE Transactions on Intelligent Transportation Systems*
Bhattacharyya, R., Jung, S., Kruse, L., Senanayake, R., Kochenderfer, M. J.
2021
 - **Attention augmented ConvLSTM for environment prediction** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Lange, B., Itkina, M., Kochenderfer, M. J.
2021
 - **3D velocity maps for uncertain dynamic urban environments** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Senanayake, R., Hatch, K. B., Zheng, J. Z., Kochenderfer, M. J.
2021
 - **Finding failures in high-fidelity simulation using adaptive stress testing and the backward algorithm** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Koren, M., Nassar, A., Kochenderfer, M. J.
2021
 - **Sensing leg movement enhances wearable monitoring of energy expenditure** *Nature Communications*
Slade, P., Kochenderfer, M. J., Delp, S. L., Collins, S. H.
2021; 12 (4312)
 - **Verification of image-based neural network controllers using generative model** *Digital Avionics Systems Conference (DASC)*
Katz, S. M., Corso, A. L., Strong, C. A., Kochenderfer, M. J.
2021
 - **Explaining COVID-19 outbreaks with reactive SEIRD models** *Scientific Reports*
Menda, K., Laird, L., Kochenderfer, M. J., Caceres, R. S.
2021; 11 (17905)
 - **Tax-aware portfolio construction via convex optimization** *Journal of Optimization Theory and Applications*
Moehle, N., Kochenderfer, M. J., Boyd, S., Ang, A.
2021; 189: 364-383
 - **Reinforcement learning for autonomous driving with latent state inference and spatial-temporal relationships** *IEEE International Conference on Robotics and Automation (ICRA)*
Ma, X., Li, J., Kochenderfer, M. J., Isele, D., Fujimura, K.
2021
 - **Generating probabilistic safety guarantees for neural network controllers** *Machine Learning*
Katz, S. M., Julian, K. D., Strong, C. A., Kochenderfer, M. J.
2021
 - **A maximum independent set method for scheduling earth observing satellite constellations** *Journal of Spacecraft and Rockets*
Eddy, D., Kochenderfer, M. J.
2021; 58 (5): 1416-1429
 - **Efficient large-scale multi-drone delivery using transit networks** *Journal of Artificial Intelligence Research*
Choudhury, S., Solovey, K., Kochenderfer, M. J., Pavone, M.
2021; 70: 757-788
 - **Parameter-conditioned sequential generative modeling of fluid flows** *AIAA Journal*
Morton, J., Witherden, F. D., Kochenderfer, M. J.
2021; 59 (3): 825-841
 - **Reachability analysis for neural network aircraft collision avoidance systems** *Journal of Guidance, Control, and Dynamics*
Julian, K. D., Kochenderfer, M. J.
2021; 44 (6): 1132-1142

- **Deep implicit coordination graphs for multi-agent reinforcement learning** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
Li, S., Gupta, J. K., Morales, P., Allen, R., Kochenderfer, M. J.
2021
- **Scalable anytime planning for multi-agent MDPs** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
Choudhury, S., Gupta, J., Morales, P., Kochenderfer, M. J.
2021
- **Hierarchical planning for resource allocation in emergency response systems** *ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*
Pettet, G., Mukhopadhyay, A., Kochenderfer, M. J., Dubey, A.
2021
- **Global optimization of objective functions represented by ReLU networks** *Machine Learning*
Strong, C. A., Wu, H., Zelji#, A., Julian, K. D., Katz, G., Barrett, C., Kochenderfer, M. J.
2021
- **Double-prong ConvLSTM for spatiotemporal occupancy prediction in dynamic environments** *IEEE International Conference on Robotics and Automation (ICRA)*
Toyungernsub, M., Itkina, M., Senanayake, R., Kochenderfer, M. J.
2021
- **Transfer learning for efficient iterative safety validation** *AAAI Conference on Artificial Intelligence (AAAI)*
Corso, A., Kochenderfer, M. J., et al
2021
- **Improved POMDP tree search planning with prioritized action branching** *AAAI Conference on Artificial Intelligence (AAAI)*
Mern, J., Yildiz, A., Bush, L., Mukerji, T., Kochenderfer, M. J.
2021
- **Bayesian optimized Monte Carlo planning** *AAAI Conference on Artificial Intelligence (AAAI)*
Mern, J., Yildiz, A., Sunberg, Z., Mukerji, T., Kochenderfer, M. J.
2021
- **Obstacle avoidance using a monocular camera** *AIAA Science and Technology Forum (SciTech)*
Hatch, K., Mern, J., Kochenderfer, M. J.
2021
- **Out-of-distribution detection for automotive perception** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Nitsch, J., Itkina, M., Senanayake, R., Nieto, J., Schmidt, M., Siegart, R., Kochenderfer, M. J.
2021
- **A survey of algorithms for black-box safety validation of cyber-physical systems** *Journal of Artificial Intelligence Research*
Corso, A., Moss, R. J., Koren, M., Lee, R., Kochenderfer, M. J.
2021; 72: 377–428
- **Normalizing flow model for policy representation in continuous action multi-agent systems** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
Ma, X., Gupta, J. K., Kochenderfer, M. J.
2020
- **Optimal sequential task assignment and path finding for multi-agent robotic assembly planning** *IEEE International Conference on Robotics and Automation (ICRA)*
Brown, K., Peltzer, O., Sehr, M. A., Schwager, M., Kochenderfer, M. J.
2020
- **Multi-agent adversarial inverse reinforcement learning with latent variables** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
Gruver, N., Song, J., Kochenderfer, M. J., Ermon, S.
2020

- **On algorithmic decision procedures in emergency response systems in smart and connected communities** *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*
Pettet, G., Mukhopadhyay, A., Kochenderfer, M. J., Vorobeychik, Y., Dubey, A.
2020
- **Model primitives for hierarchical lifelong reinforcement learning** *Autonomous Agents and Multi-Agent Systems*
Wu, B., Gupta, J. K., Kochenderfer, M. J.
2020; 34
- **Adaptive informative path planning with multimodal sensing** *International Conference on Automated Planning and Scheduling (ICAPS)*
Gruver, N., Choudhury, S., Kochenderfer, M. J.
2020
- **Online parameter estimation for human driver behavior prediction** *American Control Conference (ACC)*
Bhattacharyya, R. P., Senanayake, R., Brown, K., Kochenderfer, M. J.
2020
- **Exchangeable input representations for reinforcement learning** *American Control Conference (ACC)*
Mern, J., Sadigh, D., Kochenderfer, M. J.
2020
- **Combining planning and deep reinforcement learning in tactical decision making for autonomous driving** *IEEE Transactions on Intelligent Vehicles*
Hoel, C., Driggs-Campbell, K., Wolff, K., Laine, L., Kochenderfer, M. J.
2020; 5 (2): 294-305
- **Point-based methods for model checking in partially observable Markov decision processes** *AAAI Conference on Artificial Intelligence (AAAI)*
Bouton, M., Tumova, J., Kochenderfer, M. J.
2020
- **Markov decision processes for multi-objective satellite task planning** *IEEE Aerospace Conference*
Eddy, D., Kochenderfer, M. J.
2020
- **Adaptive stress testing: finding likely failure events with reinforcement learning** *Journal of Artificial Intelligence Research*
Lee, R., Mengshoel, O. J., Saksena, A., Gardner, R. W., Genin, D., Silbermann, J., Owen, M., Kochenderfer, M. J.
2020; 69: 1165-1201
- **Robust spatial-temporal incident prediction** *Conference on Uncertainty in Artificial Intelligence (UAI)*
Mukhopadhyay, A., Wang, K., Perrault, A., Kochenderfer, M. J., Tambe, M., Vorobeychik, Y.
2020
- **Normalizing flow policies for multi-agent systems** *Conference on Decision and Game Theory for Security (GameSec)*
Ma, X., Gupta, J. K., Kochenderfer, M. J.
2020
- **Provably efficient reward-agnostic navigation with linear value iteration** *Advances in Neural Information Processing Systems (NeurIPS)*
Zanette, A., Lazaric, A., Kochenderfer, M. J., Brunskill, E.
2020
- **Handling missing data with graph representation learning** *Advances in Neural Information Processing Systems (NeurIPS)*
You, J., Ma, X., Ding, D., Kochenderfer, M. J., Leskovec, J.
2020
- **Evidential sparsification of multimodal latent spaces in conditional variational autoencoders** *Advances in Neural Information Processing Systems (NeurIPS)*
Itkina, M., Ivanovic, B., Senanayake, R., Kochenderfer, M. J., Pavone, M.
2020
- **Learning near optimal policies with low inherent Bellman error** *International Conference on Machine Learning (ICML)*
Zanette, A., Lazaric, A., Kochenderfer, M. J., Brunskill, E.
2020

- **Scalable identification of partially observed systems with certainty-equivalent EM** *International Conference on Machine Learning (ICML)*
Menda, K., de Bcdelievre, J., Gupta, J. K., Kroo, I., Kochenderfer, M. J., Manchester, Z.
2020
- **Efficient large-scale multi-drone delivery using transit networks** *IEEE International Conference on Robotics and Automation (ICRA)*
Choudhury, S., Solovey, K., Kochenderfer, M. J., Pavone, M.
2020
- **Adaptive stress testing without domain heuristics using go-explore**
Koren, M., Kochenderfer, M. J.
2020
- **Interpretable safety validation for autonomous vehicles** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Corso, A., Kochenderfer, M. J.
2020
- **Scalable autonomous vehicle safety validation through dynamic programming and scene decomposition** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Corso, A., Lee, R., Kochenderfer, M. J.
2020
- **Reinforcement learning with iterative reasoning for merging in dense traffic** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Bouton, M., Nakhaei, A., Isele, D., Fujimura, K., Kochenderfer, M. J.
2020
- **Validation of image-based neural network controllers through adaptive stress testing**
Julian, K. D., Lee, R., Kochenderfer, M. J.
2020
- **Directional primitives for uncertainty-aware motion estimation in urban environments** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Senanayake, R., Toyungyernsub, M., Wang, M., Kochenderfer, M. J., Schwager, M.
2020
- **Dynamic multi-robot task allocation under uncertainty and temporal constraints** *Robotics: Science and Systems*
Choudhury, S., Gupta, J. K., Kochenderfer, M. J., Sadigh, D., Bohg, J.
2020
- **Active preference-based Gaussian process regression for reward learning** *Robotics: Science and Systems*
Biyik, E., Huynh, N., Kochenderfer, M. J., Sadigh, D.
2020
- **Structured mechanical models for robot learning and control** *Conference on Learning for Dynamics and Control*
Gupta, J. K., Menda, K., Manchester, Z., Kochenderfer, M. J.
2020
- **Image-based guidance of autonomous aircraft for wildfire surveillance and predictions** *Digital Avionics Systems Conference (DASC)*
Julian, K. D., Kochenderfer, M. J.
2020
- **Runtime safety assurance using reinforcement learning** *Digital Avionics Systems Conference (DASC)*
Lazarus, C., Lopez, J. G., Kochenderfer, M. J.
2020
- **Adaptive stress testing of trajectory predictions in flight management systems** *Digital Avionics Systems Conference (DASC)*
Moss, R. J., Lee, R., Visser, N., Kochenderfer, M. J.
2020
- **Towards verification of neural networks for small unmanned aircraft collision avoidance** *Digital Avionics Systems Conference (DASC)*
Irfan, A., Julian, K. D., Wu, H., Barrett, C., Kochenderfer, M. J., Meng, B., Lopez, J.

2020

- **Analysis of fleet management and infrastructure constraints in on-demand urban air mobility operations** *AIAA AVIATION*
Li, S., Egorov, M., Kochenderfer, M. J.
2020
- **Reinforcement learning for adaptive illumination with x-rays** *IEEE International Conference on Robotics and Automation (ICRA)*
Betterton, J., Kochenderfer, M. J., Ratner, D., Webb, S.
2020
- **Algorithms for Optimization**
Kochenderfer, M. J., Wheeler, T. A.
MIT Press.2019
- **Optimizing collision avoidance in dense airspace using deep reinforcement learning** *Air Traffic Management Research and Development Seminar*
Li, S., Egorov, M., Kochenderfer, M. J.
2019
- **Estimation and control using sampling-based Bayesian reinforcement learning** *IET Cyber-Physical Systems: Theory & Applications*
Slade, P., Sunberg, Z. N., Kochenderfer, M. J.
2019; 5 (1): 127-135
- **Predicting subjective sleep quality using recurrent neural networks** *IEEE Signal Processing in Medicine and Biology Symposium*
Boussard, J., Kochenderfer, M. J., Zeitzer, J. M.
2019
- **Almost horizon-free structure-aware best policy identification with a generative model** *Advances in Neural Information Processing Systems (NeurIPS)*
Zanette, A., Kochenderfer, M. J., Brunskill, E.
2019
- **Limiting extrapolation in linear approximate value iteration** *Advances in Neural Information Processing Systems (NeurIPS)*
Zanette, A., Lazaric, A., Kochenderfer, M. J., Brunskill, E.
2019
- **Stochastic model predictive control for scheduling charging of electric vehicle fleets with market power** *IEEE International Conference on Connected Vehicles and Expo (ICCVE)*
Jamgochian, A. L., Kochenderfer, M. J.
2019
- **Efficient autonomy validation in simulation with adaptive stress testing** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Koren, M., Kochenderfer, M. J.
2019
- **Dynamic environment prediction in urban scenes using recurrent representation learning** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Itkina, M., Driggs-Campbell, K., Kochenderfer, M. J.
2019
- **Adaptive stress testing with reward augmentation for autonomous vehicle validation** *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
Corso, A., Du, P., Driggs-Campbell, K., Kochenderfer, M. J.
2019
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