Mykel J Kochenderfer

List of Publications by Citations

103	1,895	19	41
papers	citations	h-index	g-index
120	2,596	3.1	5.66
ext. papers	ext. citations	avg, IF	L-index

#	Paper	IF	Citations
103	Reluplex: An Efficient SMT Solver for Verifying Deep Neural Networks. *Lecture Notes in Computer Science*, **2017**, 97-117	0.9	333
102	Cooperative Multi-agent Control Using Deep Reinforcement Learning. *Lecture Notes in Computer Science*, **2017**, 66-83	0.9	197
101	Decision Making Under Uncertainty **2015**,		167
100	The Marabou Framework for Verification and Analysis of Deep Neural Networks. *Lecture Notes in Computer Science*, **2019**, 443-452	0.9	99
99	Airspace Encounter Models for Estimating Collision Risk. *Journal of Guidance, Control, and Dynamics* , **2010**, 33, 487-499	2.1	95
98	Policy compression for aircraft collision avoidance systems **2016**,		72
97	Collision Avoidance for Unmanned Aircraft using Markov Decision Processes* **2010**,		58
96	Deep Neural Network Compression for Aircraft Collision Avoidance Systems. *Journal of Guidance, Control, and Dynamics*, **2019**, 42, 598-608	2.1	48
95	Decentralized control of partially observable Markov decision processes **2013**,		40
94	Accounting for State Uncertainty in Collision Avoidance. *Journal of Guidance, Control, and Dynamics*, **2011**, 34, 951-960	2.1	36
93	Towards Proving the Adversarial Robustness of Deep Neural Networks. *Electronic Proceedings in Theoretical Computer Science, EPTCS*,257, 19-26		35
92	Learning Probabilistic Trajectory Models of Aircraft in Terminal Airspace From Position Data. *IEEE Transactions on Intelligent Transportation Systems*, **2019**, 20, 3536-3545	6.1	28
91	Aircraft Collision Avoidance Using Monte Carlo Real-Time Belief Space Search. *Journal of Intelligent and Robotic Systems: Theory and Applications*, **2011**, 64, 277-298	2.9	27
90	Optimizing the Next Generation Collision Avoidance System for Safe, Suitable, and Acceptable Operational Performance. *Air Traffic Control Quarterly*, **2013**, 21, 275-297		26
89	Cooperation-Aware Reinforcement Learning for Merging in Dense Traffic **2019**,		25
88	Distributed Wildfire Surveillance with Autonomous Aircraft Using Deep Reinforcement Learning. *Journal of Guidance, Control, and Dynamics*, **2019**, 42, 1768-1778	2.1	24
87	Recovering missing CFD data for high-order discretizations using deep neural networks and dynamics learning. *Journal of Computational Physics*, **2019**, 395, 105-124	4.1	22

86	Decomposition Methods for Optimized Collision Avoidance with Multiple Threats. *Journal of Guidance, Control, and Dynamics*, **2012**, 35, 398-405	2.1	21
85	A decision-theoretic approach to developing robust collision avoidance logic **2010**,		19
84	A comparison of Monte Carlo tree search and rolling horizon optimization for large-scale dynamic resource allocation problems. *European Journal of Operational Research*, **2017**, 263, 664-678	5.6	18
83	Learning Traffic Patterns at Small Airports From Flight Tracks. *IEEE Transactions on Intelligent Transportation Systems*, **2017**, 18, 917-926	6.1	18
82	Multi-Rotor Aircraft Collision Avoidance using Partially Observable Markov Decision Processes **2016**,		18
81	Markov Decision Process-Based Distributed Conflict Resolution for Drone Air Traffic Management. *Journal of Guidance, Control, and Dynamics*, **2017**, 40, 69-80	2.1	16
80	Collision avoidance for general aviation. *IEEE Aerospace and Electronic Systems Magazine*, **2012**, 27, 4-12	2.4	16
79	Analysis of microscopic behavior models for probabilistic modeling of driver behavior **2016**,		16
78	Algorithms for Verifying Deep Neural Networks. *Foundations and Trends® in Optimization*, **2021**, 4, 244-404		16
77	Hazard Alerting Using Line-of-Sight Rate **2008**,		15
76	Unmanned Aircraft Collision Avoidance using Continuous-State POMDPs		15
75	Value Sensitive Design for Autonomous Vehicle Motion Planning **2018**,		14
74	Deep Reinforcement Learning for Event-Driven Multi-Agent Decision Processes. *IEEE Transactions on Intelligent Transportation Systems*, **2019**, 20, 1259-1268	6.1	13
73	Probabilistic Airport Acceptance Rate Prediction **2016**,		12
72	A New Approach for Designing Safer Collision Avoidance Systems. *Air Traffic Control Quarterly*, **2012**, 20, 27-45		12
71	Vertical State Estimation for Aircraft Collision Avoidance with Quantized Measurements. *Journal of Guidance, Control, and Dynamics*, **2013**, 36, 1797-1802	2.1	12
70	A Bayesian Approach to Aircraft Encounter Modeling **2008**,		12
69	Guaranteeing Safety for Neural Network-Based Aircraft Collision Avoidance Systems **2019**,		12

68	Simulating Emergent Properties of Human Driving Behavior Using Multi-Agent Reward Augmented Imitation Learning **2019**,		10
67	Electro-Optical System Analysis for Sense and Avoid **2008**,		10
66	Simulation Comparison of Collision Avoidance Algorithms for Small Multi-Rotor Aircraft **2016**,		10
65	Factor graph scene distributions for automotive safety analysis **2016**,		10
64	Reluplex: a calculus for reasoning about deep neural networks. *Formal Methods in System Design*,1	1.4	10
63	Rapid energy expenditure estimation for ankle assisted and inclined loaded walking. *Journal of NeuroEngineering and Rehabilitation*, **2019**, 16, 67	5.3	9
62	Optimization Approaches to the Single Airport Ground-Holding Problem. *Journal of Guidance, Control, and Dynamics*, **2015**, 38, 2399-2406	2.1	9
61	Encounter modeling for sense and avoid development **2008**,		9
60	A Survey of Algorithms for Black-Box Safety Validation of Cyber-Physical Systems. *Journal of Artificial Intelligence Research*,72,	4	9
59	Initial Scene Configurations for Highway Traffic Propagation **2015**,		8
58	Short-term conflict resolution for unmanned aircraft traffic management **2015**,		8
57	Efficiently Estimating Ambient Near Mid-Air Collision Risk for Unmanned Aircraft* **2010**,		8
56	On Estimating Mid-Air Collision Risk **2010**,		8
55	Evolving Hierarchical and Recursive Teleo-reactive Programs through Genetic Programming. *Lecture Notes in Computer Science*, **2003**, 83-92	0.9	8
54	Model primitives for hierarchical lifelong reinforcement learning. *Autonomous Agents and Multi-Agent Systems*, **2020**, 34, 1	2	7
53	Validation of Image-Based Neural Network Controllers through Adaptive Stress Testing **2020**,		7
52	Differential Adaptive Stress Testing of Airborne Collision Avoidance Systems **2018**,		6
51	Bayesian Preference Elicitation for Multiobjective Engineering Design Optimization. *Journal of Aerospace Information Systems*, **2015**, 12, 634-645	1	6

50	Improved Monte Carlo Sampling for Conflict Probability Estimation **2010**,		6
49	Collision Avoidance Using Partially Controlled Markov Decision Processes. *Communications in Computer and Information Science*, **2013**, 86-100	0.3	6
48	Optimized and trusted collision avoidance for unmanned aerial vehicles using approximate dynamic programming **2016**,		6
47	Autonomous Distributed Wildfire Surveillance using Deep Reinforcement Learning **2018**,		5
46	Collision avoidance system optimization with probabilistic pilot response models **2011**,		5
45	Hazard Alerting Based on Probabilistic Models. *Journal of Guidance, Control, and Dynamics*, **2012**, 35, 442-450	2.1	5
44	Global optimization of objective functions represented by ReLU networks. *Machine Learning*,1	4	5
43	Tutorial on the generation of ergodic trajectories with projection-based gradient descent. *IET Cyber-Physical Systems: Theory and Applications*, **2019**, 4, 89-100	2.5	4
42	Collision Avoidance System Optimization for Closely Spaced Parallel Operations through Surrogate Modeling **2013**,		4
41	Compression of Optimal Value Functions for Markov Decision Processes **2013**,		4
40	Verification of Image-based Neural Network Controllers Using Generative Models **2021**,		4
39	Point-Based Methods for Model Checking in Partially Observable Markov Decision Processes. *Proceedings of the AAAI Conference on Artificial Intelligence*, **2020**, 34, 10061-10068	5	4
38	Customer Simulation for Direct Marketing Experiments **2016**,		4
37	Sensing leg movement enhances wearable monitoring of energy expenditure. *Nature Communications*, **2021**, 12, 4312	17.4	4
36	Algorithms for Verifying Deep Neural Networks **2021**,		4
35	Horizontal Maneuver Coordination for Aircraft Collision-Avoidance Systems. *Journal of Aerospace Information Systems*, **2018**, 15, 92-106	1	3
34	Control of epidemics on graphs **2015**,		3
33	A Probabilistic Framework for Microscopic Traffic Propagation **2015**,		3

32	Error model estimation for airborne beacon-based surveillance. *IET Radar, Sonar and Navigation*, **2014**, 8, 667-675	1.4	3
31	Robustness of optimized collision avoidance logic to modeling errors **2010**,		3
30	Collision avoidance for general aviation **2011**,		3
29	Dynamic logic selection for unmanned aircraft separation **2016**,		3
28	Ground Delay Program Planning Using Markov Decision Processes. *Journal of Aerospace Computing, Information, and Communication*, **2016**, 13, 134-142		3
27	Learning an Urban Air Mobility Encounter Model from Expert Preferences **2019**,		3
26	Closed-Loop Policies for Operational Tests of Safety-Critical Systems. *IEEE Transactions on Intelligent Vehicles*, **2018**, 3, 317-328	5	3
25	Explaining COVID-19 outbreaks with reactive SEIRD models. *Scientific Reports*, **2021**, 11, 17905	4.9	3
24	Toward Closing the Loop on Human Values. *IEEE Transactions on Intelligent Vehicles*, **2019**, 4, 437-446	5	2
23	Improving Aircraft Collision Risk Estimation Using the Cross-Entropy Method. *Journal of Air Transportation*, **2016**, 24, 55-62	0.6	2
22	Optimizing a Collision-Avoidance System for Closely Spaced Parallel Operations. *Journal of Aerospace Information Systems*, **2015**, 12, 618-633	1	2
21	Adaptive stress testing of airborne collision avoidance systems **2015**,		2
20	Analysis of open-loop and closed-loop planning for aircraft collision avoidance **2011**,		2
19	Generating probabilistic safety guarantees for neural network controllers. *Machine Learning*,1	4	2
18	Multimodal sensing and intuitive steering assistance improve navigation and mobility for people with impaired vision. *Science Robotics*, **2021**, 6, eabg6594	18.6	2
17	Collision avoidance for unmanned aircraft using coordination tables **2016**,		2
16	Adaptive Stress Testing of Safety-Critical Systems. *Unmanned System Technologies*, **2019**, 77-95	0.4	2
15	Optimal Aircraft Rerouting during Space Launches using Adaptive Spatial Discretization **2018**,		2

LIST OF PUBLICATIONS

#	Publication		
14	Decomposition methods with deep corrections for reinforcement learning. *Autonomous Agents and Multi-Agent Systems*, **2019**, 33, 330-352	2	1
13	Optimization Approaches to the Single Airport Ground Hold Problem **2015**,		1
12	Improving Aircraft Collision Risk Estimation using the Cross-Entropy Method **2015**,		1
11	Decomposition methods for optimized collision avoidance with multiple threats **2011**,		1
10	Position validation strategies using partially observable Markov decision processes **2011**,		1
9	Classification of primary radar tracks using Gaussian mixture models. *IET Radar, Sonar and Navigation*, **2009**, 3, 559	1.4	1
8	Towards Verification of Neural Networks for Small Unmanned Aircraft Collision Avoidance **2020**,		1
7	Parameter-Conditioned Sequential Generative Modeling of Fluid Flows. *AIAA Journal*, **2021**, 59, 825-841	2.1	1
6	Normalizing Flow Policies for Multi-agent Systems. *Lecture Notes in Computer Science*, **2020**, 277-296	0.9	0
5	Tax-Aware Portfolio Construction via Convex Optimization. *Journal of Optimization Theory and Applications*, **2021**, 189, 364-383	1.6	0
4	Fielding a Sense and Avoid Capability for Unmanned Aircraft Systems: Policy, Standards, Technology, and Safety Modeling. *Air Traffic Control Quarterly*, **2013**, 21, 5-27		
3	Estimation and control using sampling-based Bayesian reinforcement learning. *IET Cyber-Physical Systems: Theory and Applications*, **2020**, 5, 127-135	2.5	
2	A Hybrid Rule-Based and Data-Driven Approach to Driver Modeling Through Particle Filtering. *IEEE Transactions on Intelligent Transportation Systems*, **2021**, 1-14	6.1	
1	ZoPE: A Fast Optimizer for ReLU Networks with Low-Dimensional Inputs. *Lecture Notes in Computer Science*, **2022**, 299-317	0.9	