

Aaron D Ames

List of Publications by Year in descending order

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265
papers

9,705
citations

185998

28
h-index

91712

69
g-index

268
all docs

268
docs citations

268
times ranked

3555
citing authors

#	ARTICLE	IF	CITATIONS
1	Control Barrier Function Based Quadratic Programs for Safety Critical Systems. IEEE Transactions on Automatic Control, 2017, 62, 3861-3876.	3.6	985
2	Control Barrier Functions: Theory and Applications. , 2019, , .		650
3	Control barrier function based quadratic programs with application to adaptive cruise control. , 2014, , .		477
4	Safety Barrier Certificates for Collisions-Free Multirobot Systems. IEEE Transactions on Robotics, 2017, 33, 661-674.	7.3	410
5	Biofuel-powered soft electronic skin with multiplexed and wireless sensing for human-machine interfaces. Science Robotics, 2020, 5, .	9.9	385
6	Rapidly Exponentially Stabilizing Control Lyapunov Functions and Hybrid Zero Dynamics. IEEE Transactions on Automatic Control, 2014, 59, 876-891.	3.6	278
7	Robustness of Control Barrier Functions for Safety Critical Control**This work is partially supported by the National Science Foundation Grants 1239055, 1239037 and 1239085.. IFAC-PapersOnLine, 2015, 48, 54-61.	0.5	256
8	Models, feedback control, and open problems of 3D bipedal robotic walking. Automatica, 2014, 50, 1955-1988.	3.0	236
9	The Robotarium: A remotely accessible swarm robotics research testbed. , 2017, , .		224
10	Valkyrie: NASA's First Bipedal Humanoid Robot. Journal of Field Robotics, 2015, 32, 397-419.	3.2	218
11	Human-Inspired Control of Bipedal Walking Robots. IEEE Transactions on Automatic Control, 2014, 59, 1115-1130.	3.6	191
12	Control Barrier Certificates for Safe Swarm Behavior. IFAC-PapersOnLine, 2015, 48, 68-73.	0.5	143
13	3D dynamic walking with underactuated humanoid robots: A direct collocation framework for optimizing hybrid zero dynamics. , 2016, , .		136
14	Input-to-State Safety With Control Barrier Functions. , 2019, 3, 108-113.		122
15	Control barrier function based quadratic programs with application to bipedal robotic walking. , 2015, , .		119
16	Correct-by-Construction Adaptive Cruise Control: Two Approaches. IEEE Transactions on Control Systems Technology, 2016, 24, 1294-1307.	3.2	114
17	Torque Saturation in Bipedal Robotic Walking Through Control Lyapunov Function-Based Quadratic Programs. IEEE Access, 2015, 3, 323-332.	2.6	111
18	Correctness Guarantees for the Composition of Lane Keeping and Adaptive Cruise Control. IEEE Transactions on Automation Science and Engineering, 2018, 15, 1216-1229.	3.4	103

#	ARTICLE	IF	CITATIONS
19	Adaptive Safety with Control Barrier Functions. , 2020, , .		87
20	Safe certificate-based maneuvers for teams of quadrotors using differential flatness. , 2017, , .		85
21	Dynamic Humanoid Locomotion: A Scalable Formulation for HZD Gait Optimization. IEEE Transactions on Robotics, 2018, 34, 370-387.	7.3	79
22	3D Bipedal Robotic Walking: Models, Feedback Control, and Open Problems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 505-532.	0.4	74
23	FROST*: Fast robot optimization and simulation toolkit. , 2017, , .		73
24	Feedback Control of an Exoskeleton for Paraplegics: Toward Robustly Stable, Hands-Free Dynamic Walking. IEEE Control Systems, 2018, 38, 61-87.	1.0	72
25	Multi-objective compositions for collision-free connectivity maintenance in teams of mobile robots. , 2016, , .		71
26	Towards a Framework for Realizable Safety Critical Control through Active Set Invariance. , 2018, , .		71
27	Guaranteed Obstacle Avoidance for Multi-Robot Operations With Limited Actuation: A Control Barrier Function Approach. , 2021, 5, 127-132.		71
28	3D dynamic walking on stepping stones with control barrier functions. , 2016, , .		70
29	Dynamically stable bipedal robotic walking with NAO via human-inspired hybrid zero dynamics. , 2012, , .		69
30	Realizing dynamic and efficient bipedal locomotion on the humanoid robot DURUS. , 2016, , .		67
31	First Steps Towards Translating HZD Control of Bipedal Robots to Decentralized Control of Exoskeletons. IEEE Access, 2017, 5, 9919-9934.	2.6	66
32	Towards the Unification of Locomotion and Manipulation through Control Lyapunov Functions and Quadratic Programs. Lecture Notes in Control and Information Sciences, 2013, , 219-240.	0.6	64
33	Lyapunov Theory for Zeno Stability. IEEE Transactions on Automatic Control, 2013, 58, 100-112.	3.6	59
34	Control lyapunov functions and hybrid zero dynamics. , 2012, , .		52
35	Multi-Layered Safety for Legged Robots via Control Barrier Functions and Model Predictive Control. , 2021, , .		52
36	Safety barrier certificates for heterogeneous multi-robot systems. , 2016, , .		51

#	ARTICLE	IF	CITATIONS
37	Bipedal Hopping: Reduced-Order Model Embedding via Optimization-Based Control. , 2018, , .		51
38	Preference-Based Learning for Exoskeleton Gait Optimization. , 2020, , .		49
39	An Online Approach to Active Set Invariance. , 2018, , .		48
40	Stability and Completion of Zeno Equilibria in Lagrangian Hybrid Systems. IEEE Transactions on Automatic Control, 2011, 56, 1322-1336.	3.6	47
41	First steps toward translating robotic walking to prostheses: a nonlinear optimization based control approach. Autonomous Robots, 2017, 41, 725-742.	3.2	41
42	Sufficient conditions for the Lipschitz continuity of QP-based multi-objective control of humanoid robots. , 2013, , .		40
43	Multicontact Locomotion on Transfemoral Prostheses via Hybrid System Models and Optimization-Based Control. IEEE Transactions on Automation Science and Engineering, 2016, 13, 502-513.	3.4	40
44	Towards Restoring Locomotion for Paraplegics: Realizing Dynamically Stable Walking on Exoskeletons. , 2018, , .		40
45	Dynamic multi-domain bipedal walking with arias through SLIP based human-inspired control. , 2014, , .		39
46	Model-Free Safety-Critical Control for Robotic Systems. IEEE Robotics and Automation Letters, 2022, 7, 944-951.	3.3	39
47	Safety-Critical Kinematic Control of Robotic Systems. , 2022, 6, 139-144.		38
48	A geometric approach to three-dimensional hipped bipedal robotic walking. , 2007, , .		37
49	Safe Policy Synthesis in Multi-Agent POMDPs via Discrete-Time Barrier Functions. , 2019, , .		37
50	A Scalable Safety Critical Control Framework for Nonlinear Systems. IEEE Access, 2020, 8, 187249-187275.	2.6	37
51	Learning impedance controller parameters for lower-limb prostheses. , 2013, , .		36
52	First Steps toward Automatically Generating Bipedal Robotic Walking from Human Data. Lecture Notes in Control and Information Sciences, 2012, , 89-116.	0.6	36
53	On the Stability of Zeno Equilibria. Lecture Notes in Computer Science, 2006, , 34-48.	1.0	35
54	Adaptive cruise control: Experimental validation of advanced controllers on scale-model cars. , 2015, , .		35

#	ARTICLE	IF	CITATIONS
55	Dynamic Walking with Compliance on a Cassie Bipedal Robot. , 2019, , .		35
56	Comparative Analysis of Control Barrier Functions and Artificial Potential Fields for Obstacle Avoidance. , 2021, , .		35
57	Safe Controller Synthesis With Tunable Input-to-State Safe Control Barrier Functions. , 2022, 6, 908-913.		34
58	Episodic Learning with Control Lyapunov Functions for Uncertain Robotic Systems. , 2019, , .		33
59	First steps toward underactuated human-inspired bipedal robotic walking. , 2012, , .		32
60	Human-data based cost of bipedal robotic walking. , 2011, , .		31
61	Human-inspired multi-contact locomotion with AMBER2. , 2014, , .		31
62	Continuity and smoothness properties of nonlinear optimization-based feedback controllers. , 2015, , .		31
63	Lyapunov-Like Conditions for the Existence of Zeno Behavior in Hybrid and Lagrangian Hybrid Systems. , 2007, , .		30
64	Motion primitives for human-inspired bipedal robotic locomotion: walking and stair climbing. , 2012, , .		30
65	The Ach Library: A New Framework for Real-Time Communication. IEEE Robotics and Automation Magazine, 2015, 22, 76-85.	2.2	30
66	Dynamic Walking: Toward Agile and Efficient Bipedal Robots. Annual Review of Control, Robotics, and Autonomous Systems, 2021, 4, 535-572.	7.5	30
67	A Human-Inspired Hybrid Control Approach to Bipedal Robotic Walking. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 6904-6911.	0.4	28
68	Preliminary results on correct-by-construction control software synthesis for adaptive cruise control. , 2014, , .		28
69	Three-Dimensional Kneel Bipedal Walking: A Hybrid Geometric Approach. Lecture Notes in Computer Science, 2009, , 16-30.	1.0	28
70	Backup Control Barrier Functions: Formulation and Comparative Study. , 2021, , .		28
71	Multi-Rate Control Design Leveraging Control Barrier Functions and Model Predictive Control Policies. , 2021, 5, 1007-1012.		27
72	Discrete mechanics and optimal control applied to the compass gait biped. , 2007, , .		26

#	ARTICLE	IF	CITATIONS
73	Tractable terrain-aware motion planning on granular media: An impulsive jumping study. , 2016, , .		26
74	Preliminary results on energy efficient 3D prosthetic walking with a powered compliant transfemoral prosthesis. , 2017, , .		26
75	Realizing simultaneous lane keeping and adaptive speed regulation on accessible mobile robot testbeds. , 2017, , .		26
76	Bipedal Robotic Running with DURUS-2D. , 2017, , .		25
77	Parameter to state stability of control Lyapunov functions for hybrid system models of robots. Nonlinear Analysis: Hybrid Systems, 2017, 25, 174-191.	2.1	25
78	Approximate reduction of dynamic systems. Systems and Control Letters, 2008, 57, 538-545.	1.3	24
79	Data-driven control for feedback linearizable single-input systems. , 2017, , .		24
80	Safety-Critical Control of Active Interventions for COVID-19 Mitigation. IEEE Access, 2020, 8, 188454-188474.	2.6	24
81	Integral Control Barrier Functions for Dynamically Defined Control Laws. , 2021, 5, 887-892.		24
82	Mathematical equations as executable models of mechanical systems. , 2010, , .		24
83	On the Geometric Reduction of Controlled Three-Dimensional Bipedal Robotic Walkers. , 2007, , 183-196.		23
84	Interactive Multi-Modal Motion Planning With Branch Model Predictive Control. IEEE Robotics and Automation Letters, 2022, 7, 5365-5372.	3.3	23
85	Humanâ€inspired motion primitives and transitions for bipedal robotic locomotion in diverse terrain. Optimal Control Applications and Methods, 2014, 35, 730-755.	1.3	22
86	Planar multi-contact bipedal walking using hybrid zero dynamics. , 2014, , .		22
87	Coupling Reduced Order Models via Feedback Control for 3D Underactuated Bipedal Robotic Walking. , 2018, , .		22
88	Toward Specification-Guided Active Mars Exploration for Cooperative Robot Teams. , 0, , .		22
89	3-D Underactuated Bipedal Walking via H-LIP Based Gait Synthesis and Stepping Stabilization. IEEE Transactions on Robotics, 2022, 38, 2405-2425.	7.3	22
90	2D bipedal walking with knees and feet: A hybrid control approach. , 2009, , .		21

#	ARTICLE	IF	CITATIONS
91	Speed regulation in 3D robotic walking through motion transitions between Human-Inspired partial hybrid zero dynamics. , 2013, , .		21
92	Safety-Critical Control of Compartmental Epidemiological Models With Measurement Delays. , 2021, 5, 1537-1542.		21
93	Human-inspired underactuated bipedal robotic walking with AMBER on flat-ground, up-slope and uneven terrain. , 2012, , .		20
94	Abstracting Partially Feedback Linearizable Systems Compositionally. , 2017, 1, 227-232.		20
95	A Control Barrier Perspective on Episodic Learning via Projection-to-State Safety. , 2021, 5, 1019-1024.		20
96	Safety-Critical Event Triggered Control via Input-to-State Safe Barrier Functions. , 2021, 5, 749-754.		20
97	Onboard Safety Guarantees for Racing Drones: High-Speed Geofencing With Control Barrier Functions. IEEE Robotics and Automation Letters, 2022, 7, 2897-2904.	3.3	20
98	3D bipedal walking with knees and feet: A hybrid geometric approach. , 2009, , .		19
99	Human-inspired walking via unified PD and impedance control. , 2014, , .		19
100	Footstep and motion planning in semi-unstructured environments using randomized possibility graphs. , 2017, , .		19
101	Online Active Safety for Robotic Manipulators. , 2019, , .		19
102	Control Barrier Functions for Sampled-Data Systems with Input Delays. , 2020, , .		19
103	A Homology Theory for Hybrid Systems: Hybrid Homology. Lecture Notes in Computer Science, 2005, , 86-102.	1.0	18
104	Hybrid zero dynamics based multiple shooting optimization with applications to robotic walking. , 2015, , .		18
105	Model predictive control of underactuated bipedal robotic walking. , 2015, , .		18
106	Barrier Functions: Bridging the Gap between Planning from Specifications and Safety-Critical Control. , 2018, , .		18
107	Dynamic and Versatile Humanoid Walking via Embedding 3D Actuated SLIP Model With Hybrid LIP Based Stepping. IEEE Robotics and Automation Letters, 2020, 5, 6286-6293.	3.3	18
108	Towards Variable Assistance for Lower Body Exoskeletons. IEEE Robotics and Automation Letters, 2020, 5, 266-273.	3.3	18

#	ARTICLE	IF	CITATIONS
109	Data-Driven Safety-Critical Control: Synthesizing Control Barrier Functions With Koopman Operators. , 2021, 5, 2012-2017.		18
110	Risk-Averse Control via CVaR Barrier Functions: Application to Bipedal Robot Locomotion. , 2022, 6, 878-883.		18
111	Human Preference-Based Learning for High-dimensional Optimization of Exoskeleton Walking Gaits. , 2020, , .		18
112	Rank properties of poincare maps for hybrid systems with applications to bipedal walking. , 2010, , .		18
113	Nonlinear Model Predictive Control of Robotic Systems with Control Lyapunov Functions. , 0, , .		18
114	Rank deficiency and superstability of hybrid systems. Nonlinear Analysis: Hybrid Systems, 2012, 6, 787-805.	2.1	17
115	Quadratic programming and impedance control for transfemoral prosthesis. , 2014, , .		17
116	Orbit Characterization, Stabilization and Composition on 3D Underactuated Bipedal Walking via Hybrid Passive Linear Inverted Pendulum Model. , 2019, , .		17
117	Sufficient conditions for the existence of zeno behavior in a class of nonlinear hybrid systems via constant approximations. , 2007, , .		16
118	On the existence of Zeno behavior in hybrid systems with non-isolated Zeno equilibria. , 2008, , .		16
119	From Formal Methods to Algorithmic Implementation of Human Inspired Control on Bipedal Robots. Springer Tracts in Advanced Robotics, 2013, , 511-526.	0.3	16
120	Dynamic Walking on Slippery Surfaces : Demonstrating Stable Bipedal Gaits with Planned Ground Slippage. , 2019, , .		16
121	Acumen: An Open-Source Testbed for Cyber-Physical Systems Research. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2016, , 118-130.	0.2	16
122	Achieving bipedal locomotion on rough terrain through human-inspired control. , 2012, , .		15
123	Online optimal gait generation for bipedal walking robots using legendre pseudospectral optimization. , 2016, , .		15
124	Multi-contact bipedal robotic locomotion. Robotica, 2017, 35, 1072-1106.	1.3	15
125	A stability region criterion for flat-footed bipedal walking on deformable granular terrain. , 2017, , .		15
126	Input to State Stabilizing Control Lyapunov Functions for Robust Bipedal Robotic Locomotion. , 2018, , .		15

#	ARTICLE	IF	CITATIONS
127	Model-Based Adaptive Control of Transfemoral Prostheses: Theory, Simulation, and Experiments. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 1174-1191.	5.9	15
128	SLIP Walking Over Rough Terrain via H-LIP Stepping and Backstepping-Barrier Function Inspired Quadratic Program. IEEE Robotics and Automation Letters, 2021, 6, 2122-2129.	3.3	15
129	Decentralized Task and Path Planning for Multi-Robot Systems. IEEE Robotics and Automation Letters, 2021, 6, 4337-4344.	3.3	15
130	Algorithmic Foundations of Realizing Multi-Contact Locomotion on the Humanoid Robot DURUS. Springer Proceedings in Advanced Robotics, 2020, , 400-415.	0.9	15
131	Realizing underactuated bipedal walking with torque controllers via the ideal model resolved motion method. , 2015, , .		14
132	Realization of nonlinear real-time optimization based controllers on self-contained transfemoral prosthesis. , 2015, , .		14
133	Toward benchmarking locomotion economy across design configurations on the modular robot: AMBER-3M. , 2017, , .		14
134	Safety Functionals for Time Delay Systems. , 2019, , .		14
135	Online Learning of Unknown Dynamics for Model-Based Controllers in Legged Locomotion. IEEE Robotics and Automation Letters, 2021, 6, 8442-8449.	3.3	14
136	Global Position Control on Underactuated Bipedal Robots: Step-to-step Dynamics Approximation for Step Planning. , 2021, , .		14
137	Measurement-Robust Control Barrier Functions: Certainty in Safety with Uncertainty in State. , 2021, , .		14
138	Embedding of SLIP dynamics on underactuated bipedal robots through multi-objective quadratic program based control. , 2014, , .		13
139	Robust control of a powered transfemoral prosthesis device with experimental verification. , 2017, , .		13
140	A Scalable Controlled Set Invariance Framework with Practical Safety Guarantees. , 2019, , .		13
141	ROIAL: Region of Interest Active Learning for Characterizing Exoskeleton Gait Preference Landscapes. , 2021, , .		13
142	An Inverse Dynamics Approach to Control Lyapunov Functions. , 2020, , .		13
143	Enclosing the behavior of a hybrid system up to and beyond a Zeno point. , 2013, , .		12
144	First steps toward formal controller synthesis for bipedal robots with experimental implementation. Nonlinear Analysis: Hybrid Systems, 2017, 25, 155-173.	2.1	12

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145	Learning to jump in granular media: Unifying optimal control synthesis with Gaussian process-based regression. , 2017, , .		12
146	Realizable Set Invariance Conditions for Cyber-Physical Systems. , 2019, , .		12
147	First Steps Towards Full Model Based Motion Planning and Control of Quadrupeds: A Hybrid Zero Dynamics Approach. , 2019, , .		12
148	Hierarchical and Safe Motion Control for Cooperative Locomotion of Robotic Guide Dogs and Humans: A Hybrid Systems Approach. IEEE Robotics and Automation Letters, 2020, 5, 56-63.	3.3	12
149	Safety-Critical Rapid Aerial Exploration of Unknown Environments. , 2020, , .		12
150	Risk-Averse Planning Under Uncertainty. , 2020, , .		12
151	Safety and Efficiency in Robotics: The Control Barrier Functions Approach. IEEE Robotics and Automation Magazine, 2022, 29, 139-151.	2.2	12
152	Stably Extending Two-Dimensional Bipedal Walking to Three Dimensions. Proceedings of the American Control Conference, 2007, , .	0.0	11
153	Stability of Zeno equilibria in Lagrangian hybrid systems. , 2008, , .		11
154	Persistent homology for automatic determination of human-data based cost of bipedal walking. Nonlinear Analysis: Hybrid Systems, 2013, 7, 101-115.	2.1	11
155	Nonholonomic Hybrid Zero Dynamics for the Stabilization of Periodic Orbits: Application to Underactuated Robotic Walking. IEEE Transactions on Control Systems Technology, 2020, 28, 2689-2696.	3.2	11
156	Characterizing Safety: Minimal Control Barrier Functions From Scalar Comparison Systems. , 2021, 5, 523-528.		11
157	Safety-Critical Control Synthesis for Network Systems With Control Barrier Functions and Assume-Guarantee Contracts. IEEE Transactions on Control of Network Systems, 2021, 8, 487-499.	2.4	11
158	Sufficient Conditions for Zeno Behavior in Lagrangian Hybrid Systems. Lecture Notes in Computer Science, 2008, , 622-625.	1.0	11
159	Towards Robust Data-Driven Control Synthesis for Nonlinear Systems with Actuation Uncertainty. , 2021, , .		11
160	Toward a Data-Driven Template Model for Quadrupedal Locomotion. IEEE Robotics and Automation Letters, 2022, 7, 7636-7643.	3.3	11
161	Outputs of human walking for bipedal robotic controller design. , 2012, , .		10
162	Direct Collocation for Dynamic Behaviors With Nonprehensile Contacts: Application to Flipping Burgers. IEEE Robotics and Automation Letters, 2018, 3, 3677-3684.	3.3	10

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163	Distributed Collision-Free Motion Coordination on a Sphere: A Conic Control Barrier Function Approach. , 2020, 4, 976-981.		10
164	Separable Control Lyapunov Functions With Application to Prostheses. , 2021, 5, 559-564.		10
165	Evaluation of safety and performance of the self balancing walking system Atalante in patients with complete motor spinal cord injury. Spinal Cord Series and Cases, 2021, 7, 71.	0.3	10
166	Multi-Rate Control Design Under Input Constraints via Fixed-Time Barrier Functions. , 2022, 6, 608-613.		10
167	Bio-Inspired Feedback Control of Three-Dimensional Humanlike Bipedal Robots. Journal of Robotics and Mechatronics, 2012, 24, 595-601.	0.5	10
168	Optimal Safe Controller Synthesis: A Density Function Approach. , 2020, , .		10
169	Online safety calculations for glide-slope recapture. Innovations in Systems and Software Engineering, 2005, 1, 157-175.	1.6	9
170	A human-inspired framework for bipedal robotic walking design. International Journal of Biomechanics and Biomedical Robotics, 2014, 3, 20.	0.1	9
171	First steps toward formal controller synthesis for bipedal robots. , 2015, , .		9
172	Mechanics-based control of underactuated 3D robotic walking: Dynamic gait generation under torque constraints. , 2016, , .		9
173	Time dependent control Lyapunov functions and hybrid zero dynamics for stable robotic locomotion. , 2016, , .		9
174	Invariant Sets for Integrators and Quadrotor Obstacle Avoidance. , 2020, , .		9
175	Verifying Safe Transitions between Dynamic Motion Primitives on Legged Robots. , 2021, , .		9
176	Robust Stabilization of Periodic Gaits for Quadrupedal Locomotion via QP-Based Virtual Constraint Controllers. , 2022, 6, 1736-1741.		9
177	Compass gait revisited: A human data perspective with extensions to three dimensions. , 2011, , .		8
178	Quadratic program based control of fully-actuated transfemoral prosthesis for flat-ground and up-slope locomotion. , 2014, , .		8
179	Realization of stair ascent and motion transitions on prostheses utilizing optimization-based control and intent recognition. , 2015, , .		8
180	Energy shaping of hybrid systems via control Lyapunov functions. , 2015, , .		8

#	ARTICLE	IF	CITATIONS
181	Efficient HZD gait generation for three-dimensional underactuated humanoid running. , 2016, , .		8
182	Every Hop is an Opportunity: Quickly Classifying and Adapting to Terrain During Targeted Hopping. , 2019, , .		8
183	From Bipedal Walking to Quadrupedal Locomotion: Full-Body Dynamics Decomposition for Rapid Gait Generation. , 2020, , .		8
184	Coupled Control Systems: Periodic Orbit Generation With Application to Quadrupedal Locomotion. , 2021, 5, 935-940.		8
185	Compositional Set Invariance in Network Systems with Assume-Guarantee Contracts. , 2019, , .		8
186	Sequential Motion Planning for Bipedal Somersault via Flywheel SLIP and Momentum Transmission with Task Space Control. , 2020, , .		8
187	Robust Predictive Control for Quadrupedal Locomotion: Learning to Close the Gap Between Reduced- and Full-Order Models. IEEE Robotics and Automation Letters, 2022, 7, 6622-6629.	3.3	8
188	Unified Multirate Control: From Low-Level Actuation to High-Level Planning. IEEE Transactions on Automatic Control, 2022, 67, 6627-6640.	3.6	8
189	Bipedal Walking on Constrained Footholds: Momentum Regulation via Vertical COM Control. , 2022, , .		8
190	Approximate Reduction of Dynamical Systems. , 2006, , .		7
191	A Core Language for Executable Models of Cyber-Physical Systems (Preliminary Report). , 2012, , .		7
192	Human-inspired control of bipedal robots via control lyapunov functions and quadratic programs. , 2013, , .		7
193	Work those arms: Toward dynamic and stable humanoid walking that optimizes full-body motion. , 2016, , .		7
194	3D multi-contact gait design for prostheses: Hybrid system models, virtual constraints and two-step direct collocation. , 2016, , .		7
195	Improved Performance on Moving-Mass Hopping Robots with Parallel Elasticity. , 2020, , .		7
196	Learning Terrain Dynamics: A Gaussian Process Modeling and Optimal Control Adaptation Framework Applied to Robotic Jumping. IEEE Transactions on Control Systems Technology, 2021, 29, 1581-1596.	3.2	7
197	Coupled Control Lyapunov Functions for Interconnected Systems, With Application to Quadrupedal Locomotion. IEEE Robotics and Automation Letters, 2021, 6, 3761-3768.	3.3	7
198	Preference-Based Learning for User-Guided HZD Gait Generation on Bipedal Walking Robots. , 2021, , .		7

#	ARTICLE	IF	CITATIONS
199	A hybrid systems and optimization-based control approach to realizing multi-contact locomotion on transfemoral prostheses. , 2015, , .		6
200	Closed-form controlled invariant sets for pedestrian avoidance. , 2017, , .		6
201	A Control Lyapunov Perspective on Episodic Learning via Projection to State Stability. , 2019, , .		6
202	Motion Decoupling and Composition via Reduced Order Model optimization for Dynamic Humanoid Walking with CLF-QP based Active Force Control. , 2019, , .		6
203	Safety-Critical Kinematic Control of Robotic Systems. , 2021, , .		6
204	Existence of Periodic Orbits with Zeno Behavior in Completed Lagrangian Hybrid Systems. Lecture Notes in Computer Science, 2009, , 291-305.	1.0	6
205	Hybrid Geometric Reduction of Hybrid Systems. , 2006, , .		5
206	Formal and practical completion of Lagrangian hybrid systems. , 2009, , .		5
207	Characterizing knee-bounce in bipedal robotic walking. , 2011, , .		5
208	Quadratic program based nonlinear embedded control of series elastic actuators. , 2014, , .		5
209	Parameter Sensitivity and Boundedness of Robotic Hybrid Periodic Orbits**This work is supported by the National Science Foundation through grants CNS-0953823 and CNS-1136104.. IFAC-PapersOnLine, 2015, 48, 377-382.	0.5	5
210	Mechanics-based design of underactuated robotic walking gaits: Initial experimental realization. , 2016, , .		5
211	Towards real-time parameter optimization for feasible nonlinear control with applications to robot locomotion. , 2016, , .		5
212	Observer-Based Feedback Controllers for Exponential Stabilization of Hybrid Periodic Orbits: Application to Underactuated Bipedal Walking. , 2018, , .		5
213	Dynamically Stable 3D Quadrupedal Walking with Multi-Domain Hybrid System Models and Virtual Constraint Controllers. , 2019, , .		5
214	Energy-Efficient Motion Planning for Multi-Modal Hybrid Locomotion. , 2020, , .		5
215	A Constructive Method for Designing Safe Multirate Controllers for Differentially-Flat Systems. , 2022, 6, 2138-2143.		5
216	Distributed Quadratic Programming-Based Nonlinear Controllers for Periodic Gaits on Legged Robots. , 2022, , 1-1.		5

#	ARTICLE	IF	CITATIONS
217	Extending two-dimensional human-inspired bipedal robotic walking to three dimensions through geometric reduction. , 2012, , .		4
218	Bipedal robotic running with partial hybrid zero dynamics and human-inspired optimization. , 2012, , .		4
219	Hierarchical control of series elastic actuators through control Lyapunov functions. , 2014, , .		4
220	Humanoid manipulation planning using backward-forward search. , 2016, , .		4
221	Optimal Walking Speed Transitions for Fully Actuated Bipedal Robots*. , 2019, , .		4
222	Recurrent Neural Network Control of a Hybrid Dynamical Transfemoral Prosthesis with EdgeDRNN Accelerator. , 2020, , .		4
223	Certifying Safety for Nonlinear Time Delay Systems via Safety Functionals: A Discretization Based Approach. , 2021, , .		4
224	Online Decentralized Decision Making With Inequality Constraints: An ADMM approach. , 2021, 5, 2156-2161.		4
225	Sampled-Data Stabilization With Control Lyapunov Functions via Quadratically Constrained Quadratic Programs. , 2022, 6, 680-685.		4
226	Inverse Dynamics Control of Compliant Hybrid Zero Dynamic Walking. , 2021, , .		4
227	Natural Multicontact Walking for Robotic Assistive Devices via Musculoskeletal Models and Hybrid Zero Dynamics. IEEE Robotics and Automation Letters, 2022, 7, 4283-4290.	3.3	4
228	Exponential convergence of a unified CLF controller for robotic systems under parameter uncertainty. , 2014, , .		3
229	Unification of locomotion pattern generation and control Lyapunov function-based Quadratic Programs. , 2016, , .		3
230	Control of Motion and Compliance. , 2017, , 135-346.		3
231	Design and Comparative Analysis of 1D Hopping Robots. , 2019, , .		3
232	Distributed Feedback Controllers for Stable Cooperative Locomotion of Quadrupedal Robots: A Virtual Constraint Approach. , 2020, , .		3
233	Intermittent Connectivity for Exploration in Communication-Constrained Multi-Agent Systems. , 2020, , .		3
234	Iterative Model Predictive Control for Piecewise Systems. , 2022, 6, 842-847.		3

#	ARTICLE	IF	CITATIONS
235	Data-driven Characterization of Human Interaction for Model-based Control of Powered Prostheses. , 2020, , .		3
236	Powered Prosthesis Locomotion on Varying Terrains: Model-Dependent Control With Real-Time Force Sensing. IEEE Robotics and Automation Letters, 2022, 7, 5151-5158.	3.3	3
237	Robust Disturbance Rejection for Robotic Bipedal Walking: System-Level-Synthesis with Step-to-step Dynamics Approximation. , 2021, , .		3
238	Learning Controller Gains on Bipedal Walking Robots via User Preferences. , 2022, , .		3
239	Human Based Cost from Persistent Homology for Bipedal Walking. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 3292-3297.	0.4	2
240	A core language for executable models of cyber physical systems. ACM SIGBED Review, 2011, 8, 39-43.	1.8	2
241	Zeno behavior in electromechanical hybrid systems: From theory to experimental validation. , 2012, , .		2
242	Demonstration of locomotion with the powered prosthesis AMPRO utilizing online optimization-based control. , 2015, , .		2
243	Density Functions for Guaranteed Safety on Robotic Systems. , 2020, , .		2
244	Versatile Dynamic Motion Generation Framework: Demonstration With a Crutch-Less Exoskeleton on Real-Life Obstacles at the Cybathlon 2020 With a Complete Paraplegic Person. Frontiers in Robotics and AI, 2021, 8, 723780.	2.0	2
245	Towards the Unification of System Design and Motion Synthesis for High-Performance Hopping Robots. , 2021, , .		2
246	Model-Dependent Prosthesis Control with Interaction Force Estimation. , 2021, , .		2
247	Composition of Dynamical Systems for Estimation of Human Body Dynamics. , 2007, , 702-705.		2
248	Self-Supervised Online Learning for Safety-Critical Control using Stereo Vision. , 2022, , .		2
249	Complexity and fragility in stability for linear systems. , 2008, , .		1
250	Bipedal Locomotion Up Sandy Slopes: Systematic Experiments Using Zero Moment Point Methods. , 2018, , .		1
251	Exponentially Stabilizing Controllers for Multi-Contact 3D Bipedal Locomotion. , 2018, , .		1
252	Passive Dynamic Balancing and Walking in Actuated Environments. , 2020, , .		1

#	ARTICLE	IF	CITATIONS
253	Lyapunov-Like Conditions for Tight Exit Probability Bounds through Comparison Theorems for SDEs. , 2020, , .		1
254	Smooth Approximations for Hybrid Optimal Control Problems with Application to Robotic Walking. IFAC-PapersOnLine, 2021, 54, 181-186.	0.5	1
255	Composing Dynamical Systems to Realize Dynamic Robotic Dancing. Springer Tracts in Advanced Robotics, 2015, , 425-442.	0.3	1
256	Establishing trust in remotely reprogrammable systems. , 2016, , .		1
257	Quadrupedal Robotic Walking on Sloped Terrains via Exact Decomposition into Coupled Bipedal Robots. , 2020, , .		1
258	Learning to Control an Unstable System with One Minute of Data: Leveraging Gaussian Process Differentiation in Predictive Control. , 2021, , .		1
259	Estimate-to-State Stability for Hybrid Human-Prosthesis Systems. , 2021, , .		1
260	Homogeneous Semantics Preserving Deployments of Heterogeneous Networks of Embedded Systems. , 0, , 127-154.		0
261	Rank deficiency and superstability of hybrid systems with application to bipedal robots. , 2011, , .		0
262	Optimal Control of Piecewise-Smooth Control Systems via Singular Perturbations. , 2019, , .		0
263	Data-Driven Safety-Critical Control: Synthesizing Control Barrier Functions with Koopman Operators. , 2021, , .		0
264	Online decentralized decision making with inequality constraints: An ADMM approach. , 2021, , .		0
265	Disturbance Bounds for Signal Temporal Logic Task Satisfaction: A Dynamics Perspective. , 2022, 6, 2018-2023.		0