

# Ludovic D Righetti

## List of Publications by Year in descending order

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Version: 2024-02-01

98  
papers

3,848  
citations

394286

19  
h-index

265120

42  
g-index

100  
all docs

100  
docs citations

100  
times ranked

2458  
citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamic Hebbian learning in adaptive frequency oscillators. <i>Physica D: Nonlinear Phenomena</i> , 2006, 216, 269-281.	1.3	273
2	iCub: the design and realization of an open humanoid platform for cognitive and neuroscience research. <i>Advanced Robotics</i> , 2007, 21, 1151-1175.	1.1	234
3	Momentum control with hierarchical inverse dynamics on a torque-controlled humanoid. <i>Autonomous Robots</i> , 2016, 40, 473-491.	3.2	169
4	Pattern generators with sensory feedback for the control of quadruped locomotion. , 2008, , .		166
5	Programmable central pattern generators: an application to biped locomotion control. , 0, , .		164
6	Optimal distribution of contact forces with inverse-dynamics control. <i>International Journal of Robotics Research</i> , 2013, 32, 280-298.	5.8	161
7	Online movement adaptation based on previous sensor experiences. , 2011, , .		159
8	Crocodyl: An Efficient and Versatile Framework for Multi-Contact Optimal Control. , 2020, , .		127
9	An Open Torque-Controlled Modular Robot Architecture for Legged Locomotion Research. <i>IEEE Robotics and Automation Letters</i> , 2020, 5, 3650-3657.	3.3	115
10	Learning force control policies for compliant manipulation. , 2011, , .		106
11	Balancing experiments on a torque-controlled humanoid with hierarchical inverse dynamics. , 2014, , .		95
12	Inverse dynamics control of floating-base robots with external constraints: A unified view. , 2011, , .		91
13	Engineering entrainment and adaptation in limit cycle systems. <i>Biological Cybernetics</i> , 2006, 95, 645-664.	0.6	82
14	Learning of grasp selection based on shape-templates. <i>Autonomous Robots</i> , 2014, 36, 51-65.	3.2	80
15	State estimation for a humanoid robot. , 2014, , .		76
16	Learning objective functions for manipulation. , 2013, , .		72
17	Towards Associative Skill Memories. , 2012, , .		71
18	Trajectory generation for multi-contact momentum control. , 2015, , .		67

#	ARTICLE	IF	CITATIONS
19	Template-based learning of grasp selection. , 2012, , .		65
20	A convex model of humanoid momentum dynamics for multi-contact motion generation. , 2016, , .		59
21	An autonomous manipulation system based on force control and optimization. Autonomous Robots, 2014, 36, 11-30.	3.2	58
22	Passive compliant quadruped robot using Central Pattern Generators for locomotion control. , 2008, , .		55
23	On the use of simulation in robotics: Opportunities, challenges, and suggestions for moving forward. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	55
24	Structured contact force optimization for kino-dynamic motion generation. , 2016, , .		54
25	Birch tar production does not prove Neanderthal behavioral complexity. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 17707-17711.	3.3	53
26	Toward simple control for complex, autonomous robotic applications: combining discrete and rhythmic motor primitives. Autonomous Robots, 2011, 31, 155-181.	3.2	51
27	Step timing adjustment: A step toward generating robust gaits. , 2016, , .		50
28	Frequency analysis with coupled nonlinear oscillators. Physica D: Nonlinear Phenomena, 2008, 237, 1705-1718.	1.3	49
29	Learning Variable Impedance Control for Contact Sensitive Tasks. IEEE Robotics and Automation Letters, 2020, 5, 6129-6136.	3.3	45
30	The Impact of Robotics and Automation on Working Conditions and Employment [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2018, 25, 126-128.	2.2	41
31	Design methodologies for central pattern generators: an application to crawling humanoids. , 0, , .		39
32	Movement generation using dynamical systems : a humanoid robot performing a drumming task. , 2006, , .		37
33	A modular bio-inspired architecture for movement generation for the infant-like robot iCub. , 2008, , .		35
34	Walking Control Based on Step Timing Adaptation. IEEE Transactions on Robotics, 2020, 36, 629-643.	7.3	35
35	Operational Space Control of Constrained and Underactuated Systems. , 0, , .		35
36	Adaptive Frequency Oscillators and Applications. Open Cybernetics and Systemics Journal, 2009, 3, 64-69.	0.3	35

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37	Kinematic and Gait Similarities between Crawling Human Infants and Other Quadruped Mammals. <i>Frontiers in Neurology</i> , 2015, 6, 17.	1.1	32
38	Quadratic programming for inverse dynamics with optimal distribution of contact forces. , 2012, , .		30
39	Encoding of periodic and their transient motions by a single dynamic movement primitive. , 2012, , .		28
40	On Time Optimization of Centroidal Momentum Dynamics. , 2018, , .		28
41	Balancing and walking using full dynamics LQR control with contact constraints. , 2016, , .		27
42	Control of legged robots with optimal distribution of contact forces. , 2011, , .		26
43	Learning motion primitive goals for robust manipulation. , 2011, , .		26
44	Full dynamics LQR control of a humanoid robot: An experimental study on balancing and squatting. , 2014, , .		26
45	Efficient Multicontact Pattern Generation With Sequential Convex Approximations of the Centroidal Dynamics. <i>IEEE Transactions on Robotics</i> , 2021, 37, 1661-1679.	7.3	26
46	Humanoid momentum estimation using sensed contact wrenches. , 2015, , .		24
47	Controlled Reduction With Unactuated Cyclic Variables: Application to 3D Bipedal Walking With Passive Yaw Rotation. <i>IEEE Transactions on Automatic Control</i> , 2013, 58, 2679-2685.	3.6	21
48	Efficient Humanoid Contact Planning using Learned Centroidal Dynamics Prediction. , 2019, , .		21
49	Learning task error models for manipulation. , 2013, , .		20
50	Inertial sensor-based humanoid joint state estimation. , 2016, , .		20
51	High-Frequency Nonlinear Model Predictive Control of a Manipulator. , 2021, , .		19
52	Leveraging Contact Forces for Learning to Grasp. , 2019, , .		18
53	Experimental study of limit cycle and chaotic controllers for the locomotion of centipede robots. , 2008, , .		17
54	An MPC Walking Framework with External Contact Forces. , 2018, , .		16

#	ARTICLE	IF	CITATIONS
55	Unintended Consequences of Biased Robotic and Artificial Intelligence Systems [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2019, 26, 11-13.	2.2	16
56	Variable Horizon MPC With Swing Foot Dynamics for Bipedal Walking Control. IEEE Robotics and Automation Letters, 2021, 6, 2349-2356.	3.3	16
57	Unsupervised Contact Learning for Humanoid Estimation and Control. , 2018, , .		15
58	Dual execution of optimized contact interaction trajectories. , 2014, , .		14
59	Impedance Optimization for Uncertain Contact Interactions Through Risk Sensitive Optimal Control. IEEE Robotics and Automation Letters, 2021, 6, 4766-4773.	3.3	14
60	Robot Learning With Crash Constraints. IEEE Robotics and Automation Letters, 2021, 6, 1439-1446.	3.3	13
61	Stepping stabilization using a combination of DCM tracking and step adjustment. , 2016, , .		12
62	Robust Physics-based Motion Retargeting with Realistic Body Shapes. Computer Graphics Forum, 2018, 37, 81-92.	1.8	12
63	Hand placement during quadruped locomotion in a humanoid robot: A dynamical system approach. , 2007, , .		11
64	Robust Humanoid Locomotion Using Trajectory Optimization and Sample-Efficient Learning. , 2019, , .		10
65	Meta Learning via Learned Loss. , 2021, , .		10
66	Learning a Structured Neural Network Policy for a Hopping Task. IEEE Robotics and Automation Letters, 2018, 3, 4092-4099.	3.3	8
67	Robust Humanoid Contact Planning With Learned Zero- and One-Step Capturability Prediction. IEEE Robotics and Automation Letters, 2020, 5, 2451-2458.	3.3	8
68	Robust Walking Based on MPC With Viability Guarantees. IEEE Transactions on Robotics, 2022, 38, 2389-2404.	7.3	7
69	A Robustness Analysis of Inverse Optimal Control of Bipedal Walking. IEEE Robotics and Automation Letters, 2019, 4, 4531-4538.	3.3	6
70	Learning a Centroidal Motion Planner for Legged Locomotion. , 2021, , .		6
71	INVERSE DYNAMICS WITH OPTIMAL DISTRIBUTION OF GROUND REACTION FORCES FOR LEGGED ROBOTS. , 2010, , .		5
72	Enabling Remote Whole-Body Control with 5G Edge Computing. , 2020, , .		5

#	ARTICLE	IF	CITATIONS
73	Rapid Convex Optimization of Centroidal Dynamics using Block Coordinate Descent. , 2021, , .		5
74	Millimeter Wave Wireless Assisted Robot Navigation With Link State Classification. IEEE Open Journal of the Communications Society, 2022, 3, 493-507.	4.4	5
75	Exponential integration for efficient and accurate multibody simulation with stiff viscoelastic contacts. Multibody System Dynamics, 2022, 54, 443-460.	1.7	5
76	DeepQ Stepper: A framework for reactive dynamic walking on uneven terrain. , 2021, , .		4
77	A Dynamical System for Online Learning of Periodic Movements of Unknown Waveform and Frequency. , 2008, , .		3
78	Constrained accelerations for controlled geometric reduction: Sagittal-plane decoupling for bipedal locomotion. , 2010, , .		3
79	Lethal Autonomous Weapon Systems [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2018, 25, 123-126.	2.2	3
80	Learning Task-Specific Dynamics to Improve Whole-Body Control. , 2018, , .		3
81	A Real-Robot Dataset for Assessing Transferability of Learned Dynamics Models. , 2020, , .		3
82	On the Effects of Measurement Uncertainty in Optimal Control of Contact Interactions. Springer Proceedings in Advanced Robotics, 2020, , 784-799.	0.9	3
83	Slow-fast Dynamics of Strongly Coupled Adaptive Frequency Oscillators. SIAM Journal on Applied Dynamical Systems, 2021, 20, 1985-2012.	0.7	3
84	Reactive Balance Control for Legged Robots under Visco-Elastic Contacts. Applied Sciences (Switzerland), 2021, 11, 353.	1.3	3
85	Evolution of Fault-Tolerant Self-Replicating Structures. Lecture Notes in Computer Science, 2003, , 278-288.	1.0	2
86	Epstein, Project Maven, and Some Reasons to Think About Where We Get Our Funding [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2019, 26, 8-13.	2.2	2
87	A unified framework for walking and running of bipedal robots. , 2021, , .		2
88	Probabilistic depth image registration incorporating nonvisual information. , 2012, , .		1
89	Using Torque Redundancy to Optimize Contact Forces in Legged Robots. Lecture Notes in Electrical Engineering, 2013, , 35-51.	0.3	1
90	Whole-Body Control [TC Spotlight]. IEEE Robotics and Automation Magazine, 2017, 24, 12-14.	2.2	1

#	ARTICLE	IF	CITATIONS
91	Where Do We Go From Here? Debates on the Future of Robotics Research at ICRA 2019 [From the Field]. IEEE Robotics and Automation Magazine, 2019, 26, 7-10.	2.2	1
92	Growing the Humanoid Robotics Community [TC Spotlight]. IEEE Robotics and Automation Magazine, 2019, 26, 136-137.	2.2	1
93	Leveraging Forward Model Prediction Error for Learning Control. , 2021, , .		1
94	Stagewise Newton Method for Dynamic Game Control With Imperfect State Observation. , 2022, 6, 3241-3246.		1
95	AGILITY - Dynamic full body locomotion and manipulation with autonomous legged robots. , 2013, , .		0
96	Momentum-Centered Control of Contact Interactions. Springer Tracts in Advanced Robotics, 2017, , 339-359.	0.3	0
97	Learning to Explore in Motion and Interaction Tasks. , 2019, , .		0
98	Whole-Body Manipulation. , 2020, , 1-9.		0