Petar Kormushev

List of Publications by Year in descending order

81 papers	1,513 citations	840776 11 h-index	501196 28 g-index
85 all docs	85 docs citations	85 times ranked	1262 citing authors

#	Article	IF	Citations
1	GlobDesOpt: A Global Optimization Framework for Optimal Robot Manipulator Design. IEEE Access, 2022, 10, 5012-5023.	4.2	4
2	Kinematic-Model-Free Predictive Control for Robotic Manipulator Target Reaching With Obstacle Avoidance. Frontiers in Robotics and AI, 2022, 9, 809114.	3.2	5
3	Fast Online Optimization for Terrain-Blind Bipedal Robot Walking With a Decoupled Actuated SLIP Model. Frontiers in Robotics and AI, 2022, 9, 812258.	3.2	1
4	Virtual Reality Pre-Prosthetic Hand Training With Physics Simulation and Robotic Force Interaction. IEEE Robotics and Automation Letters, 2022, 7, 4550-4557.	5.1	11
5	Augmented Neural Network for Full Robot Kinematic Modelling in SE(3). IEEE Robotics and Automation Letters, 2022, 7, 7140-7147.	5.1	8
6	Model Learning With Backlash Compensation for a Tendon-Driven Surgical Robot. IEEE Robotics and Automation Letters, 2022, 7, 7958-7965.	5.1	8
7	Kinematic-Model-Free Control for Space Operations with Continuum Manipulators. , 2021, , .		5
8	Bayesian Neural Network Modeling and Hierarchical MPC for a Tendon-Driven Surgical Robot With Uncertainty Minimization. IEEE Robotics and Automation Letters, 2021, 6, 2642-2649.	5.1	10
9	Stiffness Modulation in a Humanoid Robotic Leg and Knee. IEEE Robotics and Automation Letters, 2021, 6, 2563-2570.	5.1	9
10	Kinematic-Model-Free Redundancy Resolution Using Multi-Point Tracking and Control for Robot Manipulation. Applied Sciences (Switzerland), 2021, 11, 4746.	2.5	6
11	ResQbot 2.0: An Improved Design of a Mobile Rescue Robot with an Inflatable Neck Securing Device for Safe Casualty Extraction. Applied Sciences (Switzerland), 2021, 11, 5414.	2.5	10
12	Policy manifold search. , 2021, , .		18
13	Hierarchical Decomposed-Objective Model Predictive Control for Autonomous Casualty Extraction. IEEE Access, 2021, 9, 39656-39679.	4.2	8
14	Kalibrot: A Simple-To-Use Matlab Package for Robot Kinematic Calibration. , 2021, , .		6
15	Augmenting Loss Functions of Feedforward Neural Networks with Differential Relationships for Robot Kinematic Modelling. , 2021, , .		4
16	Adaptive Kinematic Modelling for Multiobjective Control of a Redundant Surgical Robotic Tool. Robotics, 2020, 9, 68.	3.5	10
17	Scaling All-Goals Updates in Reinforcement Learning Using Convolutional Neural Networks. Proceedings of the AAAI Conference on Artificial Intelligence, 2020, 34, 5355-5362.	4.9	1
18	Kinematic-Model-Free Orientation Control for Robot Manipulation Using Locally Weighted Dual Quaternions. Robotics, 2020, 9, 76.	3.5	10

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19	The Impact of ACL Laxity on a Bicondylar Robotic Knee and Implications in Human Joint Biomechanics. IEEE Transactions on Biomedical Engineering, 2020, 67, 2817-2827.	4.2	7
20	Robot DE NIRO: A Human-Centered, Autonomous, Mobile Research Platform for Cognitively-Enhanced Manipulation. Frontiers in Robotics and AI, 2020, 7, 66.	3.2	4
21	Design and Control of SLIDER: An Ultra-lightweight, Knee-less, Low-cost Bipedal Walking Robot. , 2020, , .		12
22	Model Predictive Control for a Tendon-Driven Surgical Robot with Safety Constraints in Kinematics and Dynamics. , 2020, , .		4
23	Active learning via informed search in movement parameter space for efficient robot task learning and transfer. Autonomous Robots, 2019, 43, 1917-1935.	4.8	6
24	Sim-to-Real Learning for Casualty Detection from Ground Projected Point Cloud Data. , 2019, , .		6
25	Learning to exploit passive compliance for energy-efficient gait generation on a compliant humanoid. Autonomous Robots, 2019, 43, 79-95.	4.8	11
26	DE VITO: A Dual-Arm, High Degree-of-Freedom, Lightweight, Inexpensive, Passive Upper-Limb Exoskeleton for Robot Teleoperation. Lecture Notes in Computer Science, 2019, , 78-89.	1.3	5
27	Autonomous Air-Hockey Playing Cobot Using Optimal Control and Vision-Based Bayesian Tracking. Lecture Notes in Computer Science, 2019, , 358-369.	1.3	7
28	ResQbot. , 2018, , .		6
29	Casualty Detection from 3D Point Cloud Data for Autonomous Ground Mobile Rescue Robots. , 2018, , .		4
30	ResQbot: A Mobile Rescue Robot with Immersive Teleperception for Casualty Extraction. Lecture Notes in Computer Science, 2018, , 209-220.	1.3	11
31	Climbing over large obstacles with a humanoid robot via multi-contact motion planning. , 2017, , .		3
32	Task-Space Modular Dynamics for Dual-Arms Expressed through a Relative Jacobian. Journal of Intelligent and Robotic Systems: Theory and Applications, 2016, 83, 205-218.	3.4	24
33	The PANDORA project: A success story in AUV autonomy. , 2016, , .		15
34	Toward persistent autonomous intervention in a subsea panel. Autonomous Robots, 2016, 40, 1279-1306.	4.8	33
35	PANDORA - Persistent Autonomy Through Learning, Adaptation, Observation and Replanningâ˜…. IFAC-PapersOnLine, 2015, 48, 238-243.	0.9	13
36	Learning symbolic representations of actions from human demonstrations. , 2015, , .		39

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37	Kinematic-free position control of a 2-DOF planar robot arm. , 2015, , .		18
38	Learning multiple strategies to perform a valve turning with underwater currents using an I-AUV. , 2015, , .		12
39	Modular relative Jacobian for dual-arms and the wrench transformation matrix. , 2015, , .		12
40	Encoderless position control of a two-link robot manipulator. , 2015, , .		12
41	Online regeneration of bipedal walking gait pattern optimizing footstep placement and timing. , 2015, , .		39
42	Cognitive system for autonomous underwater intervention. Pattern Recognition Letters, 2015, 67, 91-99.	4.2	8
43	Underwater robot-object contact perception using machine learning on force/torque sensor feedback. , 2015, , .		4
44	Special Issue on Humanoid Robotics. Advanced Robotics, 2015, 29, 301-301.	1.8	0
45	Global estimation of an objectâ€™s pose using tactile sensing. Advanced Robotics, 2015, 29, 363-374.	1.8	34
46	Visuospatial Skill Learning. Studies in Systems, Decision and Control, 2015, , 75-99.	1.0	0
47	Learning reactive robot behavior for autonomous valve turning. , 2014, , .		7
48	Covariance analysis as a measure of policy robustness. , 2014, , .		0
49	Can active impedance protect robots from landing impact?. , 2014, , .		14
50	An Intervention-AUV learns how to perform an underwater valve turning. , 2014, , .		7
51	Multi-objective reinforcement learning for AUV thruster failure recovery. , 2014, , .		12
52	Robot-object contact perception using symbolic temporal pattern learning. , 2014, , .		2
53	Online discovery of AUV control policies to overcome thruster failures. , 2014, , .		12
54	Haptic exploration of unknown surfaces with discontinuities. , 2014, , .		9

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55	Development of a dynamic simulator for a compliant humanoid robot based on a symbolic multibody approach. , 2013, , .		34
56	Improving the energy efficiency of autonomous underwater vehicles by learning to model disturbances. , 2013, , .		8
57	Visuospatial skill learning for object reconfiguration tasks. , 2013, , .		11
58	Interactive robot learning of visuospatial skills. , 2013, , .		2
59	Compliant skills acquisition and multi-optima policy search with EM-based reinforcement learning. Robotics and Autonomous Systems, 2013, 61, 369-379.	5.1	46
60	Towards dynamically consistent real-time gait pattern generation for full-size humanoid robots. , 2013, , .		5
61	Hybrid gait pattern generator capable of rapid and dynamically consistent pattern regeneration. , 2013, , .		1
62	Autonomous robotic valve turning: A hierarchical learning approach. , 2013, , .		13
63	On-line identification of autonomous underwater vehicles through global derivative-free optimization. , 2013, , .		19
64	Towards valve turning with an AUV using Learning by Demonstration. , 2013, , .		5
65	Reinforcement Learning in Robotics: Applications and Real-World Challenges. Robotics, 2013, 2, 122-148.	3.5	149
66	WALKING DESPITE THE PASSIVE COMPLIANCE: TECHNIQUES FOR USING CONVENTIONAL PATTERN GENERATORS TO CONTROL INSTRINSICALLY COMPLIANT HUMANOID ROBOTS. , 2013, , .		3
67	Persistent autonomy: the challenges of the PANDORA project. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 268-273.	0.4	26
68	Learning Fast Quadruped Robot Gaits with the RL PoWER Spline Parameterization. Cybernetics and Information Technologies, 2012, 12, 66-75.	1.1	18
69	On Global Optimization of Walking Gaits for the Compliant Humanoid Robot, COMAN Using Reinforcement Learning. Cybernetics and Information Technologies, 2012, 12, 39-52.	1.1	10
70	Towards Autonomous Robotic Valve Turning. Cybernetics and Information Technologies, 2012, 12, 17-26.	1.1	50
71	Combining Local and Global Direct Derivative-Free Optimization for Reinforcement Learning. Cybernetics and Information Technologies, 2012, 12, 53-65.	1.1	13
72	Optimization of a Compact Model for the Compliant Humanoid Robot COMAN Using Reinforcement Learning. Cybernetics and Information Technologies, 2012, 12, 76-85.	1.1	1

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73	Simultaneous discovery of multiple alternative optimal policies by reinforcement learning. , 2012, , .		4
74	The anatomy of a fall: Automated real-time analysis of raw force sensor data from bipedal walking robots and humans. , 2012, , .		5
75	Challenges for the policy representation when applying reinforcement learning in robotics. , 2012, , .		6
76	Bipedal walking energy minimization by reinforcement learning with evolving policy parameterization. , 2011, , .		47
77	Upper-body kinesthetic teaching of a free-standing humanoid robot. , 2011, , .		51
78	Imitation Learning of Positional and Force Skills Demonstrated via Kinesthetic Teaching and Haptic Input. Advanced Robotics, 2011, 25, 581-603.	1.8	218
79	Bipedal walking energy minimization by reinforcement learning with evolving policy parameterization. , 2011, , .		5
80	Learning the skill of archery by a humanoid robot iCub. , 2010, , .		53
81	Robot motor skill coordination with EM-based Reinforcement Learning. , 2010, , .		163