Lorenzo Natale

List of Publications by Year
in descending order

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182	5,510	257357	143943
papers	citations	24 h-index	57 g-index

188	188	188	3917
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	ROFT: Real-Time Optical Flow-Aided 6D Object Pose and Velocity Tracking. IEEE Robotics and Automation Letters, 2022, 7, 159-166.	3.3	10
2	Handling Concurrency in Behavior Trees. IEEE Transactions on Robotics, 2022, 38, 2557-2576.	7.3	3
3	HR1 Robot: An Assistant for Healthcare Applications. Frontiers in Robotics and AI, 2022, 9, 813843.	2.0	3
4	Toward an Attentive Robotic Architecture: Learning-Based Mutual Gaze Estimation in Humanâ€“Robot Interaction. Frontiers in Robotics and AI, 2022, 9, 770165.	2.0	5
5	MaskUKF: An Instance Segmentation Aided Unscented Kalman Filter for 6D Object Pose and Velocity Tracking. Frontiers in Robotics and AI, 2021, 8, 594583.	2.0	8
6	On the Implementation of Behavior Trees in Robotics. IEEE Robotics and Automation Letters, 2021, 6, 5929-5936.	3.3	25
7	A Differentiable Extended Kalman Filter for Object Tracking Under Sliding Regime. Frontiers in Robotics and AI, 2021, 8, 686447.	2.0	0
8	Active Exploration for Obstacle Detection on a Mobile Humanoid Robot. Actuators, 2021, 10, 205.	1.2	4
9	Hand-Object Interaction: From Human Demonstrations to Robot Manipulation. Frontiers in Robotics and AI, 2021, 8, 714023.	2.0	5
10	Score to Learn: A Comparative Analysis of Scoring Functions for Active Learning in Robotics. Lecture Notes in Computer Science, 2021, , 55-67.	1.0	0
11	In Situ Translational Hand-Eye Calibration of Laser Profile Sensors using Arbitrary Objects. , 2021, , .		4
12	Fast Object Segmentation Learning with Kernel-based Methods for Robotics. , 2021, , .		4
13	Weakly-Supervised Object Detection Learning through Human-Robot Interaction. , 2021, , .		3
14	Active Perception for Ambiguous Objects Classification. , 2021, , .		0
15	Formalizing the Execution Context of Behavior Trees for Runtime Verification of Deliberative Policies. , 2021, , .		4
16	On-line object detection: a robotics challenge. Autonomous Robots, 2020, 44, 739-757.	3.2	11
17	Compact Belief State Representation for Task Planning. , 2020, , .		0
18	Act, Perceive, and Plan in Belief Space for Robot Localization. , 2020, , .		4

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19	A Flexible Software Architecture for Robotic Industrial Applications. , 2020, , .		3
20	GRASPA 1.0: GRASPA is a Robot Arm graSping Performance BenchmArk. IEEE Robotics and Automation Letters, 2020, 5, 836-843.	3.3	21
21	Tactile Sensors. , 2020, , 1-11.		0
22	The Touristic Sector in the 5G Technology Era: The 5G-TOURS Project Approach. , 2020, , .		7
23	Distributed Robotic Computing. , 2020, , 1-11.		0
24	Task Planning with Belief Behavior Trees. , 2020, , .		7
25	A Build System for Software Development in Robotic Academic Collaborative Environments. International Journal of Semantic Computing, 2019, 13, 185-205.	0.4	3
26	Adaptable Workstations for Human-Robot Collaboration: A Reconfigurable Framework for Improving Worker Ergonomics and Productivity. IEEE Robotics and Automation Magazine, 2019, 26, 14-26.	2.2	68
27	Conditional Behavior Trees: Definition, Executability, and Applications. , 2019, , .		11
28	Magnetic 3-axis Soft and Sensitive Fingertip Sensors Integration for the iCub Humanoid Robot. , 2019, , .		2
29	A Weakly Supervised Strategy for Learning Object Detection on a Humanoid Robot. , 2019, , .		5
30	Analysis and Exploitation of Synchronized Parallel Executions in Behavior Trees. , 2019, , .		7
31	Are we done with object recognition? The iCub robotâ€™s perspective. Robotics and Autonomous Systems, 2019, 112, 260-281.	3.0	32
32	Tactile Sensing. , 2019, , 2539-2561.		0
33	iCub. , 2019, , 291-323.		2
34	Automatic Creation of Large Scale Object Databases from Web Resources: A Case Study in Robot Vision. Lecture Notes in Computer Science, 2019, , 488-498.	1.0	1
35	Sensitive Manipulation: Manipulation Through Tactile Feedback. International Journal of Humanoid Robotics, 2018, 15, 1850012.	0.6	15
36	WALK-MAN Humanoid Platform. Springer Tracts in Advanced Robotics, 2018, , 495-548.	0.3	3

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37	Tactile Sensing for Manipulation. International Journal of Humanoid Robotics, 2018, 15, 1802001.	0.6	7
38	Carbon Nanofiber versus Grapheneâ€Based Stretchable Capacitive Touch Sensors for Artificial Electronic Skin. Advanced Science, 2018, 5, 1700587.	5.6	100
39	A Build System for Software Development in Robotic Academic Collaborative Environments. , 2018, , .		0
40	A New Silicone Structure for uSkinâ€”A Soft, Distributed, Digital 3-Axis Skin Sensor and Its Integration on the Humanoid Robot iCub. IEEE Robotics and Automation Letters, 2018, 3, 2584-2591.	3.3	85
41	Electronic Skin: Carbon Nanofiber versus Grapheneâ€Based Stretchable Capacitive Touch Sensors for Artificial Electronic Skin (Adv. Sci. 2/2018). Advanced Science, 2018, 5, 1870011.	5.6	5
42	What Can I Do With This Tool? Self-Supervised Learning of Tool Affordances From Their 3-D Geometry. IEEE Transactions on Cognitive and Developmental Systems, 2018, 10, 595-610.	2.6	17
43	Merging Physical and Social Interaction for Effective Human-Robot Collaboration. , 2018, , .		6
44	Speeding-Up Object Detection Training for Robotics with FALKON. , 2018, , .		13
45	Improving the Parallel Execution of Behavior Trees. , 2018, , .		20
46	Markerless Visual Servoing on Unknown Objects for Humanoid Robot Platforms. , 2018, , .		6
47	Improving Superquadric Modeling and Grasping with Prior on Object Shapes. , 2018, , .		10
48	A Framework for Fast, Autonomous, and Reliable Tool Incorporation on iCub. Frontiers in Robotics and AI, 2018, 5, 98.	2.0	3
49	YARP-ROS Inter-Operation in a 2D Navigation Task. Frontiers in Robotics and AI, 2018, 5, 5.	2.0	5
50	Design and Implementation of a YARP Device Driver Interface: The Depth-Sensor Case. Frontiers in Robotics and AI, 2018, 5, 40.	2.0	1
51	Progress in Neuroengineering for brain repair: New challenges and open issues. Brain and Neuroscience Advances, 2018, 2, 239821281877647.	1.8	27
52	iCub. , 2018, , 1-33.		0
53	The Influence of a Robot's Embodiment on Trust. , 2017, , .		15
54	Memory Unscented Particle Filter for 6-DOF Tactile Localization. IEEE Transactions on Robotics, 2017, 33, 1139-1155.	7.3	30

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55	Learning middleware models for verification of distributed control programs. Robotics and Autonomous Systems, 2017, 92, 139-151.	3.0	4
56	A novel pipeline for bi-manual handover task. Advanced Robotics, 2017, 31, 1267-1280.	1.1	4
57	Independent motion detection with event-driven cameras. , 2017, , .		22
58	A grasping approach based on superquadric models. , 2017, , .		38
59	WALKâ€MAN: A Highâ€Performance Humanoid Platform for Realistic Environments. Journal of Field Robotics, 2017, 34, 1225-1259.	3.2	175
60	Self-supervised learning of tool affordances from 3D tool representation through parallel SOM mapping. , 2017, , .		15
61	Visual end-effector tracking using a 3D model-aided particle filter for humanoid robot platforms. , 2017, , .		9
62	iCub: The not-yet-finished story of building a robot child. Science Robotics, 2017, 2, .	9.9	47
63	iCub. , 2017, , 1-33.		0
64	Incremental robot learning of new objects with fixed update time. , 2017, , .		19
65	The design and validation of the R1 personal humanoid. , 2017, , .		33
66	A parallel kinematic mechanism for the torso of a humanoid robot: Design, construction and validation. , 2017, , .		6
67	Interactive data collection for deep learning object detectors on humanoid robots. , 2017, , .		17
68	Event-driven encoding of off-the-shelf tactile sensors for compression and latency optimisation for robotic skin. , 2017, , .		34
69	Real-time Pipeline for Object Modeling and Grasping Pose Selection via Superquadric Functions. Frontiers in Robotics and AI, 2017, 4, .	2.0	0
70	Controlled tactile exploration and haptic object recognition. , 2017, , .		7
71	Tactile Sensing. , 2017, , 1-24.		2
72	The iCub Software Architecture: Evolution and Lessons Learned. Frontiers in Robotics and AI, 2016, 3, .	2.0	24

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73	The Walk-Man Robot Software Architecture. Frontiers in Robotics and AI, 2016, 3, .	2.0	7
74	Enabling Depth-Driven Visual Attention on the iCub Humanoid Robot: Instructions for Use and New Perspectives. Frontiers in Robotics and AI, 2016, 3, .	2.0	17
75	Combining sensory modalities and exploratory procedures to improve haptic object recognition in robotics. , 2016, , .		8
76	Active perception: Building objects' models using tactile exploration. , 2016, , .		32
77	A novel Bayesian filtering approach to tactile object recognition. , 2016, , .		6
78	Hierarchical grasp controller using tactile feedback. , 2016, , .		13
79	Towards automated system and experiment reproduction in robotics. , 2016, , .		11
80	Object identification from few examples by improving the invariance of a Deep Convolutional Neural Network. , 2016, , .		36
81	Robotran-YARP Interface: A Framework for Real-Time Controller Developments Based on Multibody Dynamics Simulations. Computational Methods in Applied Sciences (Springer), 2016, , 147-164.	0.1	5
82	Robots with a sense of touch. Nature Materials, 2016, 15, 921-925.	13.3	214
83	Communication channel prioritization in a publish-subscribe architecture. , 2015, , .		2
84	Learning symbolic representations of actions from human demonstrations. , 2015, , .		39
85	Highly Sensitive Soft Tactile Sensors for an Anthropomorphic Robotic Hand. IEEE Sensors Journal, 2015, 15, 4226-4233.	2.4	116
86	Tactile Superresolution and Biomimetic Hyperacuity. IEEE Transactions on Robotics, 2015, 31, 605-618.	7.3	50
87	Self-supervised learning of grasp dependent tool affordances on the iCub Humanoid robot. , 2015, , .		30
88	A best-effort approach for run-time channel prioritization in real-time robotic application. , 2015, , .		7
89	A new design of a fingertip for the iCub hand. , 2015, , .		32
90	Multi-model approach based on 3D functional features for tool affordance learning in robotics. , 2015, , .		16

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91	Transferring object grasping knowledge and skill across different robotic platforms. , 2015, , .		4
92	Object segmentation using independent motion detection. , 2015, , .		8
93	Prioritized motionâ€“force control of constrained fully-actuated robots: â€œTask Space Inverse Dynamicsâ€• Robotics and Autonomous Systems, 2015, 63, 150-157.	3.0	44
94	A Generic Testing Framework for Test Driven Development of Robotic Systems. Lecture Notes in Computer Science, 2015, , 216-225.	1.0	6
95	Asynchronous visual event-based time-to-contact. Frontiers in Neuroscience, 2014, 8, 9.	1.4	31
96	Contact force estimation from flexible tactile sensor values considering hysteresis by Gaussian process. , 2014, , .		2
97	Gaze stabilization for humanoid robots: A comprehensive framework. , 2014, , .		9
98	The Fourth IEEE International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EpiRob) 2014: Conference Summary and Report. IEEE Transactions on Autonomous Mental Development, 2014, 6, 243-243.	2.3	0
99	An alternative approach to robot safety. , 2014, , .		7
100	Enhancing software module reusability using port plug-ins: An experiment with the iCub robot. , 2014, , .		2
101	Partial force control of constrained floating-base robots. , 2014, , .		10
102	Compensation for tactile hysteresis using Gaussian process with sensory Markov property. , 2014, , .		4
103	Prioritized optimal control. , 2014, , .		12
104	Autonomous online generation of a motor representation of the workspace for intelligent whole-body reaching. Robotics and Autonomous Systems, 2014, 62, 556-567.	3.0	18
105	Developmental Perception of the Self and Action. IEEE Transactions on Neural Networks and Learning Systems, 2014, 25, 183-202.	7.2	26
106	Control of physical interaction through tactile and force sensing during visually guided reaching. , 2014, , .		3
107	Exploiting global force torque measurements for local compliance estimation in tactile arrays. , 2014, , .		8
108	Sensorimotor Coordination in a Humanoid Robot: Building Intelligence on the iCub. , 2014, , 155-197.		1

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109	Reverse Engineering of Middleware for Verification of Robot Control Architectures. Lecture Notes in Computer Science, 2014, , 315-326.	1.0	2
110	Yarp Based Plugins for Gazebo Simulator. Lecture Notes in Computer Science, 2014, , 333-346.	1.0	21
111	Active contour following to explore object shape with robot touch. , 2013, , .		54
112	iCub World: Friendly Robots Help Building Good Vision Data-Sets. , 2013, , .		15
113	Perception during interaction is not based on statistical context. , 2013, , .		4
114	A Flexible and Robust Large Scale Capacitive Tactile System for Robots. IEEE Sensors Journal, 2013, 13, 3910-3917.	2.4	182
115	A port-arbitrated mechanism for behavior selection in humanoid robotics. , 2013, , .		5
116	Exploring affordances and tool use on the iCub. , 2013, , .		51
117	Inertial parameter identification including friction and motor dynamics. , 2013, , .		12
118	Developmental action perception for manipulative interaction. , 2013, , .		1
119	Action learning based on developmental body perception. , 2013, , .		3
120	Weakly supervised strategies for natural object recognition in robotics. , 2013, , .		18
121	On the impact of learning hierarchical representations for visual recognition in robotics. , 2013, , .		9
122	Advances in tactile sensing and touch based human-robot interaction. , 2012, , .		3
123	Imitation learning of non-linear point-to-point robot motions using dirichlet processes. , 2012, , .		15
124	A heteroscedastic approach to independent motion detection for actuated visual sensors. , 2012, , .		11
125	AUTONOMOUS ONLINE LEARNING OF REACHING BEHAVIOR IN A HUMANOID ROBOT. International Journal of Humanoid Robotics, 2012, 09, 1250017.	0.6	41
126	THE DESIGN OF THE iCub HUMANOID ROBOT. International Journal of Humanoid Robotics, 2012, 09, 1250027.	0.6	81

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127	Interactive online learning of the kinematic workspace of a humanoid robot. , 2012, , .		9
128	Learning the reachable space of a humanoid robot: A bio-inspired approach. , 2012, , .		5
129	Force feedback exploiting tactile and proximal force/torque sensing. Autonomous Robots, 2012, 33, 381-398.	3.2	74
130	Comparison between Two Implementations of iCub's Fingertip. Procedia Engineering, 2012, 47, 1231-1234.	1.2	1
131	Towards a Platform-Independent Cooperative Human Robot Interaction System: III An Architecture for Learning and Executing Actions and Shared Plans. IEEE Transactions on Autonomous Mental Development, 2012, 4, 239-253.	2.3	71
132	Control of contact forces: The role of tactile feedback for contact localization. , 2012, , .		18
133	The iCub project: An open source platform for research in embodied cognition. , 2011, , .		7
134	Improvement of tactile capacitive sensors of the humanoid robot iCub's fingertips. , 2011, , .		1
135	Methods and Technologies for the Implementation of Large-Scale Robot Tactile Sensors. IEEE Transactions on Robotics, 2011, 27, 389-400.	7.3	347
136	Towards a platform-independent cooperative human-robot interaction system: II. Perception, execution and imitation of goal directed actions. , 2011, , .		8
137	Online multiple instance learning applied to hand detection in a humanoid robot. , 2011, , .		14
138	Reexamining Lucas-Kanade method for real-time independent motion detection: Application to the iCub humanoid robot. , 2011, , .		23
139	Active perception for action mirroring. , 2011, , .		0
140	Learning task space control through goal directed exploration. , 2011, , .		14
141	Cognitive robotics - active perception of the self and others. , 2011, , .		3
142	Skin spatial calibration using force/torque measurements. , 2011, , .		35
143	Skin spatial calibration using force/torque measurements. , 2011, , .		2
144	Online movement adaptation based on previous sensor experiences. , 2011, , .		4

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145	Reexamining Lucas-Kanade method for real-time independent motion detection: Application to the iCub humanoid robot. , 2011, , .		3
146	Recursive state-parameter estimation of haptic robotic systems. , 2011, , .		0
147	A comparison between joint level torque sensing and proximal F/T sensor torque estimation: Implementation on the iCub. , 2011, , .		1
148	Online multiple instance learning applied to hand detection in a humanoid robot. , 2011, , .		0
149	The iCubÂhumanoid robot: An open-systems platform for research in cognitive development. Neural Networks, 2010, 23, 1125-1134.	3.3	460
150	Exploiting proximal F/T measurements for the iCub active compliance. , 2010, , .		20
151	Design, realization and sensorization of the dexterous iCub hand. , 2010, , .		51
152	A tactile sensor for the fingertips of the humanoid robot iCub. , 2010, , .		78
153	Safe and effective learning: A case study. , 2010, , .		7
154	An experimental evaluation of a novel minimum-jerk cartesian controller for humanoid robots. , 2010, , .		132
155	Touch sensors for humanoid hands. , 2010, , .		17
156	Towards a platform-independent cooperative human-robot interaction system: I. Perception. , 2010, , .		22
157	Machine-learning based control of a human-like tendon-driven neck. , 2010, , .		11
158	Human-Robot Cooperation Based on Interaction Learning. Studies in Computational Intelligence, 2010, , 491-536.	0.7	11
159	Learning to Exploit Proximal Force Sensing: A Comparison Approach. Studies in Computational Intelligence, 2010, , 149-167.	0.7	19
160	Safe Learning with Real-Time Constraints: A Case Study. Lecture Notes in Computer Science, 2010, , 133-142.	1.0	0
161	A force sensor for the control of a human-like tendon driven neck. , 2009, , .		11
162	Joint torque sensing for the upper-body of the iCub humanoid robot. , 2009, , .		31

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163	Cognitive Systems Platforms using Open Source. , 2009, , 139-168.		1
164	Towards long-lived robot genes. Robotics and Autonomous Systems, 2008, 56, 29-45.	3.0	141
165	Shared challenges in object perception for robots and infants. Infant and Child Development, 2008, 17, 7-24.	0.9	23
166	Anticipation and initiative in human-humanoid interaction. , 2008, , .		26
167	A prototype fingertip with high spatial resolution pressure sensing for the robot iCub. , 2008, , .		19
168	A modular bio-inspired architecture for movement generation for the infant-like robot iCub. , 2008, , .		35
169	The iCub humanoid robot. , 2008, , .		404
170	An open-source simulator for cognitive robotics research. , 2008, , .		119
171	Autonomous learning of 3D reaching in a humanoid robot. , 2007, , .		25
172	Learning precise 3D reaching in a humanoid robot. , 2007, , .		20
173	Sensorimotor coordination in a â€œbabyâ€•robot: learning about objects through grasping. Progress in Brain Research, 2007, 164, 403-424.	0.9	15
174	YARP: Yet Another Robot Platform. International Journal of Advanced Robotic Systems, 2006, 3, 8.	1.3	373
175	Understanding mirror neurons. Interaction Studies, 2006, 7, 197-232.	0.4	60
176	Development of auditory-evoked reflexes: Visuo-acoustic cues integration in a binocular head. Robotics and Autonomous Systems, 2002, 39, 87-106.	3.0	24
177	Learning to Act on Objects. Lecture Notes in Computer Science, 2002, , 567-575.	1.0	3
178	Exploiting eye-head-arm coordination for the cognitive development of a baby humanoid. , 0, , .		0
179	Learning about objects through action - initial steps towards artificial cognition. , 0, , .		141
180	From sensorimotor development to object perception. , 0, , .		8

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181	Exploring the world through grasping: a developmental approach. , 0, , .		16
182	A Cartesian 6-DoF Gaze Controller for Humanoid Robots. , 0, , .		39