Francesco Lacquaniti

List of Publications by Year
in descending order

133 papers	9,188 citations	50170 46 h-index	45213 90 g-index
133 all docs	133 docs citations	133 times ranked	5526 citing authors

#	Article	IF	Citations
1	The law relating the kinematic and figural aspects of drawing movements. Acta Psychologica, 1983, 54, 115-130.	0.7	620
2	Control of Fast-Reaching Movements by Muscle Synergy Combinations. Journal of Neuroscience, 2006, 26, 7791-7810.	1.7	591
3	Locomotor Primitives in Newborn Babies and Their Development. Science, 2011, 334, 997-999.	6.0	552
4	Coordination of Locomotion with Voluntary Movements in Humans. Journal of Neuroscience, 2005, 25, 7238-7253.	1.7	359
5	Representation of Visual Gravitational Motion in the Human Vestibular Cortex. Science, 2005, 308, 416-419.	6.0	278
6	Patterned control of human locomotion. Journal of Physiology, 2012, 590, 2189-2199.	1.3	258
7	Motor Control Programs and Walking. Neuroscientist, 2006, 12, 339-348.	2.6	229
8	Modulation of Phasic and Tonic Muscle Synergies With Reaching Direction and Speed. Journal of Neurophysiology, 2008, 100, 1433-1454.	0.9	226
9	Visuo-motor coordination and internal models for object interception. Experimental Brain Research, 2009, 192, 571-604.	0.7	217
10	Multiple Levels of Representation of Reaching in the Parieto-frontal Network. Cerebral Cortex, 2003, 13, 1009-1022.	1.6	210
11	Modular Control of Limb Movements during Human Locomotion. Journal of Neuroscience, 2007, 27, 11149-11161.	1.7	206
12	Internal Models of Target Motion: Expected Dynamics Overrides Measured Kinematics in Timing Manual Interceptions. Journal of Neurophysiology, 2004, 91, 1620-1634.	0.9	200
13	Modeling psychophysical data at the population-level: The generalized linear mixed model. Journal of Vision, 2012, 12, 26-26.	0.1	159
14	Distributed plasticity of locomotor pattern generators in spinal cord injured patients. Brain, 2004, 127, 1019-1034.	3.7	158
15	Central representations of human limb movement as revealed by studies of drawing and handwriting. Trends in Neurosciences, 1989, 12, 287-291.	4.2	157
16	Temporal Components of the Motor Patterns Expressed by the Human Spinal Cord Reflect Foot Kinematics. Journal of Neurophysiology, 2003, 90, 3555-3565.	0.9	157
17	Control of reaching movements by muscle synergy combinations. Frontiers in Computational Neuroscience, 2013, 7, 42.	1.2	146
18	Development of pendulum mechanism and kinematic coordination from the first unsupported steps in toddlers. Journal of Experimental Biology, 2004, 207, 3797-3810.	0.8	134

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19	Anticipating the Effects of Gravity When Intercepting Moving Objects: Differentiating Up and Down Based on Nonvisual Cues. Journal of Neurophysiology, 2005, 94, 4471-4480.	0.9	117
20	EMG patterns during assisted walking in the exoskeleton. Frontiers in Human Neuroscience, 2014, 8, 423.	1.0	106
21	Motor Patterns During Walking on a Slippery Walkway. Journal of Neurophysiology, 2010, 103, 746-760.	0.9	102
22	Cognitive, perceptual and action-oriented representations of falling objects. Neuropsychologia, 2005, 43, 178-188.	0.7	101
23	Development of Independent Walking in Toddlers. Exercise and Sport Sciences Reviews, 2007, 35, 67-73.	1.6	98
24	Can modular strategies simplify neural control of multidirectional human locomotion?. Journal of Neurophysiology, 2014, 111, 1686-1702.	0.9	97
25	Simulated self-motion in a visual gravity field: Sensitivity to vertical and horizontal heading in the human brain. NeuroImage, 2013, 71, 114-124.	2.1	95
26	Development of a kinematic coordination pattern in toddler locomotion: planar covariation. Experimental Brain Research, 2001, 137, 455-466.	0.7	93
27	Internal models and prediction of visual gravitational motion. Vision Research, 2008, 48, 1532-1538.	0.7	93
28	Role of the Insula and Vestibular System in Patients with Chronic Subjective Dizziness: An fMRI Study Using Sound-Evoked Vestibular Stimulation. Frontiers in Behavioral Neuroscience, 2015, 9, 334.	1.0	93
29	Automatic control of limb movement and posture. Current Opinion in Neurobiology, 1992, 2, 807-814.	2.0	92
30	Superposition and modulation of muscle synergies for reaching in response to a change in target location. Journal of Neurophysiology, 2011, 106, 2796-2812.	0.9	91
31	Development of human locomotion. Current Opinion in Neurobiology, 2012, 22, 822-828.	2.0	89
32	Effect of gaze on postural responses to neck proprioceptive and vestibular stimulation in humans. Journal of Physiology, 1999, 519, 301-314.	1.3	88
33	Contributions of the Human Temporoparietal Junction and MT/V5+ to the Timing of Interception Revealed by Transcranial Magnetic Stimulation. Journal of Neuroscience, 2008, 28, 12071-12084.	1.7	88
34	Ocular tracking of occluded ballistic trajectories: Effects of visual context and of target law of motion. Journal of Vision, 2019, 19, 13.	0.1	82
35	The many roles of vision during walking. Experimental Brain Research, 2010, 206, 337-350.	0.7	79
36	Vestibular Nuclei and Cerebellum Put Visual Gravitational Motion in Context. Journal of Neurophysiology, 2008, 99, 1969-1982.	0.9	76

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37	Visual perception and interception of falling objects: a review of evidence for an internal model of gravity. Journal of Neural Engineering, 2005, 2, S198-S208.	1.8	75
38	Anticipatory and reflex coactivation of antagonist muscles in catching. Brain Research, 1987, 406, 373-378.	1.1	68
39	Fast Adaptation of the Internal Model of Gravity for Manual Interceptions: Evidence for Event-Dependent Learning. Journal of Neurophysiology, 2005, 93, 1055-1068.	0.9	61
40	Visual gravitational motion and the vestibular system in humans. Frontiers in Integrative Neuroscience, 2013, 7, 101.	1.0	61
41	Early motor influences on visuomotor transformations for reaching: a positive image of optic ataxia. Experimental Brain Research, 1998, 123, 172-189.	0.7	57
42	Dimensionality of joint torques and muscle patterns for reaching. Frontiers in Computational Neuroscience, 2014, 8, 24.	1.2	57
43	Function dictates the phase dependence of vision during human locomotion. Journal of Neurophysiology, 2014, 112, 165-180.	0.9	55
44	Gravity in the Brain as a Reference for Space and Time Perception. Multisensory Research, 2015, 28, 397-426.	0.6	54
45	When Up Is Down in 0g: How Gravity Sensing Affects the Timing of Interceptive Actions. Journal of Neuroscience, 2012, 32, 1969-1973.	1.7	53
46	Catching What We Can't See: Manual Interception of Occluded Fly-Ball Trajectories. PLoS ONE, 2012, 7, e49381.	1.1	51
47	Evolutionary and Developmental Modules. Frontiers in Computational Neuroscience, 2013, 7, 61.	1.2	50
48	Internal Model of Gravity for Hand Interception: Parametric Adaptation to Zero-Gravity Visual Targets on Earth. Journal of Neurophysiology, 2005, 94, 1346-1357.	0.9	49
49	Migration of Motor Pool Activity in the Spinal Cord Reflects Body Mechanics in Human Locomotion. Journal of Neurophysiology, 2010, 104, 3064-3073.	0.9	49
50	Different motor imagery modes following brain damage. Cortex, 2010, 46, 1016-1030.	1.1	49
51	Kinematics in Newly Walking Toddlers Does Not Depend Upon Postural Stability. Journal of Neurophysiology, 2005, 94, 754-763.	0.9	48
52	Review Article: Plasticity of Spinal Centers in Spinal Cord Injury Patients: New Concepts for Gait Evaluation and Training. Neurorehabilitation and Neural Repair, 2007, 21, 358-365.	1.4	48
53	Kinematic cues and recognition of self-generated actions. Experimental Brain Research, 2007, 177, 31-44.	0.7	48
54	Multisensory Integration and Internal Models for Sensing Gravity Effects in Primates. BioMed Research International, 2014, 2014, 1-10.	0.9	48

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55	Catching a Ball at the Right Time and Place: Individual Factors Matter. PLoS ONE, 2012, 7, e31770.	1.1	47
56	Personality traits modulate subcortical and cortical vestibular and anxiety responses to sound-evoked otolithic receptor stimulation. Journal of Psychosomatic Research, 2014, 77, 391-400.	1.2	47
57	Visual gravity cues in the interpretation of biological movements: neural correlates in humans. NeuroImage, 2015, 104, 221-230.	2.1	46
58	Locomotor-Like Leg Movements Evoked by Rhythmic Arm Movements in Humans. PLoS ONE, 2014, 9, e90775.	1.1	45
59	Control of Foot Trajectory in Walking Toddlers: Adaptation to Load Changes. Journal of Neurophysiology, 2007, 97, 2790-2801.	0.9	43
60	Correction and suppression of reaching movements in the cerebral cortex: Physiological and neuropsychological aspects. Neuroscience and Biobehavioral Reviews, 2014, 42, 232-251.	2.9	43
61	Kinematic Strategies in Newly Walking Toddlers Stepping Over Different Support Surfaces. Journal of Neurophysiology, 2010, 103, 1673-1684.	0.9	42
62	Hand interception of occluded motion in humans: a test of model-based vs. on-line control. Journal of Neurophysiology, 2015, 114, 1577-1592.	0.9	40
63	Early emergence of temporal co-ordination of lower limb segments elevation angles in human locomotion. Neuroscience Letters, 2001, 308, 123-127.	1.0	39
64	Processing of Targets in Smooth or Apparent Motion Along the Vertical in the Human Brain: An fMRI Study. Journal of Neurophysiology, 2010, 103, 360-370.	0.9	39
65	Filling gaps in visual motion for target capture. Frontiers in Integrative Neuroscience, 2015, 9, 13.	1.0	39
66	Gaze Behavior in One-Handed Catching and Its Relation with Interceptive Performance: What the Eyes Can't Tell. PLoS ONE, 2015, 10, e0119445.	1.1	39
67	Gait transitions in simulated reduced gravity. Journal of Applied Physiology, 2011, 110, 781-788.	1.2	38
68	Optimal walking speed following changes in limb geometry. Journal of Experimental Biology, 2011, 214, 2276-2282.	0.8	38
69	Gait Patterns in Patients with Hereditary Spastic Paraparesis. PLoS ONE, 2016, 11, e0164623.	1.1	38
70	Spinal motor outputs during step-to-step transitions of diverse human gaits. Frontiers in Human Neuroscience, 2014, 8, 305.	1.0	37
71	Extrapolation of vertical target motion through a brief visual occlusion. Experimental Brain Research, 2010, 201, 365-384.	0.7	35
72	Human Locomotion under Reduced Gravity Conditions: Biomechanical and Neurophysiological Considerations. BioMed Research International, 2014, 2014, 1-12.	0.9	34

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73	Changes in the Limb Kinematics and Walking-Distance Estimation After Shank Elongation: Evidence for a Locomotor Body Schema?. Journal of Neurophysiology, 2009, 101, 1419-1429.	0.9	32
74	Smooth changes in the EMG patterns during gait transitions under body weight unloading. Journal of Neurophysiology, 2011, 106, 1525-1536.	0.9	32
75	Planar Covariation of Hindlimb and Forelimb Elevation Angles during Terrestrial and Aquatic Locomotion of Dogs. PLoS ONE, 2015, 10, e0133936.	1.1	32
76	Human Locomotion in Hypogravity: From Basic Research to Clinical Applications. Frontiers in Physiology, 2017, 8, 893.	1.3	31
77	Structural connectome and connectivity lateralization of the multimodal vestibular cortical network. NeuroImage, 2020, 222, 117247.	2.1	31
78	Backward walking highlights gait asymmetries in children with cerebral palsy. Journal of Neurophysiology, 2018, 119, 1153-1165.	0.9	30
79	Tempo Rubatoâ€Š: Animacy Speeds Up Time in the Brain. PLoS ONE, 2010, 5, e15638.	1.1	29
80	Eye movements and manual interception of ballistic trajectories: effects of law of motion perturbations and occlusions. Experimental Brain Research, 2015, 233, 359-374.	0.7	29
81	A kinematic synergy for terrestrial locomotion shared by mammals and birds. ELife, 2018, 7, .	2.8	29
82	The speed-curvature power law of movements: a reappraisal. Experimental Brain Research, 2018, 236, 69-82.	0.7	28
83	Processing of visual gravitational motion in the peri-sylvian cortex: Evidence from brain-damaged patients. Cortex, 2016, 78, 55-69.	1.1	26
84	Intercepting virtual balls approaching under different gravity conditions: evidence for spatial prediction. Journal of Neurophysiology, 2017, 118, 2421-2434.	0.9	26
85	Emergence of Different Gaits in Infancy: Relationship Between Developing Neural Circuitries and Changing Biomechanics. Frontiers in Bioengineering and Biotechnology, 2020, 8, 473.	2.0	25
86	Detecting temporal reversals in human locomotion. Experimental Brain Research, 2011, 214, 93-103.	0.7	23
87	How long did it last? You would better ask a human. Frontiers in Neurorobotics, 2014, 8, 2.	1.6	23
88	Anticipating the effects of visual gravity during simulated self-motion: estimates of time-to-passage along vertical and horizontal paths. Experimental Brain Research, 2013, 229, 579-586.	0.7	22
89	Path integration in 3D from visual motion cues: A human fMRI study. NeuroImage, 2016, 142, 512-521.	2.1	22
90	Changes of Gait Kinematics in Different Simulators of Reduced Gravity. Journal of Motor Behavior, 2013, 45, 495-505.	0.5	21

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91	Perceptual-motor styles. Experimental Brain Research, 2021, 239, 1359-1380.	0.7	21
92	Brain Correlates of Persistent Postural-Perceptual Dizziness: A Review of Neuroimaging Studies. Journal of Clinical Medicine, 2021, 10, 4274.	1.0	21
93	Neural Extrapolation of Motion for a Ball Rolling Down an Inclined Plane. PLoS ONE, 2014, 9, e99837.	1.1	20
94	Tonic and Rhythmic Spinal Activity Underlying Locomotion. Current Pharmaceutical Design, 2017, 23, 1753-1763.	0.9	20
95	Unfamiliar Walking Movements Are Detected Early in the Visual Stream: An fMRI Study. Cerebral Cortex, 2015, 25, 2022-2034.	1.6	19
96	Time perception of action photographs is more precise than that of still photographs. Experimental Brain Research, 2011, 210, 25-32.	0.7	18
97	Differential contributions to the interception of occluded ballistic trajectories by the temporoparietal junction, area hMT/V5+, and the intraparietal cortex. Journal of Neurophysiology, 2017, 118, 1809-1823.	0.9	18
98	Rolling Motion Along an Incline: Visual Sensitivity to the Relation Between Acceleration and Slope. Frontiers in Neuroscience, 2018, 12, 406.	1.4	18
99	A novel method for measuring gaze orientation in space in unrestrained head conditions. Journal of Vision, 2013, 13, 28-28.	0.1	17
100	Modular motor control of the sound limb in gait of people with trans-femoral amputation. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 132.	2.4	17
101	Age-related changes in the neuromuscular control of forward and backward locomotion. PLoS ONE, 2021, 16, e0246372.	1.1	17
102	Control of Leg Movements Driven by EMG Activity of Shoulder Muscles. Frontiers in Human Neuroscience, 2014, 8, 838.	1.0	15
103	Tapping into rhythm generation circuitry in humans during simulated weightlessness conditions. Frontiers in Systems Neuroscience, 2015, 9, 14.	1.2	15
104	Sound-evoked vestibular stimulation affects the anticipation of gravity effects during visual self-motion. Experimental Brain Research, 2015, 233, 2365-2371.	0.7	15
105	The speedâ€“curvature power law in Drosophila larval locomotion. Biology Letters, 2016, 12, 20160597.	1.0	15
106	Virtual reality: a tutorial. Electroencephalography and Clinical Neurophysiology - Electromyography and Motor Control, 1998, 109, 1-9.	1.4	14
107	Knowledge of oneâ€™s kinematics improves perceptual discrimination. Consciousness and Cognition, 2007, 16, 178-188.	0.8	14
108	Implied Dynamics Biases the Visual Perception of Velocity. PLoS ONE, 2014, 9, e93020.	1.1	14

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109	Drawing ellipses in water: evidence for dynamic constraints in the relation between velocity and path curvature. Experimental Brain Research, 2016, 234, 1649-1657.	0.7	14
110	Muscle Coordination and Locomotion in Humans. Current Pharmaceutical Design, 2017, 23, 1821-1833.	0.9	12
111	Mental imagery of gravitational motion. Cortex, 2017, 95, 172-191.	1.1	11
112	Body orientation contributes to modelling the effects of gravity for target interception in humans. Journal of Physiology, 2019, 597, 2021-2043.	1.3	11
113	Motion direction, luminance contrast, and speed perception: An unexpected meeting. Journal of Vision, 2019, 19, 16.	0.1	10
114	Humans Running in Place on Water at Simulated Reduced Gravity. PLoS ONE, 2012, 7, e37300.	1.1	10
115	Mapping Muscles Activation to Force Perception during Unloading. PLoS ONE, 2016, 11, e0152552.	1.1	10
116	Development of Locomotor-Related Movements in Early Infancy. Frontiers in Cellular Neuroscience, 2020, 14, 623759.	1.8	9
117	Observing human movements helps decoding environmental forces. Experimental Brain Research, 2011, 215, 53-63.	0.7	8
118	Grasping in One-Handed Catching in Relation to Performance. PLoS ONE, 2016, 11, e0158606.	1.1	8
119	Neuromuscular Age-Related Adjustment of Gait When Moving Upwards and Downwards. Frontiers in Human Neuroscience, 2021, 15, 749366.	1.0	8
120	The perception of visible speech: estimation of speech rate and detection of time reversals. Experimental Brain Research, 2011, 215, 141-161.	0.7	7
121	Grip forces during fast point-to-point and continuous hand movements. Experimental Brain Research, 2015, 233, 3201-3220.	0.7	6
122	A Novel Device Decoupling Tactile Slip and Hand Motion in Reaching Tasks: The HaptiTrack Device. IEEE Transactions on Haptics, 2021, 14, 1-1.	1.8	4
123	Mental imagery of object motion in weightlessness. Npj Microgravity, 2021, 7, 50.	1.9	3
124	Are we ready to move beyond the reductionist approach of classical synergy control?. Physics of Life Reviews, 2016, 17, 38-39.	1.5	2
125	Tickâ€tock, spinal motor neurons go with the cortical clock in young infants. Journal of Physiology, 2017, 595, 2405-2406.	1.3	2
126	Asymmetries in initiation of aiming movements in schizophrenia. Neuropsychologia, 2018, 109, 200-207.	0.7	2

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127	Relation between Step-To-Step Transition Strategies and Walking Pattern in Older Adults. Applied Sciences (Switzerland), 2022, 12, 5055.	1.3	2
128	Compensation for time delays is better achieved in time than in space. Behavioral and Brain Sciences, 2008, 31, 221-222.	0.4	1
129	Dealing with individual variability: When telling what is real depends on telling who is acting. Neuroscience Letters, 2011, 498, 6-9.	1.0	1
130	The Effects of Visual Parabolic Motion on the Subjective Vertical and on Interception. Neuroscience, 2021, 453, 124-137.	1.1	1
131	Internalization of physical laws as revealed by the study of action instead of perception. Behavioral and Brain Sciences, 2001, 24, 684-685.	0.4	0
132	Editorial. Experimental Brain Research, 2010, 200, 1-2.	0.7	0
133	Nonâ€synergistic synergies of muscle activation: an apparent oxymoron. Journal of Physiology, 2019, 597, 5743-5744.	1.3	0