Noah J Cowan

List of Publications by Year
in descending order

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92	4,477	236925 25	138484 58
papers	citations	h-index	g-index

114	114	114	2633
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Mechanics of Precurved-Tube Continuum Robots. IEEE Transactions on Robotics, 2009, 25, 67-78.	10.3	400
2	Nodal Dynamics, Not Degree Distributions, Determine the Structural Controllability of Complex Networks. PLoS ONE, 2012, 7, e38398.	2.5	225
3	Toward Active Cannulas: Miniature Snake-Like Surgical Robots. , 2006, , .		185
4	Equilibrium Conformations of Concentric-tube Continuum Robots. International Journal of Robotics Research, 2010, 29, 1263-1280.	8.5	181
5	Visual servoing via navigation functions. IEEE Transactions on Automation Science and Engineering, 2002, 18, 521-533.	2.3	163
6	Robot-Assisted Needle Steering. IEEE Robotics and Automation Magazine, 2011, 18, 35-46.	2.0	146
7	Image Guidance of Flexible Tip-Steerable Needles. IEEE Transactions on Robotics, 2009, 25, 191-196.	10.3	115
8	Feedback Control as a Framework for Understanding Tradeoffs in Biology. Integrative and Comparative Biology, 2014, 54, 223-237.	2.0	105
9	Task-level control of rapid wall following in the American cockroach. Journal of Experimental Biology, 2006, 209, 1617-1629.	1.7	94
10	Flexible strategies for flight control: an active role for the abdomen. Journal of Experimental Biology, 2013, 216, 1523-1536.	1.7	94
11	The Critical Role of Locomotion Mechanics in Decoding Sensory Systems. Journal of Neuroscience, 2007, 27, 1123-1128.	3.6	89
12	Mutually opposing forces during locomotion can eliminate the tradeoff between maneuverability and stability. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18798-18803.	7.1	89
13	Modeling and Control of Needles With Torsional Friction. IEEE Transactions on Biomedical Engineering, 2009, 56, 2905-2916.	4.2	85
14	Robotic Needle Steering: Design, Modeling, Planning, and Image Guidance. , 2011, , 557-582.		74
15	Recalibration of path integration in hippocampal place cells. Nature, 2019, 566, 533-537.	27.8	72
16	Integrated planning and image-guided control for planar needle steering. , 2008, 2008, 819-824.		71
17	Active sensing via movement shapes spatiotemporal patterns of sensory feedback. Journal of Experimental Biology, 2012, 215, 1567-1574.	1.7	64
18	Stimulus predictability mediates a switch in locomotor smooth pursuit performance for Eigenmannia virescens. Journal of Experimental Biology, 2011, 214, 1170-1180.	1.7	63

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19	The Visual Representation of 3D Object Orientation in Parietal Cortex. Journal of Neuroscience, 2013, 33, 19352-19361.	3.6	63
20	Diffusion-Based Motion Planning for a Nonholonomic Flexible Needle Model. , 0, , .		62
21	Kernel-based visual servoing. , 2007, , .		61
22	Templates and Anchors for Antenna-Based Wall Following in Cockroaches and Robots. IEEE Transactions on Robotics, 2008, 24, 130-143.	10.3	58
23	Closed-Form Differential Kinematics for Concentric-Tube Continuum Robots with Application to Visual Servoing. Springer Tracts in Advanced Robotics, 2009, , 485-494.	0.4	50
24	Vision-based follow-the-leader. , 0, , .		47
25	Beyond the Jamming Avoidance Response: weakly electric fish respond to the envelope of social electrosensory signals. Journal of Experimental Biology, 2012, 215, 4196-4207.	1.7	44
26	Lateral stability of the spring-mass hopper suggests a two-step control strategy for running. Chaos, 2009, 19, 026106.	2.5	43
27	Image-guided Control of Flexible Bevel-Tip Needles. , 2007, 2007, 3015-3020.		40
28	Geometric visual servoing. , 2005, 21, 1128-1138.		38
29	Locomotion- and mechanics-mediated tactile sensing: antenna reconfiguration simplifies control during high-speed navigation in cockroaches. Journal of Experimental Biology, 2013, 216, 4530-4541.	1.7	36
30	Planar image based visual servoing as a navigation problem. , 0, , .		35
31	A task-level model for optomotor yaw regulation in drosophila melanogaster: A frequency-domain system identification approach. , 2012, , .		33
32	De novo learning versus adaptation of continuous control in a manual tracking task. ELife, 2021, 10, .	6.0	33
33	Closed-Loop Control of Active Sensing Movements Regulates Sensory Slip. Current Biology, 2018, 28, 4029-4036.e4.	3.9	31
34	Body stiffness and damping depend sensitively on the timing of muscle activation in lampreys. Integrative and Comparative Biology, 2018, 58, 860-873.	2.0	31
35	Cerebellar patients have intact feedback control that can be leveraged to improve reaching. ELife, 2020, 9, .	6.0	31
36	Kinematics and calibration of active cannulas. , 2008, , .		30

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37	Closed-loop stabilization of the jamming avoidance response reveals its locally unstable and globally nonlinear dynamics. Journal of Experimental Biology, 2013, 216, 4272-84.	1.7	30
38	Synaptic Plasticity Can Produce and Enhance Direction Selectivity. PLoS Computational Biology, 2008, 4, e32.	3.2	29
39	Torsional Dynamics of Steerable Needles: Modeling and Fluoroscopic Guidance. IEEE Transactions on Biomedical Engineering, 2014, 61, 2707-2717.	4.2	28
40	The Synergy Between Neuroscience and Control Theory: The Nervous System as Inspiration for Hard Control Challenges. Annual Review of Control, Robotics, and Autonomous Systems, 2020, 3, 243-267.	11.8	27
41	Haptic feedback enhances rhythmic motor control by reducing variability, not improving convergence rate. Journal of Neurophysiology, 2014, 111, 1286-1299.	1.8	23
42	Dynamical Wall Following for a Wheeled Robot Using a Passive Tactile Sensor. , 0, , .		22
43	Dynamic modulation of visual and electrosensory gains for locomotor control. Journal of the Royal Society Interface, 2016, 13, 20160057.	3.4	22
44	Walking dynamics are symmetric (enough). Journal of the Royal Society Interface, 2015, 12, 20150209.	3.4	21
45	High-resolution behavioral mapping of electric fishes in Amazonian habitats. Scientific Reports, 2018, 8, 5830.	3.3	20
46	Frequency-Domain Subspace Identification of Linear Time-Periodic (LTP) Systems. IEEE Transactions on Automatic Control, 2019, 64, 2529-2536.	5.7	20
47	A Biologically Inspired Passive Antenna for Steering Control of a Running Robot. Springer Tracts in Advanced Robotics, 2005, , 541-550.	0.4	19
48	Controlling a robotically steered needle in the presence of torsional friction. , 2009, , 3476-3481.		19
49	Counter-propagating waves enhance maneuverability and stability: A bio-inspired strategy for robotic ribbon-fin propulsion. , 2012, , .		18
50	Torsional dynamics compensation enhances robotic control of tip-steerable needles. , 2012, , .		17
51	Linear systems with sparse inputs: Observability and input recovery. , 2015, , .		15
52	Mechanical processing via passive dynamic properties of the cockroach antenna can facilitate control during rapid running. Journal of Experimental Biology, 2014, 217, 3333-45.	1.7	14
53	Variability in locomotor dynamics reveals the critical role of feedback in task control. ELife, 2020, 9, .	6.0	14
54	Sensory Cues Modulate Smooth Pursuit and Active Sensing Movements. Frontiers in Behavioral Neuroscience, 2019, 13, 59.	2.0	12

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55	Spooky Interaction at a Distance in Cave and Surface Dwelling Electric Fishes. Frontiers in Integrative Neuroscience, 2020, 14, 561524.	2.1	12
56	Task-Induced Symmetry and Reduction With Application to Needle Steering. IEEE Transactions on Automatic Control, 2010, 55, 664-673.	5.7	11
57	Autostabilizing airframe articulation: Animal inspired air vehicle control. , 2012, , .		10
58	Identification of a vertical hopping robot model via harmonic transfer functions. Transactions of the Institute of Measurement and Control, 2016, 38, 501-511.	1.7	10
59	Task-Level Control of the Lateral Leg Spring Model of Cockroach Locomotion. , 2006, , 167-188.		10
60	Recovering Observability via Active Sensing. , 2018, , .		9
61	Patients with Cerebellar Ataxia Do Not Benefit from Limb Weights. Cerebellum, 2019, 18, 128-136.	2.5	9
62	Task-induced symmetry and reduction in kinematic systems with application to needle steering. , 2007, 2007, 3302-3308.		8
63	System identification of rhythmic hybrid dynamical systems via discrete time harmonic transfer functions. , 2014, , .		8
64	Empirical Characterization of Convergence Properties for Kernel-based Visual Servoing. Lecture Notes in Control and Information Sciences, 2010, , 23-38.	1.0	8
65	Biologically Inspired Catheter for Endovascular Sensing and Navigation. Scientific Reports, 2020, 10, 5643.	3.3	7
66	The Dome: A virtual reality apparatus for freely locomoting rodents. Journal of Neuroscience Methods, 2022, 368, 109336.	2.5	7
67	Rigid body visual servoing using navigation functions. , 0, , .		6
68	Complementary spatial and timing control in rhythmic arm movements. Journal of Neurophysiology, 2019, 121, 1543-1560.	1.8	6
69	Using Control Theory to Characterize Active Sensing in Weakly Electric Fishes. Springer Handbook of Auditory Research, 2019, , 227-249.	0.7	6
70	Wide-angle, monocular head tracking using passive markers. Journal of Neuroscience Methods, 2022, 368, 109453.	2.5	6
71	Auto-epipolar visual servoing. , 0, , .		5
72	Navigation Functions on Cross Product Spaces. IEEE Transactions on Automatic Control, 2007, 52, 1297-1302.	5.7	5

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73	Snake robot uncovers secrets to sidewindersâ€™ maneuverability. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 5870-5871.	7.1	5
74	Optimal Control with Noisy Time. IEEE Transactions on Automatic Control, 2015, , 1-1.	5.7	5
75	A tunable physical model of arthropod antennae. , 2010, , .		4
76	State-estimation and cooperative control with uncertain time. , 2013, , .		4
77	Independent Estimation of Input and Measurement Delays for a Hybrid Vertical Spring-Mass-Damper via Harmonic Transfer Functions. IFAC-PapersOnLine, 2015, 48, 298-303.	0.9	4
78	Toward data-driven models of legged locomotion using harmonic transfer functions. , 2015, , .		4
79	Ultra Broad Band Neural Activity Portends Seizure Onset in a Rat Model of Epilepsy. , 2018, 2018, 2276-2279.		4
80	Haptic Feedback and the Internal Model Principle. , 2019, , .		4
81	Empirical validation of a new visual servoing strategy. , 0, , .		3
82	Optimal motor control may mask sensory dynamics. Biological Cybernetics, 2009, 101, 35-42.	1.3	3
83	Observer Design for Needle Steering Using Task-Induced Symmetry and Reduction. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 8028-8033.	0.4	3
84	An almost global estimator on SO(3) with measurement on S². , 2012, , .		3
85	Multi-view visual servoing using epipoles. , 0, , .		2
86	Bioelectric Navigation: A New Paradigm for Intravascular Device Guidance. Lecture Notes in Computer Science, 2016, , 474-481.	1.3	2
87	Time-changed linear quadratic regulators. , 2013, , .		2
88	Toward SLAM on Graphs. Springer Tracts in Advanced Robotics, 2009, , 631-645.	0.4	2
89	A hierarchy of neuromechanical and robotic models of antenna-based wall following in cockroaches. , 2007, , .		1
90	Enhancing Maneuverability via Gait Design. , 2022, , .		1

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91	Toward global visual servos and estimators for rigid bodies. , 0, , .		0
92	Synaptic Plasticity Can Produce and Enhance Direction Selectivity. PLoS Computational Biology, 2005, preprint, e32.	3.2	0