

# R Brent Gillespie

## List of Publications by Year in descending order

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109  
papers

2,054  
citations

394421

19  
h-index

330143

37  
g-index

111  
all docs

111  
docs citations

111  
times ranked

1840  
citing authors

#	ARTICLE	IF	CITATIONS
1	Sharing Control Between Humans and Automation Using Haptic Interface: Primary and Secondary Task Performance Benefits. Human Factors, 2005, 47, 574-590.	3.5	166
2	A regenerative peripheral nerve interface allows real-time control of an artificial hand in upper limb amputees. Science Translational Medicine, 2020, 12, .	12.4	166
3	An Energy Management Controller to Optimally Trade Off Fuel Economy and Drivability for Hybrid Vehicles. IEEE Transactions on Control Systems Technology, 2012, 20, 1490-1505.	5.2	149
4	Data-Driven Control of Soft Robots Using Koopman Operator Theory. IEEE Transactions on Robotics, 2021, 37, 948-961.	10.3	90
5	Shared Control between Human and Machine: Using a Haptic Steering Wheel to Aid in Land Vehicle Guidance. Proceedings of the Human Factors and Ergonomics Society, 2001, 45, 1671-1675.	0.3	89
6	Providing a Sense of Touch to Prosthetic Hands. Plastic and Reconstructive Surgery, 2015, 135, 1652-1663.	1.4	77
7	Modeling and Control of Soft Robots Using the Koopman Operator and Model Predictive Control. , 0, , .		74
8	Shared control between human and machine: haptic display of automation during manual control of vehicle heading. , 2004, , .		70
9	Refreshing Refreshable Braille Displays. IEEE Transactions on Haptics, 2015, 8, 287-297.	2.7	61
10	Visual and Haptic Feedback Contribute to Tuning and Online Control During Object Manipulation. Journal of Motor Behavior, 2007, 39, 179-193.	0.9	57
11	Symmetry-based resistance as a novel means of lower limb rehabilitation. Journal of Biomechanics, 2007, 40, 1286-1292.	2.1	37
12	An exploration of grip force regulation with a low-impedance myoelectric prosthesis featuring referred haptic feedback. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 104.	4.6	35
13	Koopman-Based Control of a Soft Continuum Manipulator Under Variable Loading Conditions. IEEE Robotics and Automation Letters, 2021, 6, 6852-6859.	5.1	34
14	<i>In vivo</i> characterization of regenerative peripheral nerve interface function. Journal of Neural Engineering, 2016, 13, 026012.	3.5	33
15	A Fundamental Linear Systems Conflict Between Performance and Passivity in Haptic Rendering. IEEE Transactions on Robotics, 2011, 27, 75-88.	10.3	31
16	Haptic interface for hands-on instruction in system dynamics and embedded control. , 0, , .		30
17	A Fundamental Tradeoff Between Performance and Sensitivity Within Haptic Rendering. , 2008, 24, 537-548.		30
18	Understanding the role of haptic feedback in a teleoperated/prosthetic grasp and lift task. , 2013, , .		30

#	ARTICLE	IF	CITATIONS
19	A Novel Application of Eddy Current Braking for Functional Strength Training During Gait. <i>Annals of Biomedical Engineering</i> , 2016, 44, 2760-2773.	2.5	28
20	Who's the boss? Arbitrating control authority between a human driver and automation system. <i>Transportation Research Part F: Traffic Psychology and Behaviour</i> , 2020, 68, 144-160.	3.7	28
21	Cancellation of Biodynamic Feedthrough in Vehicle Control Tasks. <i>IEEE Transactions on Control Systems Technology</i> , 2007, 15, 1018-1029.	5.2	26
22	An Empirical Evaluation of Force Feedback in Body-Powered Prostheses. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2017, 25, 215-226.	4.9	22
23	Kinematic Creep in a Continuously Variable Transmission: Traction Drive Mechanics for Cobots. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2002, 124, 713-722.	2.9	21
24	Human Adaptation to Interaction Forces in Visuo-Motor Coordination. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2006, 14, 390-397.	4.9	21
25	Toward improved sensorimotor integration and learning using upper-limb prosthetic devices. , 2010, 2010, 5077-80.		20
26	Vibrotactile feedback of pose error enhances myoelectric control of a prosthetic hand. , 2013, , .		20
27	Shared control architectures for vehicle steering. <i>Cognition, Technology and Work</i> , 2019, 21, 699-709.	3.0	18
28	What you can't feel won't hurt you: Evaluating haptic hardware using a haptic contrast sensitivity function. <i>IEEE Transactions on Haptics</i> , 2011, 4, 134-146.	2.7	17
29	Real-World Robustness for Hybrid Vehicle Optimal Energy Management Strategies Incorporating Drivability Metrics. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2014, 136, .	1.6	17
30	The design of pressure-controlled valves for a refreshable tactile display. , 2015, , .		17
31	Simple, robust control and synchronization of the Lorenz system. <i>Nonlinear Dynamics</i> , 2013, 73, 971-980.	5.2	16
32	The Objective Assessment of Experts' and Novices' Suturing Skills Using An Image Analysis Program. <i>Academic Medicine</i> , 2013, 88, 260-264.	1.6	16
33	A pneu shape display: Physical buttons with programmable touch response. , 2017, , .		16
34	Effect of coupling point selection on distortion in internet-distributed hardware-in-the-loop simulation. <i>International Journal of Vehicle Design</i> , 2013, 61, 67.	0.3	15
35	Human control strategies in pursuit tracking with a disturbance input. , 2014, , .		15
36	Toward Controllable Hydraulic Coupling of Joints in a Wearable Robot. <i>IEEE Transactions on Robotics</i> , 2018, 34, 748-763.	10.3	15

#	ARTICLE	IF	CITATIONS
37	Haptic feedback and human performance in a dynamic task. , 0, , .		14
38	Effects of haptic device attributes on vibration detection thresholds. , 2009, , .		14
39	Characterizing the Feel of the Piano Action. Computer Music Journal, 2011, 35, 43-57.	0.1	14
40	Architectures for Shared Control of Vehicle Steering**The authors wish to acknowledge the financial support of the Automotive Research Center (ARC) under Cooperative Agreement W56HZV-04-2-0001 with the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC) Warren, MI. Disclaimer: Reference herein to any specific commercial company, product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or approval by the U.S. Government or any agency thereof. IFAC-PapersOnLine, 2016, 49, 639-644.	0.9	14
41	Comparison and experimental validation of predictive models for soft, fiber-reinforced actuators. International Journal of Robotics Research, 2021, 40, 119-135.	8.5	14
42	Embodied cognition as a motivating perspective for haptic interaction design: A position paper. , 2011, , .		13
43	Human Motor Control and the Internal Model Principle**The authors wish to acknowledge the financial support of the National Science Foundation under award number 1035271.. IFAC-PapersOnLine, 2016, 49, 114-119.	0.9	13
44	Automated Characterization and Compensation for a Compliant Mechanism Haptic Device. IEEE/ASME Transactions on Mechatronics, 2008, 13, 136-146.	5.8	12
45	The effect of force/motion coupling on motor and cognitive performance. , 2011, , .		12
46	Co-location of force and action improves identification of force-displacement features. , 2012, , .		12
47	The role of auxiliary and referred haptic feedback in myoelectric control. , 2015, , .		12
48	Getting a Grip on the Impact of Incidental Feedback From Body-Powered and Myoelectric Prostheses. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021, 29, 1905-1912.	4.9	12
49	On-Line Symbolic Constraint Embedding for Simulation of Hybrid Dynamical Systems. Multibody System Dynamics, 2005, 14, 387-417.	2.7	11
50	Head movement control in visually guided tasks: Postural goal and optimality. Computers in Biology and Medicine, 2007, 37, 1009-1019.	7.0	11
51	Series elasticity for free free-space motion for free. , 2014, , .		11
52	Self-powered robots to reduce motor slacking during upper-extremity rehabilitation: a proof of concept study. Restorative Neurology and Neuroscience, 2018, 36, 693-708.	0.7	11
53	Restoration of Proprioceptive and Cutaneous Sensation Using Regenerative Peripheral Nerve Interfaces in Humans with Upper Limb Amputations. Plastic and Reconstructive Surgery, 2022, 149, 1149e-1154e.	1.4	11
54	Feedback-stabilized minimum distance maintenance for convex parametric surfaces. , 2005, 21, 1009-1016.		9

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55	Origami Structured Compliant Actuator (OSCA). , 2015, , .		9
56	Non-Colocated Kinesthetic Display Limits Compliance Discrimination in the Absence of Terminal Force Cues. IEEE Transactions on Haptics, 2016, 9, 387-396.	2.7	9
57	Adjacent regenerative peripheral nerve interfaces produce phase-antagonist signals during voluntary walking in rats. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 33.	4.6	9
58	Compact and low-cost tendon vibrator for inducing proprioceptive illusions. , 2009, , .		8
59	Will they fit? Development of a measurement device to assess body habitus compatibility with MRI bore diameter for emergency trauma imaging. Emergency Radiology, 2012, 19, 141-148.	1.8	8
60	Reconstructing surface EMG from scalp EEG during myoelectric control of a closed looped prosthetic device. , 2013, 2013, 5602-5.		8
61	Beyond synchronization: String instability in coupled harmonic oscillator systems. International Journal of Robust and Nonlinear Control, 2015, 25, 2745-2769.	3.7	8
62	Modeling Pneumatic Actuators for a Refreshable Tactile Display. Lecture Notes in Computer Science, 2014, , 385-393.	1.3	8
63	A Closest Point Algorithm for Parametric Surfaces with Global Uniform Asymptotic Stability. , 0, , .		7
64	Once More, with Feeling: Revisiting the Role of Touch in Performer-Instrument Interaction. Springer Series on Touch and Haptic Systems, 2018, , 11-27.	0.3	7
65	<title>Design of high-fidelity haptic display for one-dimensional force reflection applications</title>. , 1995, 2351, 44.		6
66	An Assistive Cobot for Aid in Self Care Activities. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 511-516.	0.4	6
67	Toward Improved CVTs: Theoretical and Experimental Results. , 2002, , 855.		6
68	Haptic feedback improves manual excitation of a sprung mass. , 2004, , .		6
69	Haptic rendering of parametric surfaces using a feedback stabilized extremal distance tracking algorithm. , 2004, , .		6
70	Model-Based Cancellation of Biodynamic Feedthrough Using a Force-Reflecting Joystick. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 94-103.	1.6	6
71	Functionally biarticular control for smart prosthetics. , 2009, , .		6
72	Role Negotiation in a Haptic Shared Control Framework. , 2016, , .		6

#	ARTICLE	IF	CITATIONS
73	Modeling and Experimental Evaluation of a Variable Hydraulic Transmission. IEEE/ASME Transactions on Mechatronics, 2020, 25, 750-761.	5.8	6
74	The Effects of Haptic Feedback and Transition Type on Transfer of Control Between Drivers and Vehicle Automation. IEEE Transactions on Human-Machine Systems, 2021, 51, 613-621.	3.5	6
75	Modeling the Coordinated Movements of the Head and Hand Using Differential Inverse Kinematics. , 2004, , .		5
76	Identification of human feedforward control in grasp and twist tasks. , 2014, , .		5
77	Decomposing the performance of admittance and series elastic haptic rendering architectures. , 2017, , .		5
78	Simulating microgravity using a random positioning machine for inducing cellular responses to mechanotransduction in human osteoblasts. Review of Scientific Instruments, 2021, 92, 114101.	1.3	5
79	The impact of high-frequency haptic device behavior on perception. , 2018, , .		4
80	Haptic Feedback and the Internal Model Principle. , 2019, , .		4
81	A Haptic Object to Quantify the Effect of Feedback Modality on Prosthetic Grasping. IEEE Robotics and Automation Letters, 2019, 4, 1101-1108.	5.1	4
82	Comparing Coupled and Decoupled Steering Interface Designs for Emergency Obstacle Evasion. IEEE Access, 2021, 9, 116857-116868.	4.2	4
83	Estimation and decomposition of rack force for driving on uneven roads. Control Engineering Practice, 2021, 114, 104876.	5.5	4
84	Characterizing Teleoperator Behavior for Feedback Design and Performance Analysis. , 2008, , .		3
85	A fundamental conflict between performance and passivity in haptic rendering. , 2008, , .		3
86	Recovering haptic performance by relaxing passivity requirements. , 2009, , .		3
87	String instability in coupled harmonic oscillator systems. , 2011, , .		3
88	A novel variable transmission with digital hydraulics. , 2015, , .		3
89	Estimating Rack Force due to Road Slopes for Electric Power Steering Systems. , 2019, , .		3
90	Unilateral and Bilateral Virtual Springs: Contact Transitions Unmask Device Dynamics. IEEE Transactions on Haptics, 2019, 12, 205-216.	2.7	3

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91	Posture and Motion Prediction: Perspectives for Unconstrained Head Movements. , 0, , .		2
92	Modeling pneumatic bubble displacements with membrane theory. , 2010, , .		2
93	Dynamic coupling between a human user and haptic virtual environment. , 2012, , .		2
94	Role of haptic cues in motor learning. , 2013, , .		2
95	The effect of haptic cues on motor and perceptual based implicit sequence learning. <i>Frontiers in Human Neuroscience</i> , 2014, 8, 130.	2.0	2
96	Modeling latching fluidic circuits to determine clocking limits for a refreshable braille display. , 2016, , .		2
97	Evaluating Approaches to Rendering Braille Text on a High-Density Pin Display. <i>IEEE Transactions on Haptics</i> , 2018, 11, 476-481.	2.7	2
98	Vector Field Control Methods for Discretely Variable Passive Robotic Devices. <i>IEEE Transactions on Robotics</i> , 2021, 37, 375-389.	10.3	2
99	Haptic Scene Analysis: Mechanical Property Separation Despite Parasitic Dynamics. <i>Lecture Notes in Computer Science</i> , 2018, , 234-245.	1.3	2
100	An Investigation of Vibration Feedthrough and Feedthrough Cancellation in Joystick Controlled Vehicles. , 2003, , 569.		1
101	A high bandwidth low inertia motor for haptic rendering based on clutched eddy current effects. , 2012, , .		1
102	Negotiated control between the manual and visual systems for visually guided hand reaching movements. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2014, 11, 102.	4.6	1
103	Respecting the Coupled Dynamics: Haptic Feedback Carries both Power and Information. , 2020, , .		1
104	The instrumented instrument: characterization and training of manual skill in open suturing. <i>Studies in Health Technology and Informatics</i> , 2008, 132, 141-6.	0.3	1
105	Programmable Pressure Amplification Using a Soft Folding Actuator. , 2022, , .		1
106	The haptic probe: mechanized haptic exploration and automated modeling. , 0, , .		0
107	Investigation of Motor Adaptation to Movement Versus Object Parameters. , 0, , .		0
108	String instability analysis of heterogeneous coupled oscillator systems. , 2012, , .		0

#	ARTICLE	IF	CITATIONS
109	Comparing Series Elasticity and Admittance Control for Haptic Rendering. Lecture Notes in Computer Science, 2016, , 240-250.	1.3	0