Sandra Hirche

List of Publications by Year
in descending order

154 papers	3,603 citations	236925 25 h-index	243625 44 g-index
154 all docs	154 docs citations	154 times ranked	2751 citing authors

#	Article	IF	Citations
1	Data augmentation of wearable sensor data for parkinson's disease monitoring using convolutional neural networks. , 2017, , .		321
2	The role of roles: Physical cooperation between humans and robots. International Journal of Robotics Research, 2012, 31, 1656-1674.	8.5	216
3	Haptic Communications. Proceedings of the IEEE, 2012, 100, 937-956.	21.3	161
4	On the Optimality of Certainty Equivalence for Event-Triggered Control Systems. IEEE Transactions on Automatic Control, 2013, 58, 470-474.	5.7	136
5	Stationary Consensus of Asynchronous Discrete-Time Second-Order Multi-Agent Systems Under Switching Topology. IEEE Transactions on Industrial Informatics, 2012, 8, 986-994.	11.3	100
6	Control sharing in human-robot team interaction. Annual Reviews in Control, 2017, 44, 342-354.	7.9	98
7	Internal Force Analysis and Load Distribution for Cooperative Multi-Robot Manipulation. IEEE Transactions on Robotics, 2015, 31, 1238-1243.	10.3	82
8	Stable Gaussian process based tracking control of Euler–Lagrange systems. Automatica, 2019, 103, 390-397.	5.0	75
9	On LQG joint optimal scheduling and control under communication constraints. , 2009, , .		61
10	An impedance-based control architecture for multi-robot cooperative dual-arm mobile manipulation. , 2013, , .		61
11	An experience-driven robotic assistant acquiring human knowledge to improve haptic cooperation. , 2011, , .		60
12	Model and Analysis of the Interaction Dynamics in Cooperative Manipulation Tasks. IEEE Transactions on Robotics, 2016, 32, 672-683.	10.3	59
13	Load sharing in human-robot cooperative manipulation. , 2010, , .		57
14	Feedback Linearization Based on Gaussian Processes With Event-Triggered Online Learning. IEEE Transactions on Automatic Control, 2020, 65, 4154-4169.	5.7	57
15	Formation control with mismatched compasses. Automatica, 2016, 69, 232-241.	5.0	54
16	Stability of Positive Switched Linear Systems: Weak Excitation and Robustness to Time-Varying Delay. IEEE Transactions on Automatic Control, 2017, 62, 399-405.	5.7	54
17	Voronoi based coverage control with anisotropic sensors. , 2008, , .		50
18	An Uncertainty-Based Control Lyapunov Approach for Control-Affine Systems Modeled by Gaussian Process. , 2018, 2, 483-488.		47

#	Article	IF	Citations
19	Price-Based Adaptive Scheduling in Multi-Loop Control Systems With Resource Constraints. IEEE Transactions on Automatic Control, 2014, 59, 3282-3295.	5.7	46
20	Distributed Control for Cooperative Manipulation With Event-Triggered Communication. IEEE Transactions on Robotics, 2020, 36, 1038-1052.	10.3	46
21	Fully Distributed Cooperation for Networked Uncertain Mobile Manipulators. IEEE Transactions on Robotics, 2020, 36, 984-1003.	10.3	44
22	Synthesizing Anticipatory Haptic Assistance Considering Human Behavior Uncertainty. IEEE Transactions on Robotics, 2015, 31, 180-190.	10.3	42
23	Performance related energy exchange in haptic human-human interaction in a shared virtual object manipulation task. , 2009, , .		41
24	Error-dependent data scheduling in resource-aware multi-loop networked control systems. Automatica, 2017, 81, 209-216.	5.0	41
25	Event-triggered scheduling for stochastic multi-loop networked control systems with packet dropouts. , 2014, , .		40
26	High-Resolution Motor State Detection in Parkinson's Disease Using Convolutional Neural Networks. Scientific Reports, 2020, 10, 5860.	3.3	39
27	Control of Networked Systems Using the Scattering Transformation. IEEE Transactions on Control Systems Technology, 2009, 17, 60-67.	5.2	38
28	Structural characterization of optimal event-based controllers for linear stochastic systems. , 2010, , .		38
29	Invariance Control for Safe Human–Robot Interaction in Dynamic Environments. IEEE Transactions on Robotics, 2017, 33, 1327-1342.	10.3	38
30	Feedback linearization using Gaussian processes. , 2017, , .		35
31	Effects of Packet Loss and Latency on the Temporal Discrimination of Visual-Haptic Events. IEEE Transactions on Haptics, 2010, 3, 28-36.	2.7	32
32	Opinion Behavior Analysis in Social Networks Under the Influence of Coopetitive Media. IEEE Transactions on Network Science and Engineering, 2020, 7, 961-974.	6.4	31
33	Inverse Optimal Control for Multiphase Cost Functions. IEEE Transactions on Robotics, 2019, 35, 1387-1398.	10.3	29
34	Perceptual coding of haptic data in time-delayed teleoperation. , 2009, , .		28
35	Event-Triggered State Estimation: An Iterative Algorithm and Optimality Properties. IEEE Transactions on Automatic Control, 2017, 62, 5939-5946.	5.7	28
36	Human-Guided Multirobot Cooperative Manipulation. IEEE Transactions on Control Systems Technology, 2019, 27, 1492-1509.	5.2	28

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37	State Estimation and Branch Current Learning Using Independent Local Kalman Filter With Virtual Disturbance Model. IEEE Transactions on Instrumentation and Measurement, 2011, 60, 3026-3034.	4.7	27
38	Fully Distributed Consensus Control for Linear Multiagent Systems: A Reduced-Order Adaptive Feedback Approach. IEEE Transactions on Control of Network Systems, 2020, 7, 967-976.	3.7	27
39	Influence of visuomotor action on visual-haptic simultaneous perception: A psychophysical study. , 2008, , .		26
40	Optimal design of decentralized event-triggered controllers for large-scale systems with contention-based communication. , 2011, , .		26
41	Risk-Sensitive Optimal Feedback Control for Haptic Assistance. , 2012, , .		26
42	A bi-level approach for the design of event-triggered control systems over a shared network. Discrete Event Dynamic Systems: Theory and Applications, 2014, 24, 153-171.	1.5	26
43	Optimal LQG Control Under Delay-Dependent Costly Information. , 2019, 3, 102-107.		26
44	Joint Cross-Layer Optimization in Real-Time Networked Control Systems. IEEE Transactions on Control of Network Systems, 2020, 7, 1903-1915.	3.7	26
45	Human-preference-based control design: Adaptive robot admittance control for physical human-robot interaction. , 2012, , .		25
46	Autonomous manipulation of deformable objects based on teleoperated demonstrations. , 2012, , .		25
47	Inverse optimal control from incomplete trajectory observations. International Journal of Robotics Research, 2021, 40, 848-865.	8.5	24
48	Polarizability, Consensusability, and Neutralizability of Opinion Dynamics on Coopetitive Networks. IEEE Transactions on Automatic Control, 2019, 64, 3339-3346.	5.7	23
49	Towards an objective quality evaluation framework for haptic data reduction. , 2011, , .		22
50	Learning stable Gaussian process state space models. , 2017, , .		22
51	Adaptive force/velocity control for multi-robot cooperative manipulation under uncertain kinematic parameters. , 2013, , .		21
52	Formation-based approach for multi-robot cooperative manipulation based on optimal control design. , 2013, , .		21
53	Synchronization in a goal-directed task: Human movement coordination with each other and robotic partners. , 2011, , .		20
54	A Multi-Vehicle Control Framework With Application to Automated Valet Parking. IEEE Transactions on Intelligent Transportation Systems, 2021, 22, 5697-5707.	8.0	20

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55	Dynamic Movement Primitives for cooperative manipulation and synchronized motions. , 2014, , .		19
56	Performance-oriented communication topology design for large-scale interconnected systems. , 2010, , .		18
57	Dynamic strategy selection for physical robotic assistance in partially known tasks. , 2013, , .		18
58	Stability of Gaussian process state space models. , 2016, , .		18
59	Stable Gaussian process based tracking control of Lagrangian systems. , 2017, , .		18
60	Try-once-discard scheduling for stochastic networked control systems. International Journal of Control, 2019, 92, 2532-2546.	1.9	18
61	Plan-Based Control of Joint Human-Robot Activities. KI - Kunstliche Intelligenz, 2010, 24, 223-231.	3.2	17
62	Impedance-Based Gaussian Processes for Modeling Human Motor Behavior in Physical and Non-Physical Interaction. IEEE Transactions on Biomedical Engineering, 2019, 66, 2499-2511.	4.2	17
63	Distributed Link Removal Using Local Estimation of Network Topology. IEEE Transactions on Network Science and Engineering, 2019, 6, 280-292.	6.4	17
64	Learning interaction control policies by demonstration. , 2011, , .		16
65	Feedback motion planning and learning from demonstration in physical robotic assistance: differences and synergies. , 2012, , .		16
66	Human–Robot Team Interaction Through Wearable Haptics for Cooperative Manipulation. IEEE Transactions on Haptics, 2019, 12, 350-362.	2.7	16
67	Distributed Topology Manipulation to Control Epidemic Spreading Over Networks. IEEE Transactions on Signal Processing, 2019, 67, 1163-1174.	5.3	15
68	Multi-robot manipulation controlled by a human with haptic feedback. , 2015, , .		14
69	Dynamically Consistent Online Adaptation of Fast Motions for Robotic Manipulators. IEEE Transactions on Robotics, 2018, 34, 166-182.	10.3	14
70	Backstepping for Partially Unknown Nonlinear Systems Using Gaussian Processes. , 2019, 3, 416-421.		14
71	Intercontinental multimodal tele-cooperation using a humanoid robot. , 2008, , .		13
72	Towards interactive physical robotic assistance: Parameterizing motion primitives through natural language. , 2012, , .		13

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73	Value of Information in Feedback Control: Quantification. IEEE Transactions on Automatic Control, 2022, 67, 3730-3737.	5.7	13
74	Optimal LQG Control of Networked Systems Under Traffic-Correlated Delay and Dropout. , 2022, 6, 1280-1285.		13
75	Gaussian process kernels for rotations and 6D rigid body motions. , 2014, , .		12
76	Stable Model-based Control with Gaussian Process Regression for Robot Manipulators. IFAC-PapersOnLine, 2017, 50, 3877-3884.	0.9	12
77	Scenario-based Optimal Control for Gaussian Process State Space Models. , 2018, , .		12
78	Effect of External Force on Agency in Physical Human-Machine Interaction. Frontiers in Human Neuroscience, 2020, 14, 114.	2.0	12
79	Data-driven output synchronization of heterogeneous leader-follower multi-agent systems. , 2021, , .		12
80	Accelerated iterative distributed controller synthesis with a Barzilai-Borwein step size. , 2012, , .		11
81	Risk-sensitive interaction control in uncertain manipulation tasks. , 2013, , .		11
82	Impedance-based Gaussian Processes for predicting human behavior during physical interaction. , 2016, , .		11
83	Mean Square Prediction Error of Misspecified Gaussian Process Models. , 2018, , .		11
84	Delay-Sensitive Joint Optimal Control and Resource Management in Multiloop Networked Control Systems. IEEE Transactions on Control of Network Systems, 2021, 8, 1093-1106.	3.7	11
85	Adaptive Decentralized MAC for Event-Triggered Networked Control Systems. , 2016, , .		11
86	6D workspace constraints for physical human-robot interaction using invariance control with chattering reduction. , 2012, , .		10
87	Gaussian processes for dynamic movement primitives with application in knowledge-based cooperation. , 2016, , .		10
88	Bayesian uncertainty modeling for programming by demonstration. , 2017, , .		10
89	Uncertainty-based Human Motion Tracking with Stable Gaussian Process State Space Models. IFAC-PapersOnLine, 2019, 51, 8-14.	0.9	10
90	Stability, stabilization and experiments for networked control systems with random time delay. , 2008, , .		9

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91	Biomimetic lateral-line system for underwater vehicles. , 2010, , .		9
92	Disagreement-aware physical assistance through risk-sensitive optimal feedback control. , 2012, , .		9
93	Decentralized event-triggered medium access control for networked control systems. , 2016, , .		9
94	Learning stochastically stable Gaussian process state–space models. IFAC Journal of Systems and Control, 2020, 12, 100079.	1.7	9
95	A switching control law for a networked visual servo control system. , 2010, , .		8
96	Playing pool with a dual-armed robot. , 2011, , .		8
97	Fast trajectory replanning using Laplacian mesh optimization. , 2012, , .		8
98	Learning and generalizing force control policies for sculpting. , 2012, , .		8
99	Online deformation of optimal trajectories for constrained nonprehensile manipulation. , 2015, , .		8
100	Gaussian process for 6-DoF rigid motions. Autonomous Robots, 2018, 42, 1151-1167.	4.8	8
101	How Training Data Impacts Performance in Learning-Based Control. , 2021, 5, 905-910.		8
102	Stable teleoperation with communication unreliabilities and approximate human/environment dynamics knowledge. , 2010, , .		7
103	Adaptive event-triggered control over a shared network. , 2012, , .		7
104	Considering Uncertainty in Optimal Robot Control Through High-Order Cost Statistics. IEEE Transactions on Robotics, 2018, 34, 1068-1081.	10.3	7
105	Local Asymptotic Stability Analysis and Region of Attraction Estimation with Gaussian Processes*. , 2019, , .		7
106	Decentralized LQ-Consistent Event-Triggered Control Over a Shared Contention-Based Network. IEEE Transactions on Automatic Control, 2022, 67, 1430-1437.	5.7	7
107	Gaussian process-based visual pursuit control with unknown target motion learning in three dimensions. SICE Journal of Control Measurement and System Integration, 2021, 14, 116-127.	0.7	7
108	Finite–time distributed topology design for optimal network resilience. IET Control Theory and Applications, 2019, 13, 2792-2799.	2.1	7

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109	State estimation and learning of unknown branch current flows using decentralized Kalman filter with virtual disturbance model. , 2010, , .		6
110	An Optimal LQG Controller for Stochastic Event-triggered Scheduling over a Lossy Communication Network. IFAC-PapersOnLine, 2018, 51, 58-63.	0.9	6
111	Learning force control policies for compliant manipulation. , 2011, , .		6
112	Intercontinental cooperative telemanipulation between Germany and Japan. , 2008, , .		5
113	Uncertainty-dependent optimal control for robot control considering high-order cost statistics. , 2015, , .		5
114	On 3-D Formation Control With Mismatched Coordinates. IEEE Transactions on Control of Network Systems, 2018, 5, 1492-1502.	3.7	5
115	A Multi-Layer Gaussian Process for Motor Symptom Estimation in People With Parkinson's Disease. IEEE Transactions on Biomedical Engineering, 2019, 66, 3038-3049.	4.2	5
116	Evolution of social power over influence networks containing antagonistic interactions. Information Sciences, 2020, 540, 449-468.	6.9	5
117	Information-driven distributed coverage algorithms for mobile sensor networks. , 2011, , .		4
118	Order reduction in optimal event-triggered control design for linear stochastic systems. , 2011, , .		4
119	Performance-oriented networked visual servo control with sending rate scheduling. , 2011, , .		4
120	Iterative optimal feedback control design under relaxed rigidity constraints for multi-robot cooperative manipulation. , 2013, , .		4
121	Invariance control with time-varying constraints. , 2016, , .		4
122	Data Selection for Multi-Task Learning Under Dynamic Constraints. , 2021, 5, 959-964.		4
123	Feedback Control Over Noisy Channels: Characterization of a General Equilibrium. IEEE Transactions on Automatic Control, 2022, 67, 3396-3409.	5.7	4
124	Online Learning-Based Trajectory Tracking for Underactuated Vehicles With Uncertain Dynamics. , 2022, 6, 2090-2095.		4
125	Diffeomorphically Learning Stable Koopman Operators. , 2022, 6, 3427-3432.		4
126	Communication topology design for large-scale interconnected systems with time delay. , 2011, , .		3

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127	Adaptive attitude design with risk-sensitive optimal feedback control in physical human-robot interaction. , 2012, , .		3
128	Strategic play for a pool-playing robot. , 2012, , .		3
129	Full body motion adaption based on task-space distance meshes. , 2014, , .		3
130	Estimation of Involuntary Components of Human Arm Impedance in Multi-Joint Movements via Feedback Jerk Isolation. Frontiers in Neuroscience, 2020, 14, 459.	2.8	3
131	Distributed Bayesian Online Learning for Cooperative Manipulation. , 2021, , .		3
132	Backstepping Tracking Control Using Gaussian Processes With Event-Triggered Online Learning. , 2022, 6, 3176-3181.		3
133	Interconnected performance optimization in complex robotic systems. , 2010, , .		2
134	Real-time human body motion estimation based on multi-layer laser scans. , 2011, , .		2
135	Topology design for distributed formation control towards optimal convergence rate. , 2012, , .		2
136	Sampling-based trajectory imitation in constrained environments using Laplacian-RRT. , 2014, , .		2
137	Closed-loop Model Selection for Kernel-based Models using Bayesian Optimization. , 2019, , .		2
138	Anticipating the long-term effect of online learning in control. , 2020, , .		2
139	Learning Stable Nonparametric Dynamical Systems with Gaussian Process Regression. IFAC-PapersOnLine, 2020, 53, 1194-1199.	0.9	2
140	The effect of the non-target object position on wrist motion. , 2010, , .		1
141	Spline deformation of locally optimal trajectories: Feasibility and upper bound on control inputs. , 2015, , .		1
142	Correction to â€œAn Uncertainty-Based Control Lyapunov Approach for Control-Affine Systems Modeled by Gaussian Processâ€•[Jul 18 483-488]. , 2019, 3, 493-493.		1
143	Interval Observers for a Class of Nonlinear Systems Using Gaussian Process Models. , 2019, , .		1
144	Human-Robot Interaction Through Fingertip Haptic Devices for Cooperative Manipulation Tasks. , 2019, , .		1

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145	An experience-driven robotic assistant acquiring human knowledge to improve haptic cooperation. , 2011, , .		1
146	Confidence Regions for Predictions of Online Learning-Based Control. IFAC-PapersOnLine, 2020, 53, 1007-1012.	0.9	1
147	Day-ahead Scheduling of Thermal Storage Systems Using Bayesian Neural Networks. IFAC-PapersOnLine, 2020, 53, 13281-13286.	0.9	1
148	Online Learning-based Formation Control of Multi-Agent Systems with Gaussian Processes. , 2021, , .		1
149	Actuator Scheduling for Linear Systems: A Convex Relaxation Approach. , 2023, 7, 7-12.		1
150	Application of sliding mode techniques to the delay identification of nonlinear systems. , 2010, , .		0
151	Trajectory Classification in n Dimensions using Subspace Projection. , 2012, , .		0
152	Analyzing human and virtual agent interaction under irrational decision making. , 2012, , .		0
153	Delay-independent stability of (Q, S, R)-dissipative networked systems with a distributed controller. , 2009, , .		0
154	Any-Time Feasible Coordination for Multivehicle Systems. IEEE Transactions on Control Systems Technology, 2022, 30, 1807-1820.	5.2	0