

Rajesh Rajamani

List of Publications by Year in descending order

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117
papers

3,324
citations

304368

22
h-index

161609

54
g-index

118
all docs

118
docs citations

118
times ranked

2415
citing authors

#	ARTICLE	IF	CITATIONS
1	Vehicle Dynamics and Control. Mechanical Engineering Series, 2012, , .	0.1	1,408
2	Friction Estimation on Highway Vehicles Using Longitudinal Measurements. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2004, 126, 265-275.	0.9	149
3	Tire-Road Friction-Coefficient Estimation. IEEE Control Systems, 2010, 30, 54-69.	1.0	131
4	Portable Roadside Sensors for Vehicle Counting, Classification, and Speed Measurement. IEEE Transactions on Intelligent Transportation Systems, 2014, 15, 73-83.	4.7	131
5	Nonlinear Observer for Bounded Jacobian Systems, With Applications to Automotive Slip Angle Estimation. IEEE Transactions on Automatic Control, 2011, 56, 1163-1170.	3.6	119
6	Estimation of Tire-Road Friction Coefficient Using a Novel Wireless Piezoelectric Tire Sensor. IEEE Sensors Journal, 2011, 11, 267-279.	2.4	106
7	New Rollover Index for the Detection of Tripped and Untripped Rollovers. IEEE Transactions on Industrial Electronics, 2013, 60, 4726-4736.	5.2	70
8	Flexible Tactile Sensor for Tissue Elasticity Measurements. Journal of Microelectromechanical Systems, 2009, 18, 1226-1233.	1.7	59
9	Circle criterion-based \hat{A} -observer design for Lipschitz and monotonic nonlinear systems – Enhanced LMI conditions and constructive discussions. Automatica, 2017, 85, 412–425.	5.0	48
10	Sensor fault diagnostics for a class of non-linear systems using linear matrix inequalities. International Journal of Control, 2004, 77, 920-930.	1.2	53
11	Real-Time Estimation of Rollover Index for Tripped Rollovers With a Novel Unknown Input Nonlinear Observer. IEEE/ASME Transactions on Mechatronics, 2014, 19, 743-754.	3.7	51
12	On the Use of Torque-Biasing Systems for Electronic Stability Control: Limitations and Possibilities. IEEE Transactions on Control Systems Technology, 2007, 15, 581-589.	3.2	50
13	High-Gain Nonlinear Observer With Lower Tuning Parameter. IEEE Transactions on Automatic Control, 2019, 64, 3194-3209.	3.6	46
14	Flexible Microtactile Sensor for Normal and Shear Elasticity Measurements. IEEE Transactions on Industrial Electronics, 2012, 59, 4907-4913.	5.2	38
15	Tracking of Vehicle Motion on Highways and Urban Roads Using a Nonlinear Observer. IEEE/ASME Transactions on Mechatronics, 2019, 24, 644-655.	3.7	36
16	On the need for switched-gain observers for non-monotonic nonlinear systems. Automatica, 2020, 114, 108814.	3.0	36
17	Zero-Energy Active Suspension System for Automobiles With Adaptive Sky-Hook Damping. Journal of Vibration and Acoustics, Transactions of the ASME, 2013, 135, .	1.0	32
18	Observer Design for Parameter Varying Differentiable Nonlinear Systems, With Application to Slip Angle Estimation. IEEE Transactions on Automatic Control, 2017, 62, 1940-1945.	3.6	32

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19	Non-Intrusive Piston Position Measurement System Using Magnetic Field Measurements. IEEE Sensors Journal, 2013, 13, 3106-3114.	2.4	31
20	Sequential LMI approach for the design of a BMI-based robust observer state feedback controller with nonlinear uncertainties. International Journal of Robust and Nonlinear Control, 2018, 28, 1246-1260.	2.1	30
21	Handheld Microtactile Sensor for Elasticity Measurement. IEEE Sensors Journal, 2011, 11, 1935-1942.	2.4	26
22	Friction coefficient measurement for autonomous winter road maintenance. Vehicle System Dynamics, 2009, 47, 497-512.	2.2	25
23	Piezoelectric active sensing system for crack detection in concrete structure. Journal of Civil Structural Health Monitoring, 2016, 6, 129-139.	2.0	24
24	Direction cosine matrix estimation with an inertial measurement unit. Mechanical Systems and Signal Processing, 2018, 109, 268-284.	4.4	22
25	Paper-Based Supercapacitive Mechanical Sensors. Scientific Reports, 2018, 8, 16284.	1.6	20
26	Rear Vehicle Tracking on a Bicycle Using Active Sensor Orientation Control. IEEE Transactions on Intelligent Transportation Systems, 2018, 19, 2638-2649.	4.7	20
27	Online state estimation for a physics-based Lithium-Sulfur battery model. Journal of Power Sources, 2021, 489, 229495.	4.0	20
28	Simultaneous Cyber-Attack Detection and Radar Sensor Health Monitoring in Connected ACC Vehicles. IEEE Sensors Journal, 2021, 21, 15741-15752.	2.4	19
29	Novel Batteryless Wireless Sensor for Traffic-Flow Measurement. IEEE Transactions on Vehicular Technology, 2010, 59, 3249-3260.	3.9	17
30	Observer design for differentiable Lipschitz nonlinear systems with time-varying parameters. , 2014, , .		17
31	Hysteresis Compensation and Nonlinear Observer Design for State-of-Charge Estimation Using a Nonlinear Double-Capacitor Li-Ion Battery Model. IEEE/ASME Transactions on Mechatronics, 2022, 27, 594-604.	3.7	17
32	Active Control of Sound Transmission Through Windows With Carbon Nanotube-Based Transparent Actuators. IEEE Transactions on Control Systems Technology, 2007, 15, 704-714.	3.2	14
33	Multi-objective coordinated control for advanced adaptive cruise control system. , 2009, , .		14
34	Two-Dimensional Sensor System for Automotive Crash Prediction. IEEE Transactions on Intelligent Transportation Systems, 2014, 15, 178-190.	4.7	14
35	Bridge Life Extension Using Semiactive Vibration Control. IEEE/ASME Transactions on Mechatronics, 2015, 20, 207-216.	3.7	14
36	Adaptive Vibration Cancellation for Tire-Road Friction Coefficient Estimation on Winter Maintenance Vehicles. IEEE Transactions on Control Systems Technology, 2010, 18, 1023-1032.	3.2	13

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37	A Novel Real-Time Capacitance Estimation Methodology for Battery-Less Wireless Sensor Systems. IEEE Sensors Journal, 2010, 10, 1647-1657.	2.4	12
38	Ultra-Low Power Control System for Maximal Energy Harvesting From Short Duration Vibrations. IEEE Transactions on Control Systems Technology, 2010, 18, 252-266.	3.2	12
39	Magnetic Sensor-Based Large Distance Position Estimation With Disturbance Compensation. IEEE Sensors Journal, 2015, 15, 4249-4258.	2.4	12
40	Novel Supercapacitor-Based Force Sensor Insensitive to Parasitic Noise. , 2017, 1, 1-4.		12
41	Dynamic Model Inversion Techniques for Breath-by-Breath Measurement of Carbon Dioxide from Low Bandwidth Sensors. IEEE Sensors Journal, 2010, 10, 1637-1646.	2.4	11
42	Flexible Distributed Pressure Sensing Strip for a Urethral Catheter. Journal of Microelectromechanical Systems, 2015, 24, 1840-1847.	1.7	11
43	Measurement of Tension in a String Using an Array of Capacitive Force Sensors. IEEE Sensors Journal, 2013, 13, 792-800.	2.4	10
44	Adaptive Dipole Model Based Disturbance Compensation in Nonlinear Magnetic Position Systems. IEEE/ASME Transactions on Mechatronics, 2017, 22, 794-803.	3.7	10
45	Robust Data-Driven Neuro-Adaptive Observers With Lipschitz Activation Functions. , 2019, , .		10
46	Low-Density Lidar Based Estimation System for Bicycle Protection. IEEE Transactions on Intelligent Vehicles, 2021, 6, 67-77.	9.4	10
47	A Low-Profile Supercapacitor-Based Normal and Shear Force Sensor. IEEE Sensors Journal, 2021, 21, 239-249.	2.4	10
48	Magnetic Position Estimation in Ferromagnetic Systems Involving Significant Hysteresis. IEEE/ASME Transactions on Mechatronics, 2018, 23, 1555-1563.	3.7	9
49	Step length estimation with wearable sensors using a switched-gain nonlinear observer. Biomedical Signal Processing and Control, 2021, 69, 102822.	3.5	9
50	Invisible speakers in home windows for simultaneous auxiliary audio playback and active noise cancellation. Mechatronics, 2012, 22, 1031-1042.	2.0	8
51	Nature-inspired position determination using inherent magnetic fields. Technology, 2014, 02, 161-170.	1.4	8
52	Feasibility analysis of the bilinear matrix inequalities with an application to multi-objective nonlinear observer design. , 2016, , .		8
53	Magnetic position estimation using optimal sensor placement and nonlinear observer for smart actuators. Control Engineering Practice, 2021, 112, 104817.	3.2	8
54	Nonlinear Observer for Vehicle Motion Tracking. , 2018, , .		7

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55	Smartphone localization inside a moving car for prevention of distracted driving. <i>Vehicle System Dynamics</i> , 2020, 58, 290-306.	2.2	7
56	Simultaneous State Estimation and Tire Model Learning for Autonomous Vehicle Applications. <i>IEEE/ASME Transactions on Mechatronics</i> , 2021, 26, 1941-1950.	3.7	7
57	Nonlinear observer design for a magnetic position estimation technique. , 2015, , .		6
58	A novel collision avoidance system for bicycles. , 2016, , .		6
59	Transparent Flexible Active Faraday Cage Enables In Vivo Capacitance Measurement in Assembled Microsensor. , 2017, 1, 1-4.		6
60	Carbon nano-structured neural probes show promise for magnetic resonance imaging applications. <i>Biomedical Physics and Engineering Express</i> , 2018, 4, 015001.	0.6	6
61	Active Sensing on a Bicycle for Simultaneous Search and Tracking of Multiple Rear Vehicles. <i>IEEE Transactions on Vehicular Technology</i> , 2019, 68, 5295-5308.	3.9	6
62	3-D Electromagnetic Position Estimation System Using High-Magnetic-Permeability Metal for Continuum Medical Robots. <i>IEEE Robotics and Automation Letters</i> , 2022, 7, 2581-2588.	3.3	6
63	Estimation of Three-Dimensional Thoracoabdominal Displacements During Respiration Using Inertial Measurement Units. <i>IEEE/ASME Transactions on Mechatronics</i> , 2022, 27, 4224-4234.	3.7	6
64	LMI-Based Observer Design for Non-Globally Lipschitz Systems Using Kirszbraunâ€™Valentine Extension Theorem. , 2022, 6, 2617-2622.		6
65	A sequential LMI approach to design a BMI-based multi-objective nonlinear observer. <i>European Journal of Control</i> , 2018, 44, 50-57.	1.6	5
66	An Instrumented Urethral Catheter with a Distributed Array of Iontronic Force Sensors. <i>Annals of Biomedical Engineering</i> , 2021, 49, 149-161.	1.3	5
67	Finite-time estimation algorithms for LPV discrete-time systems with application to output feedback stabilization. <i>Automatica</i> , 2021, 125, 109436.	3.0	5
68	Structural vibration control for broadband noise attenuation in enclosures. <i>Journal of Mechanical Science and Technology</i> , 2005, 19, 1414-1423.	0.7	4
69	Instrumented urethral catheter and its<i>ex vivo</i>validation in a sheep urethra. <i>Measurement Science and Technology</i> , 2017, 28, 035702.	1.4	4
70	A remote position sensing method based on passive high magnetic permeability thin films. <i>Sensors and Actuators A: Physical</i> , 2019, 295, 217-223.	2.0	4
71	Vehicle Tracking for Heavy Road Vehicle Collision Avoidance with an Inexpensive Solid State Laser Sensor. , 2019, , .		4
72	Supercapacitive Strain Sensor With Ultrahigh Sensitivity and Range. , 2019, 3, 1-4.		4

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73	Hybrid nonlinear observer for battery state-of-charge estimation using nonmonotonic force measurements. <i>Advanced Control for Applications</i> , 2020, 2, e38.	0.8	4
74	A Smart Bicycle That Protects Itself: Active Sensing and Estimation for Car-Bicycle Collision Prevention. <i>IEEE Control Systems</i> , 2021, 41, 28-57.	1.0	4
75	A novel algorithm to track closely spaced road vehicles using a low density flash lidar. <i>Signal Processing</i> , 2022, 191, 108360.	2.1	4
76	Vehicle Counting and Maneuver Classification With Support Vector Machines Using Low-Density Flash Lidar. <i>IEEE Transactions on Vehicular Technology</i> , 2022, 71, 86-97.	3.9	4
77	Directional Sound for Long-Distance Auditory Warnings From a Highway Construction Work Zone. <i>IEEE Transactions on Vehicular Technology</i> , 2010, 59, 2266-2276.	3.9	3
78	Capacitance ratio estimation on a novel MEMS tactile sensor for elasticity measurement. , 2011, , .		3
79	Modeling of magnetic fields on a cylindrical surface and associated parameter estimation for development of a size sensor. <i>Measurement Science and Technology</i> , 2016, 27, 115006.	1.4	3
80	Wearable Coplanar Capacitive Sensor for Measurement of Water Contentâ€”A Preliminary Endeavor ¹ . <i>Journal of Medical Devices, Transactions of the ASME</i> , 2016, 10, .	0.4	3
81	High-voltage thin-film supercapacitor with nano-structured electrodes and novel architecture. <i>Technology</i> , 2016, 04, 55-59.	1.4	3
82	Observers for Nonlinear Systems : Part 2: An Overview of the Special Issue. <i>IEEE Control Systems</i> , 2017, 37, 30-32.	1.0	3
83	ON THE DIFFERENCE BETWEEN BOUNDED JACOBIAN AND LIPSCHITZ OBSERVERS FOR NONLINEAR ESTIMATION APPLICATIONS. <i>Transactions of the Canadian Society for Mechanical Engineering</i> , 2017, 41, 395-415.	0.3	3
84	Computation of Magnetic Field Distortions and Impact on T ₂ *-weighted MRI, with Applications to Magnetic Susceptibility Parameter Estimation. <i>Biomedical Physics and Engineering Express</i> , 2018, 4, 045029.	0.6	3
85	Electromagnetic Position Measurement System Immune to Ferromagnetic Disturbances. <i>IEEE Sensors Journal</i> , 2019, 19, 9662-9671.	2.4	3
86	Linear Position Estimation on Smart Actuators Using a Nonlinear Observer. , 2019, , .		3
87	On-Bicycle Vehicle Tracking at Traffic Intersections Using Inexpensive Low-Density Lidar. , 2019, , .		3
88	On Using a Low-Density Flash Lidar for Road Vehicle Tracking. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2021, 143, .	0.9	3
89	Observer Design for Non-Globally Lipschitz Nonlinear Systems Using Hilbert Projection Theorem. , 2022, 6, 2581-2586.		3
90	An LMI-based discrete time nonlinear observer for Light-Emitting Diode optical communication. <i>Automatica</i> , 2022, 141, 110309.	3.0	3

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91	Closed-loop snowplow applicator control using road condition measurements. <i>Vehicle System Dynamics</i> , 2011, 49, 625-638.	2.2	2
92	Note: Development of leg size sensors for fluid accumulation monitoring. <i>Review of Scientific Instruments</i> , 2016, 87, 056109.	0.6	2
93	Robust H_{∞} Observer-based Stabilization of Linear Discrete-time Systems with Parameter Uncertainties. <i>International Journal of Control, Automation and Systems</i> , 2019, 17, 2261-2273.	1.6	2
94	Electromagnetic Position Estimation Using Active Current Control and Nonlinear Observer. , 2020, , .		2
95	A Switched-Gain Nonlinear Observer for LED Optical Communication. <i>IFAC-PapersOnLine</i> , 2020, 53, 4941-4946.	0.5	2
96	Adaptive virtual referencing for the extraction of extracellularly recorded action potentials in noisy environments. <i>Journal of Neural Engineering</i> , 2020, 17, 056011.	1.8	2
97	Nonlinear observer for electromagnetic position estimation using active current control. <i>Mechanical Systems and Signal Processing</i> , 2022, 167, 108449.	4.4	2
98	Toward Completely Sampled Extracellular Neural Recording During fMRI. <i>IEEE Transactions on Medical Imaging</i> , 2022, 41, 1735-1746.	5.4	2
99	Discussion on: "Hybrid Parameter-varying Model Predictive Control for Autonomous Vehicle Steering" <i>European Journal of Control</i> , 2008, 14, 434-436.	1.6	1
100	Novel non-intrusive sensor for piston position measurement. , 2013, , .		1
101	Seatbelt and seatback control for occupant protection in frontal automotive collisions. <i>Vehicle System Dynamics</i> , 2013, 51, 1467-1488.	2.2	1
102	Dynamic model for automotive side impact crashes. <i>Vehicle System Dynamics</i> , 2014, 52, 875-890.	2.2	1
103	Improved auscultation with a stethoscope using model inversion for unknown input estimation. , 2016, , .		1
104	Two-dimensional active sensing system for bicyclist-motorist crash prediction. , 2017, , .		1
105	Wearable Water Content Sensor Based on Ultrasound and Magnetic Sensing. <i>Annals of Biomedical Engineering</i> , 2018, 46, 2079-2090.	1.3	1
106	Multi-Objective Nonlinear Observer Design using BMIs. , 2018, , .		1
107	Magnetic sensor-based simultaneous state and parameter estimation using a nonlinear observer. <i>International Journal of Control</i> , 2019, 92, 2639-2646.	1.2	1
108	Observer design of descriptor nonlinear system with nonlinear outputs by using W criterion. <i>Journal of the Franklin Institute</i> , 2019, 356, 3531-3553.	1.9	1

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109	Novel Composite Gold-Aluminum Electrode with Application to Neural Recording and Stimulation in Ultrahigh Field Magnetic Resonance Imaging Scanners. <i>Annals of Biomedical Engineering</i> , 2021, 49, 2337-2348.	1.3	1
110	Hysteresis Compensation in State-of-Charge Estimation with a Nonlinear Double-Capacitor Li-Ion Battery Model. , 2021, , .		1
111	Reference-free adaptive filtering of extracellular neural signals recording in ultra-high field magnetic resonance imaging scanners: Removal of periodic interferences. <i>Biomedical Signal Processing and Control</i> , 2022, 71, 102758.	3.5	1
112	Observer-Based Deconvolution of Deterministic Input in Coprime Multichannel Systems With Its Application to Noninvasive Central Blood Pressure Monitoring. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2020, 142, 091006.	0.9	1
113	Disturbance estimation in novel non-intrusive magnetic position measurement system. , 2015, , .		0
114	Modeling and estimation for a wearable size sensor to monitor lower leg swelling. , 2016, , .		0
115	On Addressing Hysteresis in Magnetic Position Estimation. , 2018, , .		0
116	Vibrotactile perception in Dupuytren disease. <i>Journal of Plastic Surgery and Hand Surgery</i> , 2021, 55, 32-40.	0.4	0
117	Electromagnetic Angular Position Sensing Using High-Magnetic-Permeability Materials. <i>IEEE Sensors Journal</i> , 2022, 22, 11626-11636.	2.4	0