James Forbes

List of Publications by Year in descending order

116 papers	1,209 citations	361413 20 h-index	501196 28 g-index
117 all docs	117 docs citations	117 times ranked	730 citing authors

#	Article	IF	Citations
1	Koopman Linearization for Data-Driven Batch State Estimation of Control-Affine Systems. IEEE Robotics and Automation Letters, 2022, 7, 866-873.	5.1	1
2	Position and attitude tracking control using CCW and SNI system theory with applications to multi-agent systems. Automatica, 2022, 139, 110203.	5.0	1
3	Vectorial parameterizations of pose. Robotica, 2022, 40, 2409-2427.	1.9	3
4	System Identification and Two-Degree-of-Freedom Control of Nonlinear, Viscoelastic Tissues. IEEE Transactions on Biomedical Engineering, 2022, 69, 3803-3811.	4.2	2
5	Mind the Gap: Norm-Aware Adaptive Robust Loss for Multivariate Least-Squares Problems. IEEE Robotics and Automation Letters, 2022, 7, 7116-7123.	5.1	2
6	Model Predictive Control of a Tandem-Rotor Helicopter with a Non-Uniformly Spaced Prediction Horizon. , 2022, , 1-1.		2
7	Relative Position Estimation Between Two UWB Devices With IMUs. IEEE Robotics and Automation Letters, 2021, 6, 4313-4320.	5.1	30
8	Cascaded Filtering Using the Sigma Point Transformation. IEEE Robotics and Automation Letters, 2021, 6, 4758-4765.	5.1	2
9	Relative Position Estimation in Multi-Agent Systems Using Attitude-Coupled Range Measurements. IEEE Robotics and Automation Letters, 2021, 6, 4955-4961.	5.1	28
10	Heading Estimation Using Ultra-Wideband Received Signal Strength and Gaussian Processes. IEEE Robotics and Automation Letters, 2021, 6, 8387-8393.	5.1	1
11	Design and Configuration of Folded Platonic Strapdowns of Biaxial MEMS Accelerometers. Journal of Mechanical Design, Transactions of the ASME, 2021, 143, .	2.9	0
12	MIMO Nyquist interpretation of the large gain theorem. International Journal of Control, 2020, 93, 2326-2335.	1.9	1
13	Conic sector analysis using integral quadratic constraints. International Journal of Robust and Nonlinear Control, 2020, 30, 741-755.	3.7	2
14	Lagrangian Derivation of Variable-Mass Equations of Motion using an Arbitrary Attitude Parameterization. Journal of the Astronautical Sciences, 2020, 67, 1206-1219.	1.5	0
15	Finite-Horizon LQR Control of Quadrotors on $SE_2(3)$. IEEE Robotics and Automation Letters, 2020, 5, 5748-5755.	5.1	31
16	Exactly sparse Gaussian variational inference with application to derivative-free batch nonlinear state estimation. International Journal of Robotics Research, 2020, 39, 1473-1502.	8.5	12
17	Elastodynamics of a parallel SchÃ¶nflies-motion generator. Transactions of the Canadian Society for Mechanical Engineering, 2020, 44, 511-519.	0.8	0
18	The Invariant Rauch-Tung-Striebel Smoother. IEEE Robotics and Automation Letters, 2020, 5, 5067-5074.	5.1	8

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19	Navigation and Control of Unconventional VTOL UAVs in Forward-Flight With Explicit Wind Velocity Estimation. IEEE Robotics and Automation Letters, 2020, 5, 1151-1158.	5.1	11
20	The Complex-Step Derivative Approximation on Matrix Lie Groups. IEEE Robotics and Automation Letters, 2020, 5, 906-913.	5.1	8
21	A class of biaxial micro/meso-scale structures for isotropic in-plane inertial sensing and actuation: design, fabrication and experiments. Microsystem Technologies, 2020, 26, 2639-2648.	2.0	1
22	Higher Order Nonlinear Complementary Filtering on Lie Groups. IEEE Transactions on Automatic Control, 2019, 64, 1772-1783.	5.7	11
23	Linear- and Linear-Matrix-Inequality-Constrained State Estimation for Nonlinear Systems. IEEE Transactions on Aerospace and Electronic Systems, 2019, 55, 3153-3167.	4.7	8
24	A novel capacitive sensing structure for simultaneous detection of biaxial low-g acceleration in a commercial MEMS process. Microsystem Technologies, 2019, 25, 4475-4481.	2.0	2
25	Iterative â€conic controller synthesis. International Journal of Robust and Nonlinear Control, 2019, 29, 3701-3714.	3.7	6
26	Dynamic Modeling and Adaptive Control of a Single Degree-of-Freedom Flexible Cable-Driven Parallel Robot. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2019, 141, .	1.6	19
27	Invariant Sliding Window Filtering for Attitude and Bias Estimation. , 2019, , .		3
28	An Invariant Extended Hâˆž Filter. , 2019, , .		3
29	Synthesis of Strictly Negative Imaginary Controllers Using a Hâˆž Performance Index. , 2019, , .		1
30	Nonlinear Attitude and Bias Observer Design with a Gibbs-Inspired Cost Function Using Direct Vector Measurements. , 2019, , .		3
31	System Identification and Feedforward Control of a Fatigue Structural Testing Rig: The Single Actuator Case. IFAC-PapersOnLine, 2019, 52, 382-387.	0.9	3
32	Relative Constrained SLAM for Robot Navigation. , 2019, , .		1
33	$mathcal{H}_{infty}$-Optimal Strictly Positive Real Parallel Feedforward Control. , 2019, , .		0
34	Synthesis of strictly positive real â„‹₂ controllers using dilated LMIs. International Journal of Control, 2019, 92, 2584-2590.	1.9	5
35	Conic-Sector-Based Analysis and Control Synthesis for Linear Parameter Varying Systems. , 2018, 2, 224-229.		12
36	Gradient-Based Observer for Simultaneous Localization and Mapping. IEEE Transactions on Automatic Control, 2018, 63, 4338-4344.	5.7	19

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37	Zero Shaping of Nonminimum Phase Aircraft Dynamics. , 2018, , .		3
38	A Comparative Study of Inputâ€“Output Stability Results. IEEE Transactions on Automatic Control, 2018, 63, 463-476.	5.7	9
39	Very Strictly Passive Controller Synthesis With Affine Parameter Dependence. IEEE Transactions on Automatic Control, 2018, 63, 1531-1537.	5.7	7
40	Constrained Kalman Filtering. Journal of Guidance, Control, and Dynamics, 2018, 41, 1209-1213.	2.8	3
41	Flexible Cable-Driven Parallel Manipulator Control: Maintaining Positive Cable Tensions. IEEE Transactions on Control Systems Technology, 2018, 26, 1874-1883.	5.2	30
42	Riemann Sphere Interpretation of the Passivity, Small Gain, and Conic Sector Theorems. , 2018, , .		0
43	Linearly Combining Sensor Measurements Optimally to Enforce an SPR Transfer Matrix. , 2018, , .		4
44	A Linear- and Linear-Matrix-Inequality-Constrained Extended Kalman Filter. , 2018, , .		1
45	Design of a biaxial high frequency-ratio low-g MEMS accelerometer. Microsystem Technologies, 2018, 24, 3851-3861.	2.0	2
46	Iterative $mathcal{H}_{2}$-Conic Controller Synthesis. , 2018, , .		0
47	Constrained Attitude Control on SO(3) via Semidefinite Programming. Journal of Guidance, Control, and Dynamics, 2018, 41, 2483-2488.	2.8	12
48	<inline-formula> <tex-math notation="LaTeX">$mathcal{H}_infty$ </tex-math> </inline-formula>-Optimal Parallel Feedforward Control Using Minimum Gain. , 2018, 2, 677-682.		5
49	Nonlinear Estimator Design on the Special Orthogonal Group Using Vector Measurements Directly. IEEE Transactions on Automatic Control, 2017, 62, 149-160.	5.7	36
50	Analysis and synthesis of input strictly passive gain-scheduled controllers. Journal of the Franklin Institute, 2017, 354, 1285-1301.	3.4	5
51	Gust-Load Alleviation of a Flexible Aircraft using a Disturbance Observer. , 2017, , .		5
52	Continuousâ€time Kalman filtering on the orthogonal group O(n). International Journal of Robust and Nonlinear Control, 2017, 27, 3466-3487.	3.7	4
53	Kalman-Filter-Based Unconstrained and Constrained Extremum-Seeking Guidance on SO(3). Journal of Guidance, Control, and Dynamics, 2017, 40, 2260-2271.	2.8	8
54	Discrete-time minmax filtering subject to a norm-constrained state estimate. Automatica, 2017, 85, 477-480.	5.0	3

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55	Regional pole and zero placement with static output feedback via the Modified Minimum Gain Lemma. , 2017, , .		5
56	Dynamic Modeling, Trajectory Optimization, and Control of a Flexible Kiteplane. IEEE Transactions on Control Systems Technology, 2017, 25, 1297-1306.	5.2	7
57	Conic Bounds for Systems Subject to Delays. IEEE Transactions on Automatic Control, 2017, 62, 2006-2013.	5.7	5
58	Discrete-Time SO(n)-Constrained Kalman Filtering. Journal of Guidance, Control, and Dynamics, 2017, 40, 28-37.	2.8	9
59	Nyquist Interpretation of the Large Gain Theorem * *This work was supported in part by the Natural Sciences and Engineering Research Council of Canadaâ€™s Postgraduate Scholarship program.. IFAC-PapersOnLine, 2017, 50, 3606-3611.	0.9	1
60	Conic controller synthesis that minimizes an upper bound on the closed-loop â„‹2-norm. , 2017, , .		1
61	L2-Gain and Passivity Techniques in Nonlinear Control, Third Edition [Bookshelf]. IEEE Control Systems, 2017, 37, 75-76.	0.8	6
62	Norm- and linear-inequality-constrained state estimation: An LMI approach. , 2017, , .		2
63	Constrained extremum-seeking guidance using a constrained Kalman filter. , 2017, , .		1
64	Sigma Point Kalman Filtering on Matrix Lie Groups Applied to the SLAM Problem. Lecture Notes in Computer Science, 2017, , 318-328.	1.3	4
65	Flexible kiteplane modeling and control with an unsteady aerodynamic model. , 2016, , .		2
66	Gravity-gradient-stabilized spacecraft attitude estimation using rate-gyroscope measurements. , 2016, , .		0
67	Saturated control of flexible-joint manipulators using a Hammerstein strictly positive real compensator. Robotica, 2016, 34, 1367-1382.	1.9	8
68	Nonlinear Dynamic Inversion of a Flexible Aircraft. IFAC-PapersOnLine, 2016, 49, 338-342.	0.9	10
69	State estimator design for a single degree of freedom cable-actuated system. Journal of the Franklin Institute, 2016, 353, 4845-4869.	3.4	13
70	Exponential convergence of a nonlinear attitude estimator. Automatica, 2016, 72, 11-18.	5.0	20
71	Robust controller design using the Large Gain Theorem: The full-state feedback case. , 2016, , .		4
72	A Very Strictly Passive Gain-Scheduled Controller: Theory and Experiments. IEEE/ASME Transactions on Mechatronics, 2016, 21, 2817-2826.	5.8	12

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73	The Extended Conic Sector Theorem. IEEE Transactions on Automatic Control, 2016, 61, 1931-1937.	5.7	16
74	Continuous-Time Estimation of Attitude Using B-Splines on Lie Groups. Journal of Guidance, Control, and Dynamics, 2016, 39, 242-261.	2.8	17
75	The minimum gain lemma. International Journal of Robust and Nonlinear Control, 2015, 25, 2515-2531.	3.7	11
76	A nonlinear attitude estimator with desirable convergence properties. , 2015, , .		5
77	Maintaining positive cable tensions during operation of a single degree of freedom flexible cable-driven parallel manipulator. , 2015, , .		2
78	Directionâ€cosineâ€matrixâ€based attitude control subject to actuator saturation. IET Control Theory and Applications, 2015, 9, 1653-1661.	2.1	4
79	Dynamic Modeling and Passivity-Based Control of a Single Degree of Freedom Cable-Actuated System. IEEE Transactions on Control Systems Technology, 2015, 23, 898-909.	5.2	34
80	The exterior conic sector lemma. International Journal of Control, 2015, 88, 2250-2263.	1.9	5
81	Generalized Euler Sequences Revisited. Journal of the Astronautical Sciences, 2015, 62, 1-20.	1.5	5
82	Strictly positive real and conic system syntheses using observers. , 2015, , .		2
83	Modeling and Control of Flexible Telescoping Manipulators. IEEE Transactions on Robotics, 2015, 31, 936-947.	10.3	21
84	Modeling and control of a wind energy harvesting kite with flexible cables. , 2015, , .		7
85	Attitude control with active actuator saturation prevention. Acta Astronautica, 2015, 107, 187-195.	3.2	17
86	Modeling of spherical robots rolling on generic surfaces. Multibody System Dynamics, 2015, 35, 91-109.	2.7	28
87	Linear-Matrix-Inequality-Based Solution to Wahbaâ€™s Problem. Journal of Guidance, Control, and Dynamics, 2015, 38, 147-151.	2.8	13
88	SATURATED PROPORTIONAL DERIVATIVE CONTROL OF A SINGLE-LINK FLEXIBLE-JOINT MANIPULATOR. Transactions of the Canadian Society for Mechanical Engineering, 2014, 38, 241-250.	0.8	4
89	Identities for Deriving Equations of Motion Using Constrained Attitude Parameterizations. Journal of Guidance, Control, and Dynamics, 2014, 37, 1283-1289.	2.8	8
90	Conic-sector-based controller synthesis: Theory and experiments. , 2014, , .		16

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91	Norm-Constrained Consider Kalman Filtering. Journal of Guidance, Control, and Dynamics, 2014, 37, 2048-2053.	2.8	8
92	Dynamic Modeling and Noncollocated Control of a Flexible Planar Cable-Driven Manipulator. IEEE Transactions on Robotics, 2014, 30, 1386-1397.	10.3	63
93	General Identities for Parameterizations of SO(3) With Applications. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	2.2	13
94	Conic-sector-based control to circumvent passivity violations. International Journal of Control, 2014, 87, 1467-1477.	1.9	28
95	Rolling Stability of a Power-Generating Tumbleweed Rover. Journal of Spacecraft and Rockets, 2014, 51, 1895-1906.	1.9	11
96	Rotation-matrix-based attitude control without angular velocity measurements. , 2014, , .		6
97	Saturated proportional derivative control of flexible-joint manipulators. Robotics and Computer-Integrated Manufacturing, 2014, 30, 658-666.	9.9	17
98	Continuous-time norm-constrained Kalman filtering. Automatica, 2014, 50, 2546-2554.	5.0	21
99	DYNAMIC MODELLING, ESTIMATION, AND CONTROL FOR PRECISION POINTING OF AN ATMOSPHERIC BALLOON PLATFORM. Transactions of the Canadian Society for Mechanical Engineering, 2014, 38, 263-274.	0.8	1
100	Design Specifications for Biaxial Navigation-Grade MEMS Accelerometers. , 2014, , .		2
101	Dual approaches to strictly positive real controller synthesis with a performance using linear matrix inequalities. International Journal of Robust and Nonlinear Control, 2013, 23, 903-918.	3.7	12
102	Overcoming passivity violations: closedâ€loop stability, controller design and controller scheduling. IET Control Theory and Applications, 2013, 7, 785-795.	2.1	4
103	Magnetic Attitude Control of a Flexible Satellite. Journal of Guidance, Control, and Dynamics, 2013, 36, 1522-1527.	2.8	28
104	Adaptive approaches to nonlinear state estimation for mobile robot localization: an experimental comparison. Transactions of the Institute of Measurement and Control, 2013, 35, 971-985.	1.7	7
105	On the Solution ofWahbaâ€™s Problem on S O (n). Journal of the Astronautical Sciences, 2013, 60, 1-31.	1.5	14
106	Synthesis of Optimal Finite-Frequency Controllers Able to Accommodate Passivity Violations. IEEE Transactions on Control Systems Technology, 2013, 21, 1808-1819.	5.2	17
107	Conic-Sector-based control to circumvent passivity violations. , 2013, , .		4
108	Passivity-Based Attitude Control on the Special Orthogonal Group of Rigid-Body Rotations. Journal of Guidance, Control, and Dynamics, 2013, 36, 1596-1605.	2.8	38

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109	Nonlinear Optimal Control of Holomonic Indoor Airship. , 2012, , .		3
110	Single-Link Flexible Manipulator Control Accommodating Passivity Violations: Theory and Experiments. IEEE Transactions on Control Systems Technology, 2012, 20, 652-662.	5.2	32
111	Design of optimal strictly positive real controllers using numerical optimization for the control of flexible robotic systems. Journal of the Franklin Institute, 2011, 348, 2191-2215.	3.4	17
112	Pose estimation using linearized rotations and quaternion algebra. Acta Astronautica, 2011, 68, 101-112.	3.2	56
113	Linear Time-Varying Passivity-Based Attitude Control Employing Magnetic and Mechanical Actuation. Journal of Guidance, Control, and Dynamics, 2011, 34, 1363-1372.	2.8	23
114	Dynamic modeling and stability analysis ofÂaÂpower-generating tumbleweed rover. Multibody System Dynamics, 2010, 24, 413-439.	2.7	20
115	Design of Gain-Scheduled Strictly Positive Real Controllers Using Numerical Optimization for Flexible Robotic Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2010, 132, .	1.6	23
116	Geometric Approach to Spacecraft Attitude Control Using Magnetic and Mechanical Actuation. Journal of Guidance, Control, and Dynamics, 2010, 33, 590-595.	2.8	37