Jan Tommy Gravdahl

List of Publications by Citations

147 papers	2,507 citations	28 h-index	45 g-index
163 ext. papers	3,222 ext. citations	2.8 avg, IF	5.35 L-index

#	Paper	IF	Citations
147	Spacecraft coordination control in 6DOF: Integrator backstepping vs passivity-based control. *Automatica*, **2008**, 44, 2896-2901	5.7	150
146	A review on modelling, implementation, and control of snake robots. *Robotics and Autonomous Systems*, **2012**, 60, 29-40	3.5	141
145	Integral Line-of-Sight Guidance and Control of Underactuated Marine Vehicles: Theory, Simulations, and Experiments. *IEEE Transactions on Control Systems Technology*, **2016**, 24, 1623-1642	4.8	137
144	Satellite Attitude Control by Quaternion-Based Backstepping. *IEEE Transactions on Control Systems Technology*, **2009**, 17, 227-232	4.8	129
143	Modelling of UAV formation flight using 3D potential field. *Simulation Modelling Practice and Theory*, **2008**, 16, 1453-1462	3.9	92
142	Centrifugal compressor surge and speed control. *IEEE Transactions on Control Systems Technology*, **1999**, 7, 567-579	4.8	90
141	Spacecraft attitude control using explicit model predictive control. *Automatica*, **2005**, 41, 2107-2114	5.7	77
140	Drive torque actuation in active surge control of centrifugal compressors. *Automatica*, **2002**, 38, 1881-1893	5.7	70
139	Snake Robots. *Advances in Industrial Control*, **2013**,	0.3	69
138	Controllability and Stability Analysis of Planar Snake Robot Locomotion. *IEEE Transactions on Automatic Control*, **2011**, 56, 1365-1380	5.9	68
137	Compressor Surge and Rotating Stall. *Advances in Industrial Control*, **1999**,	0.3	66
136	Innovation in Underwater Robots: Biologically Inspired Swimming Snake Robots. *IEEE Robotics and Automation Magazine*, **2016**, 23, 44-62	3.4	59
135	Integral Line-of-Sight Guidance for Path Following Control of Underwater Snake Robots: Theory and Experiments. *IEEE Transactions on Robotics*, **2017**, 33, 610-628	6.5	58
134	Damping and Tracking Control Schemes for Nanopositioning. *IEEE/ASME Transactions on Mechatronics*, **2014**, 19, 432-444	5.5	51
133	Hybrid Modelling and Control of Obstacle-Aided Snake Robot Locomotion. *IEEE Transactions on Robotics*, **2010**, 26, 781-799	6.5	44
132	Robotic in-row weed control in vegetables. *Computers and Electronics in Agriculture*, **2018**, 154, 36-45	6.5	43
131	Mamba - A waterproof snake robot with tactile sensing **2014**,		42

130	Experimental Investigation of Obstacle-Aided Locomotion With a Snake Robot. *IEEE Transactions on Robotics*, **2011**, 27, 792-800	6.5	41
129	Singularity-free dynamic equations of vehicle–manipulator systems. *Simulation Modelling Practice and Theory*, **2010**, 18, 712-731	3.9	39
128	Explicit Model Predictive Control for Large-Scale Systems via Model Reduction. *Journal of Guidance, Control, and Dynamics*, **2008**, 31, 918-926	2.1	39
127	Snake Robot Locomotion in Environments With Obstacles. *IEEE/ASME Transactions on Mechatronics*, **2012**, 17, 1158-1169	5.5	38
126	Modeling of underwater snake robots **2014**,		34
125	Path following of underactuated autonomous underwater vehicles in the presence of ocean currents **2012**,		33
124	Modeling of Surge in Free-Spool Centrifugal Compressors: Experimental Validation. *Journal of Propulsion and Power*, **2004**, 20, 849-857	1.8	33
123	Optimal Paint Gun Orientation in Spray Paint Applications—Experimental Results. *IEEE Transactions on Automation Science and Engineering*, **2011**, 8, 438-442	4.9	31
122	Adaptive feed-forward hysteresis compensation for piezoelectric actuators. *Review of Scientific Instruments*, **2012**, 83, 085001	1.7	31
121	Vehicle-Manipulator Systems. *Advances in Industrial Control*, **2014**,	0.3	30
120	UAV formation flight using 3D potential field **2008**,		28
119	A simplified model of planar snake robot locomotion **2010**,		27
118	Integral LOS guidance for horizontal path following of underactuated autonomous underwater vehicles in the presence of vertical ocean currents **2012**,		27
117	Planar Path Following of Underwater Snake Robots in the Presence of Ocean Currents. *IEEE Robotics and Automation Letters*, **2016**, 1, 383-390	4.2	26
116	Active surge control of compression system using drive torque. *Automatica*, **2008**, 44, 1135-1140	5.7	26
115	The Underwater Swimming Manipulator—A Bioinspired Solution for Subsea Operations. *IEEE Journal of Oceanic Engineering*, **2018**, 43, 402-417	3.3	21
114	Lyapunov Estimator for High-Speed Demodulation in Dynamic Mode Atomic Force Microscopy. *IEEE Transactions on Control Systems Technology*, **2018**, 26, 765-772	4.8	20
113	Bond graph modeling of centrifugal compression systems. *Simulation*, **2015**, 91, 998-1013	1.2	18

112	A Real-Time Algorithm for Determining the Optimal Paint Gun Orientation in Spray Paint Applications. *IEEE Transactions on Automation Science and Engineering*, **2010**, 7, 803-816	4.9	18
111	Integral line-of-sight for path following of underwater snake robots **2014**,		17
110	6-DOF mutual synchronization of formation flying spacecraft **2006**,		17
109	Locomotion Efficiency Optimization of Biologically Inspired Snake Robots. *Applied Sciences (Switzerland)*, **2018**, 8, 80	2.6	16
108	Motion planning and control of robotic manipulators on seaborne platforms. *Control Engineering Practice*, **2011**, 19, 809-819	3.9	16
107	A Simplified Method for Discrete-Time Repetitive Control Using Model-Less Finite Impulse Response Filter Inversion. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2016**, 138,	1.6	15
106	A waypoint guidance strategy for underwater snake robots **2014**,		14
105	Low-order continuous-time robust repetitive control: Application in nanopositioning. *Mechatronics*, **2015**, 30, 231-243	3	13
104	Trajectory Tracking for Underwater Swimming Manipulators using a Super Twisting Algorithm. *Asian Journal of Control*, **2019**, 21, 208-223	1.7	12
103	Differential geometric modelling and robust path following control of snake robots using sliding mode techniques **2014**,		12
102	A 3D motion planning framework for snake robots **2014**,		12
101	Energy efficiency of underwater snake robot locomotion **2015**,		11
100	Set-Based Control for Autonomous Spray Painting. *IEEE Transactions on Automation Science and Engineering*, **2018**, 15, 1785-1796	4.9	11
99	Energy efficiency of underwater robots. *IFAC-PapersOnLine*, **2015**, 48, 152-159	0.7	11
98	Singularity-free dynamic equations of spacecraft-manipulator systems. *Acta Astronautica*, **2011**, 69, 1057-1065	2.1	10
97	Stability analysis of snake robot locomotion based on averaging theory **2010**,		10
96	Active Compressor Surge Control Using Piston Actuation **2011**,		10
95	Quaternion-Based Backstepping Control of Relative Attitude in a Spacecraft Formation **2006**,		10

94	Design and control of precision drop-on-demand herbicide application in agricultural robotics **2014**,		9
93	Controllability analysis of planar snake robots influenced by viscous ground friction **2009**,		9
92	Tracking Control of an Articulated Intervention Autonomous Underwater Vehicle in 6DOF Using Generalized Super-twisting: Theory and Experiments. *IEEE Transactions on Control Systems Technology*, **2021**, 29, 353-369	4.8	9
91	Boarding control system for improved accessibility to offshore wind turbines: Full-scale testing. *Control Engineering Practice*, **2015**, 45, 207-218	3.9	8
90	A Machine Vision System for Robust Sorting of Herring Fractions. *Food and Bioprocess Technology*, **2016**, 9, 1893-1900	5.1	8
89	Path following control of planar snake robots using virtual holonomic constraints **2013**,		8
88	Stability analysis of underwater snake robot locomotion based on averaging theory **2014**,		8
87	Compliant control of the body shape of snake robots **2014**,		8
86	Fundamental properties of snake robot locomotion **2010**,		8
85	A modular and waterproof snake robot joint mechanism with a novel force/torque sensor **2012**,		8
84	Topics on Current Compensation for Path Following Applications of Underactuated Underwater Vehicles. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 184-191		8
83	Topography and force imaging in atomic force microscopy by state and parameter estimation **2015**,		7
82	Non-linear model predictive control for constrained robot navigation in row crops **2015**,		7
81	Optimal dynamic force mapping for obstacle-aided locomotion in 2D snake robots **2014**,		7
80	A control-oriented model of underwater snake robots **2014**,		7
79	Experimental comparison of adaptive controllers for trajectory tracking in agricultural robotics **2015**,		6
78	Combined kinematic and dynamic control of vehicle-manipulator systems. *Mechatronics*, **2020**, 69, 102389	3	6
77	Set-based collision avoidance applications to robotic systems. *Mechatronics*, **2020**, 69, 102399	3	6

76	A heat equation for freezing processes with phase change: stability analysis and applications. *International Journal of Control*, **2016**, 89, 833-849	1.5	6
75	Discrete-time repetitive control with model-less FIR filter inversion for high performance nanopositioning **2014**,		6
74	Nonlinear observer design for a Greitzer compressor model **2013**,		6
73	Path following of marine surface vessels with saturated transverse actuators **2013**,		6
72	Modeling of underwater snake robots moving in a vertical plane in 3D **2014**,		6
71	Lateral undulation of snake robots: a simplified model and fundamental properties. *Robotica*, **2013**, 31, 1005-1036	2.1	6
70	Introducing Back-up to Active Compressor Surge Control System. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 263-268		6
69	Optimal boundary control of a contact thawing process for foodstuff. *IFAC-PapersOnLine*, **2016**, 49, 183-188		6
68	Modelling and simulation of a flywheel based energy storage system for an industrial manipulator **2015**,		5
67	Optimal boundary control for the heat equation with application to freezing with phase change **2013**,		5
66	Simulator and Control System Design for a Free Floating Surface Effect Ship at Zero Vessel Speed. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 67-72		5
65	Path Following of Underactuated Surface Vessels in Presence of Unknown Constant Environmental Forces: Preliminary Results. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 85-90		5
64	PI2-Controller Applied to a Piezoelectric Nanopositioner Using Conditional Integrators and Optimal Tuning. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2011**, 44, 887-892		5
63	Experimental comparison of online parameter identification schemes for a nanopositioning stage with variable mass **2011**,		5
62	Discrete state-space model to solve the unit commitment and economic dispatch problems. *Energy Systems*, **2017**, 8, 525-547	1.7	4
61	A control-oriented model of underwater snake robots exposed to currents **2015**,		4
60	Design of a nonlinear damping control scheme for nanopositioning **2013**,		4
59	Analysis of underwater snake robot locomotion based on a control-oriented model **2015**,		4

58	Counter-Current and Co-Current Guidance of Underactuated Unmanned Marine Vehicles. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 60-66		4
57	Heave Motion Estimation on a Craft Using a Strapdown Inertial Measurement Unit. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 298-303		4
56	Path following control of snake robots in unstructured environments **2011**,		4
55	Robust damping PI repetitive control for nanopositioning **2012**,		4
54	Formation Modelling and 6DOF Spacecraft Coordination Control. *Proceedings of the American Control Conference*, **2007**,	1.2	4
53	Robot Dynamics with URDF & CasADi **2019**,		4
52	Dynamic formulation of the unit commitment and economic dispatch problems **2015**,		3
51	Active Compressor Surge Control System by Using Piston Actuation: Implementation and Experimental Results. *IFAC-PapersOnLine*, **2016**, 49, 347-352	0.7	3
50	Model-Based Identification of Nanomechanical Properties in Atomic Force Microscopy: Theory and Experiments. *IEEE Transactions on Control Systems Technology*, **2019**, 27, 2045-2057	4.8	3
49	The nonlinear heat equation with state-dependent parameters and its connection to the BurgersT and the potential BurgersTequation. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2014**, 47, 7019-7024		3
48	Modeling and control of a marine diesel engine driving a synchronous machine and a propeller **2014**,		3
47	Mixed-integer formulation of unit commitment problem for power systems: Focus on start-up cost **2013**,		3
46	Fixed-Structure, Low-Order Damping and Tracking Control Schemes for Nanopositioning. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 28-36		3
45	On the influence of ship motion prediction accuracy on motion planning and control of robotic manipulators on seaborne platforms **2010**,		3
44	A hybrid model of obstacle-aided snake robot locomotion **2010**,		3
43	Experimental investigation of fundamental properties of snake robot locomotion **2010**,		3
42	General Solutions to functional and kinematic Redundancy **2007**,		3
41	Tracking control of an articulated intervention AUV in 6DOF using the generalized super-twisting algorithm **2019**,		3

40	Ocean Color Hyperspectral Remote Sensing With High Resolution and Low Latency--The HYPSO-1 CubeSat Mission. *IEEE Transactions on Geoscience and Remote Sensing*, **2021**, 1-19	8.1	3
39	Comparison of two second-order sliding mode control algorithms for an articulated intervention AUV: Theory and experimental results. *Ocean Engineering*, **2021**, 222, 108480	3.9	3
38	Simple method for parameter identification of a nonlinear Greitzer compressor model. *IFAC-PapersOnLine*, **2018**, 51, 198-203	0.7	3
37	Robust control of a two-state Greitzer compressor model by state-feedback linearization **2016**,		2
36	Improvement of a Robotic Manipulator Model Based on Multivariate Residual Modeling. *Frontiers in Robotics and AI*, **2017**, 4,	2.8	2
35	Estimation of inner-domain temperatures for a freezing process **2014**,		2
34	Linear and Nonlinear State Estimation in the Czochralski Process*. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 523-528		2
33	Implementation and Comparison of Attitude Estimation Methods for Agricultural Robotics. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 52-57		2
32	Stability analysis of snake robot locomotion based on Poincar□maps **2009**,		2
31	On the Boundedness Property of the Inertia Matrix and Skew-Symmetric Property of the Coriolis Matrix for Vehicle-Manipulator Systems. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2012**, 134,	1.6	2
30	On the equivalence of orientation error and positive definiteness of matrices **2008**,		2
29	Passivity based controller-observer schemes for relative translation of a formation of spacecraft. *Proceedings of the American Control Conference*, **2007**,	1.2	2
28	Actiwe surge control using driwe torque: dynamic control laws **2006**,		2
27	Representing Attitudes as Sets of Frames. *Proceedings of the American Control Conference*, **2007**,	1.2	2
26	Adaptive Boarding Control System in Surface Effect Ships **2019**,		2
25	A Comparative Study of Different Control Structures for Flight Control With New Results. *IEEE Transactions on Control Systems Technology*, **2020**, 28, 291-305	4.8	2
24	Stability of the Tracking Problem with Task-Priority Inverse Kinematics. *IFAC-PapersOnLine*, **2018**, 51, 121-125	0.7	2
23	Two general state feedback control laws for compressor surge stabilization **2016**,		1

22	Path Following, Obstacle Detection and Obstacle Avoidance for Thrusted Underwater Snake Robots. *Frontiers in Robotics and AI*, **2019**, 6, 57	2.8	1
21	Stability properties of a heat equation with state-dependent parameters and asymmetric boundary conditions. *IFAC-PapersOnLine*, **2015**, 48, 587-592	0.7	1
20	Boarding Control System - for Improved Accessibility to Offshore Wind Turbines. *IFAC-PapersOnLine*, **2015**, 48, 229-234	0.7	1
19	Mixed-integer minimization of the cost function of the Unit Commitment problem for isolated power systems **2013**,		1
18	A control framework for snake robot locomotion based on shape control points interconnected by B□ier curves **2012**,		1
17	Tracking Control for a Piezoelectric Nanopositioner Using Estimated States and Feedforward Compensation of Hysteresis. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2010**, 43, 96-104		1
16	Two new design concepts for snake robot locomotion in unstructured environments. *Paladyn*, **2010** , 1,	2.3	1
15	Considering Passive Joints in Cooperative Manipulation as Functional Redundancy. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2008**, 41, 4349-4354		1
14	Quaternion-Based Generalized Super-Twisting Algorithm for Spacecraft Attitude Control. *IFAC-PapersOnLine*, **2020**, 53, 14811-14818	0.7	1
13	Spacecraft Attitude and Angular Rate Tracking using Reaction Wheels and Magnetorquers. *IFAC-PapersOnLine*, **2020**, 53, 14819-14826	0.7	1
12	Robotised Wire Arc Additive Manufacturing Using Set-based Control: Experimental Results. *IFAC-PapersOnLine*, **2020**, 53, 10044-10051	0.7	1
11	Energy optimal attitude control for a solar-powered spacecraft. *European Journal of Control*, **2021**, 62, 192-192	2.5	1
10	Robustness of ISS systems to inputs with limited moving average: Application to spacecraft formations. *International Journal of Robust and Nonlinear Control*, **2016**, 26, 816-833	3.6	1
9	Wire-arc additive manufacturing of structures with overhang: Experimental results depositing material onto fixed substrate. *CIRP Journal of Manufacturing Science and Technology*, **2022**, 38, 186-203	3.4	1
8	A Geometric Approach to Actuator Failure in Robotic Manipulators. *Proceedings in Applied Mathematics and Mechanics*, **2014**, 14, 79-80	0.2	0
7	Snake Robots From Biology to Nonlinear Control. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 110-115		0
6	Additive Manufacturing Path Generation for Robot Manipulators Based on CAD Models. *IFAC-PapersOnLine*, **2020**, 53, 10037-10043	0.7	0
5	Analysis of PI-Control for Atomic Force Microscopy in Contact Mode. *IEEE Transactions on Control Systems Technology*, **2021**, 1-15	4.8	0

4	Model-Based LOS Path-Following Control of Planar Underwater Snake Robots. *Lecture Notes in Control and Information Sciences*, **2017**, 343-363	0.5	0
3	A novel hybrid analysis and modeling approach applied to aluminum electrolysis process. *Journal of Process Control*, **2021**, 105, 62-77	3.9	0
2	Fault Tolerance of Parallel Manipulators with Passive Joints. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2009**, 42, 1240-1245		
1	Combined state and parameter estimation for not fully observable dynamic systems. *IFAC Journal of Systems and Control*, **2020**, 13, 100103	0.9	