Andrea Caiti

List of Publications by Year in descending order

156 papers	2,450 citations	279487 23 h-index	264894 42 g-index
156 all docs	156 docs citations	156 times ranked	1759 citing authors

#	ARTICLE	IF	CITATIONS
1	Evolutionary Path Planning for Autonomous Underwater Vehicles in a Variable Ocean. IEEE Journal of Oceanic Engineering, 2004, 29, 418-429.	2.1	308
2	A new AUV navigation system exploiting unscented Kalman filter. Ocean Engineering, 2016, 113, 121-132.	1.9	177
3	FÃ²laga: A low-cost autonomous underwater vehicle combining glider and AUV capabilities. Ocean Engineering, 2009, 36, 24-38.	1.9	155
4	Localization of Autonomous Underwater Vehicles by Floating Acoustic Buoys: A Set-Membership Approach. IEEE Journal of Oceanic Engineering, 2005, 30, 140-152.	2.1	104
5	Experimental demonstration of high speed underwater visible light communications. , 2013, , .		75
6	An unscented Kalman filter based navigation algorithm for autonomous underwater vehicles. Mechatronics, 2016, 39, 185-195.	2.0	70
7	The Hybrid Glider/AUV Folaga. IEEE Robotics and Automation Magazine, 2010, 17, 31-44.	2.2	65
8	Autonomous underwater vehicle teams for adaptive ocean sampling: a data-driven approach. Ocean Dynamics, 2011, 61, 1981-1994.	0.9	49
9	Secure Cooperation of Autonomous Mobile Sensors Using an Underwater Acoustic Network. Sensors, 2012, 12, 1967-1989.	2.1	47
10	Linking Acoustic Communications and Network Performance: Integration and Experimentation of an Underwater Acoustic Network. IEEE Journal of Oceanic Engineering, 2013, 38, 758-771.	2.1	46
11	Estimation of shear wave velocity in shallow marine sediments. IEEE Journal of Oceanic Engineering, 1994, 19, 58-72.	2.1	45
12	UKF-Based Navigation System for AUVs: Online Experimental Validation. IEEE Journal of Oceanic Engineering, 2019, 44, 633-641.	2.1	37
13	Geoacoustic seafloor exploration with a towed array in a shallow water area of the Strait of Sicily. IEEE Journal of Oceanic Engineering, 1996, 21, 355-366.	2.1	35
14	A comparison between EKF-based and UKF-based navigation algorithms for AUVs localization. , 2015, , .		34
15	A Soft Modular End Effector for Underwater Manipulation: A Gentle, Adaptable Grasp for the Ocean Depths. IEEE Robotics and Automation Magazine, 2018, 25, 45-56.	2.2	34
16	A multiquadrics-based algorithm for the acceleration of simulated annealing optimization procedures. IEEE Transactions on Magnetics, 1996, 32, 1198-1201.	1.2	33
17	Cooperative navigation of AUVs via acoustic communication networking: field experience with the Typhoon vehicles. Autonomous Robots, 2016, 40, 1229-1244.	3.2	31
18	Towards the realization of an artificial tactile system: fine-form discrimination by a tensorial tactile sensor array and neural inversion algorithms. IEEE Transactions on Systems, Man, and Cybernetics, 1995, 25, 933-946.	0.9	30

#	ARTICLE	IF	CITATIONS
19	Mobile Underwater Sensor Networks for Protection and Security: Field Experience at the UAN11 Experiment. Journal of Field Robotics, 2013, 30, 237-253.	3.2	29
20	Underwater Intervention Robotics: An Outline of the Italian National Project MARIS. Marine Technology Society Journal, 2016, 50, 98-107.	0.3	28
21	Skin-like tactile sensor arrays for contact stress field extraction. Materials Science and Engineering C, 1993, 1, 23-36.	3.8	26
22	From Remote Experiments to Web-Based Learning Objects: An Advanced Telelaboratory for Robotics and Control Systems. IEEE Transactions on Industrial Electronics, 2009, 56, 4817-4825.	5.2	26
23	Experimental results with a mixed USBL/LBL system for AUV navigation. , 2014, , .		26
24	Typhoon at CommsNet13: Experimental experience on AUV navigation and localization. Annual Reviews in Control, 2015, 40, 157-171.	4.4	26
25	Sea-Trial of Optical Ethernet Modems for Underwater Wireless Communications. Journal of Lightwave Technology, 2018, 36, 5371-5380.	2.7	26
26	Widely Scalable Mobile Underwater Sonar Technology: An Overview of the H2020 WiMUST Project. Marine Technology Society Journal, 2016, 50, 42-53.	0.3	25
27	A distributed passivity approach to AUV teams control in cooperating potential games. Ocean Engineering, 2018, 157, 152-163.	1.9	24
28	Parametric sonars for seafloor characterization. Measurement Science and Technology, 1999, 10, 1105-1115.	1.4	23
29	Control-Sharing and Merging Control Lyapunov Functions. IEEE Transactions on Automatic Control, 2014, 59, 107-119.	3.6	23
30	Marine Robots for Underwater Surveillance. Current Robotics Reports, 2020, 1, 159-167.	5.1	23
31	Beamforming on seismic interface waves with an array of geophones on the shallow sea floor. IEEE Journal of Oceanic Engineering, 1995, 20, 300-310.	2.1	22
32	Acoustic estimation of seafloor parameters: A radial basis functions approach. Journal of the Acoustical Society of America, 1996, 100, 1473-1481.	0.5	22
33	Underwater communication and distributed localization of AUV teams. , 2013, , .		22
34	MARIS: A national project on marine robotics for interventions. , 2014, , .		22
35	Adaptive on-line planning of environmental sampling missions with a team of cooperating autonomous underwater vehicles. International Journal of Control, 2007, 80, 1151-1168.	1.2	20
36	Combining networks of drifting profiling floats and gliders for adaptive sampling of the Ocean. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	20

#	Article	IF	Citations
37	The CO<sup>3</sup>AUVs (Cooperative Cognitive Control for Autonomous Underwater) Tj ETQq1 1 0.784314 rgBT /Over		20
38	Mapping ocean sediments by RBF networks. IEEE Journal of Oceanic Engineering, 1994, 19, 577-582.	2.1	19
39	ESTIMATING GEOACOUSTIC BOTTOM PROPERTIES FROM TOWED ARRAY DATA. Journal of Computational Acoustics, 1996, 04, 273-290.	1.0	18
40	A Geographical Information System (GIS)-Based Simulation Tool to Assess Civilian Harbor Protection Levels. IEEE Journal of Oceanic Engineering, 2012, 37, 85-102.	2.1	16
41	Interoperability Among Unmanned Maritime Vehicles: Review and First In-field Experimentation. Frontiers in Robotics and AI, 2020, 7, 91.	2.0	16
42	On field experience on underwater acoustic localization through USBL modems. , 2017, , .		15
43	A new class of Lyapunov functions for the constrained stabilization of linear systems. Automatica, 2012, 48, 2951-2955.	3.0	14
44	Development and Online Validation of an UKF-based Navigation Algorithm for AUVs. IFAC-PapersOnLine, 2016, 49, 69-74.	0.5	14
45	Augmented Virtuality for Coastal Management: A Holistic Use of In Situ and Remote Sensing for Large Scale Definition of Coastal Dynamics. ISPRS International Journal of Geo-Information, 2018, 7, 92.	1.4	14
46	Physical Characterization of Acoustic Communication Channel Properties in Underwater Mobile Sensor Networks. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 111-126.	0.2	14
47	Stabilizability of linear differential inclusions via R-functions. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 1092-1097.	0.4	13
48	OptoCOMM: Introducing a new optical underwater wireless communication modem. , 2016, , .		13
49	RT<sup>2</sup>: A Real-Time Ray-Tracing method for acoustic distance evaluations among cooperating AUVs. , 2010, , .		12
50	Generalised Entropy of Curves for the Analysis and Classification of Dynamical Systems. Entropy, 2009, 11, 249-270.	1.1	11
51	Cooperating Auv teams: Adaptive area coverage with space-varying communication constraints. , 2009, , .		11
52	Path Planning for Underwater Information Gathering Based on Genetic Algorithms and Data Stochastic Models. Journal of Marine Science and Engineering, 2021, 9, 1183.	1.2	11
53	Stability analysis of dynamical systems via R-functions. , 2009, , .		10
54	An Evaluation of Deep Water Navigation Systems for Autonomous Underwater Vehicles * *This work has been supported by the NATO Allied Command Transformation (ACT), under the Collaborative Anti-Submarine Warfare Programme (CASW), by the Office of Naval Research Global under grant no. N62909-16-1-2095, and by the Collaborative Localisation and Navigation of Autonomous Underwater Vehicles (COOLAUV) Agreement between NATO STO CMRE and Università di Pisa (ISME node).. IFAC-PapersOnLine, 2017, 50, 13680-13685.	0.5	10

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55	WAVE: A wave energy recovery module for long endurance gliders and AUVs. , 2016, , .		10
56	Regularization techniques for the analysis of singular dynamic systems. , 1990, , .		9
57	Online robotic experiments for tele-education at the university of pisa. Journal of Field Robotics, 2005, 22, 217-230.	0.7	9
58	R-composition of Lyapunov functions. , 2009, , .		9
59	Control-oriented modelling of a hybrid AUV. , 2010, , .		9
60	Designing behaviors to improve observability for relative localization of AUVs. , 2010, , .		9
61	The project V-fides: A new generation AUV for deep underwater exploration, operation and monitoring. , 2014, , .		9
62	Typhoon at CommsNet 2013: experimental experience on AUV navigation and localization. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 3370-3375.	0.4	9
63	A Distributed, Passivity-Based Control of Autonomous Mobile Sensors in an Underwater Acoustic Network. IFAC-PapersOnLine, 2016, 49, 367-372.	0.5	9
64	FOLAGA: A VERY LOW COST AUTONOMOUS UNDERWATER VEHICLE FOR COASTAL OCEANOGRAPHY. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 31-36.	0.4	8
65	AUVs as mobile nodes in acoustic communication networks: Field experience at the UAN10 experiment. , 2011, , .		8
66	Underwater acoustic network performance: Results from the UAN11 sea trial. , 2012, , .		8
67	Multivariable constrained process control via Lyapunov R-functions. Journal of Process Control, 2012, 22, 1762-1772.	1.7	8
68	Nash equilibrium seeking in potential games with double-integrator agents. , 2019, , .		8
69	WAVE module for hybrid oceanographic Autonomous Underwater Vehicle–prototype experimental validation and characterisation. , 2018, , .		8
70	Thesaurus Project: Design of New Autonomous Underwater Vehicles for Documentation and Protection of Underwater Archaeological Sites. Lecture Notes in Computer Science, 2012, , 486-493.	1.0	8
71	Underwater vehicle technology in the European Research Project VENUS. Underwater Technology, 2009, 28, 175-185.	0.3	7
72	Lagrangian modeling of the Underwater Wave Glider. , 2011, , .		7

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73	Underwater Acoustic Networks: The FP7 UAN Project. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 220-225.	0.4	7
74	Fusing acoustic ranges and inertial measurements in AUV navigation: The Typhoon AUV at CommsNet13 sea trial. , 2014, , .		7
75	A game theoretic approach for antagonistic-task coordination of underwater autonomous robots in asymmetric threats scenarios. , 2016, , .		7
76	Towards an autonomous underwater vehicles test range: At-sea experimentation of bearing-only tracking algorithms. Annual Reviews in Control, 2018, 46, 304-314.	4.4	7
77	Inversion Of Tactile Data Through A Skin-like Sensor Sensitive To Stress Components. , 0, , .		6
78	Innovative technologies in underwater archaeology: field experience, open problems, and research lines. Chemistry and Ecology, 2006, 22, S383-S396.	0.6	6
79	Logical composition of Lyapunov functions. International Journal of Control, 2011, 84, 563-573.	1.2	6
80	Stabilization of constrained linear systems via smoothed truncated ellipsoids. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 6739-6744.	0.4	6
81	AUV team cooperation: emerging behaviours and networking modalities. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 342-347.	0.4	6
82	Cooperative Cognitive Control for Autonomous Underwater Vehicles (CO3AUVs): overview and progresses in the 3rd project year. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 361-366.	0.4	6
83	Toward underwater acoustic-based simultaneous localization and mapping. Experimental results with the Typhoon AUV at CommsNet13 sea trial. , 2014, , .		6
84	Comparison between Optimal Control Allocation with Mixed Quadratic & Linear Programming Techniques. IFAC-PapersOnLine, 2016, 49, 147-152.	0.5	6
85	Tactile Sensing for Stable Grasp. , 1991, , 257-264.		6
86	Passive Bearing Estimation Using a 2-D Acoustic Vector Sensor Mounted on a Hybrid Autonomous Underwater Vehicle. IEEE Journal of Oceanic Engineering, 2022, 47, 799-814.	2.1	6
87	Efficient numerical approximation of maximum entropy estimates. International Journal of Control, 2006, 79, 1145-1155.	1.2	5
88	Stabilizability of constrained uncertain linear systems via smooth control Lyapunov R-functions. , 2011, , .		5
89	RT2: real-time ray-tracing for underwater range evaluation. Intelligent Service Robotics, 2011, 4, 259-270.	1.6	5
90	Lagrangian Modelling of an Underwater Wave Glider. Ship Technology Research, 2012, 59, 6-12.	1.1	5

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91	Potential games and AUVs cooperation: First results from the THESAURUS project. , 2013, , .		5
92	Thesaurus: AUV teams for archaeological search. Field results on acoustic communication and localization with the Typhoon. , 2014, , .		5
93	Sea-trial of an Ethernet-based Underwater VLC Communication System. , 2018, , .		5
94	A generalised entropy of curves: An approach to the analysis of dynamical systems. , 2008, , .		4
95	Distributed Adaptive Environmental Sampling with AUVs: Cooperation and Team Coordination through Minimum-Spanning-Tree Graph Searching Algorithms. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 50-55.	0.4	4
96	HISS: Harbour intrusion simulator system. , 2009, , .		4
97	FÃ²laga: a low cost AUV/glider for coastal environmental sampling. Underwater Technology, 2009, 28, 151-157.	0.3	4
98	Adaptive Cooperative Algorithms for AUV Networks. , 2010, , .		4
99	Cooperative distributed behaviours of an AUV network for asset protection with communication constraints. , 2011, , .		4
100	Cooperative distributed algorithm for AUV teams: A minimum entropy approach. , 2013, , .		4
101	Enhancing autonomy: Fault detection, identification and optimal reaction for over &#x2014; Actuated AUVs. , 2015, , .		4
102	OptoCOMM: Development and experimentation of a new optical wireless underwater modem. , 2016, , .		4
103	Overview and first year progress of the Widely scalable Mobile Underwater Sonar Technology H2020 project**This work has received funding from the European Unionâ€™s Horizon 2020 research and innovation programme under grant agreement No. 645141 (WiMUST project, http://www.wimust.eu).. IFAC-PapersOnLine, 2016, 49, 430-433.	0.5	4
104	Cooperative ASV/AUV system exploiting active acoustic localization. , 2021, , .		4
105	Spectral methods for the solution of linear descriptor systems using Fourier functions. Circuits, Systems, and Signal Processing, 1994, 13, 225-239.	1.2	3
106	Stabilization of spectral methods for the analysis of singular systems using piecewise constant basis functions. Circuits, Systems, and Signal Processing, 1995, 14, 299-316.	1.2	3
107	Desing and realization of a very low cost prototypal autonomous vehicle for coastal oceanographic missions. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 471-476.	0.4	3
108	UAN — Underwater Acoustic Network. , 2011, , .		3

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109	Parametric control allocation for a class of marine vessels. Ocean Engineering, 2013, 58, 275-283.	1.9	3
110	A universal class of non-homogeneous control Lyapunov functions for linear differential inclusions. , 2013, , .		3
111	A NLPCA hybrid approach for AUV thrusters fault detection and isolation. , 2016, , .		3
112	Bearing-only AUV tracking performance: Unscented Kalman Filter estimation against uncertainty in underwater nodes position. IFAC-PapersOnLine, 2017, 50, 13674-13679.	0.5	3
113	Distributed Task-priority Based Control in Area Coverage & Adaptive Sampling. , 2017, , .		3
114	Experimental experience on iterative learning control implemented on a prototypal manipulator. , 1991, , .		2
115	Comments on the properties of the operational matrices of integration and differentiation for Fourier trigonometric functions. IEEE Transactions on Automatic Control, 1993, 38, 667-671.	3.6	2
116	A geographical information system for risk assessment of toxic seabed dumpsites. , 2005, , .		2
117	A Monte Carlo simulator for evaluation of AUV configuration in object search and classification missions. , 2005, , .		2
118	GIS tools application for risk assessment of toxic waste buried in seafloor sediments. Chemistry and Ecology, 2006, 22, S145-S161.	0.6	2
119	Cooperative On-Line Planning For Adaptive Map Building In Environmental Applications. , 2006, , .		2
120	Real-Time Ray-Tracing for Underwater Distance Evaluation with Application to Distributed Localization of AUV Teams. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 211-216.	0.4	2
121	DCL: a real time portable distributed control telelaboratory. , 2010, , .		2
122	Constrained stabilization of a continuous stirred tank reactor via smooth control Lyapunov R-functions. , 2011, , .		2
123	Switching control of an underwater glider with independently controllable wings. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 194-199.	0.4	2
124	Cooperative Behaviours of AUV Teams and Networked Underwater Communication. , 2014, , .		2
125	OptoCOMM and SUNSET to enable large data offloading in Underwater Wireless Sensor Networks. , 2016, , .		2
126	A Generalised Entropy ofÂCurves Approach forÂtheÂAnalysis ofÂDynamical Systems. , 2011, , 381-388.		2

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127	Comparative analysis of EKF and Particle Filter performance for an acoustic tracking system for AUVs exploiting bearing-only measurements. , 2020, , .		2
128	SEAFLOOR PROPERTIES DETERMINATION FROM ACOUSTIC BACKSCATTERING AT NORMAL INCIDENCE WITH A PARAMETRIC SOURCE. Journal of Computational Acoustics, 2000, 08, 365-388.	1.0	1
129	RISK ASSESSMENT OF SEAFLOOR WASTE: ACOUSTICAL IMAGING OF BURIED WASTE. Journal of Computational Acoustics, 2005, 13, 385-401.	1.0	1
130	On the analysis of buried objects by processing 3-D acoustic images. , 2005, , .		1
131	Biotoxicity testing and chemical analysis at a munitions dumping area in the Stockholm archipelago (Baltic Sea) revealed low toxicity and low concentrations of lipophilic pollutants. , 2005, , .		1
132	Particle Filtering within a Set-Membership Approach to State Estimation. , 2006, , .		1
133	A Sliding Mode Based Guidance System for Vehicle-Following Operations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 342-347.	0.4	1
134	Using geometric control to design trajectories for an AUV to map and sample the summit of the Loihi submarine volcano. , 2010, , .		1
135	A statistical tool for analysing nonlinear properties of dynamical systems. , 2011, , .		1
136	A Bregman nonlinear proximal point algorithm for adaptive control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 4095-4100.	0.4	1
137	Parametric Control Allocation for Vessels Equipped with Two Non-Fully Rotable Thrusters. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 368-373.	0.4	1
138	Switching control of an underwater glider with independently controllable wings. Proceedings of the Institution of Mechanical Engineers Part M: Journal of Engineering for the Maritime Environment, 2014, 228, 136-145.	0.3	1
139	Information-driven cooperative distributed motion planning for long range search over marine areas. IFAC-PapersOnLine, 2015, 48, 23-28.	0.5	1
140	A task-priority based control approach to distributed data-driven ocean sampling. , 2016, , .		1
141	Marine Robots in Environmental Surveys: Current Developments at ISME—Localisation and Navigation. Ocean Engineering & Oceanography, 2018, , 69-86.	0.1	1
142	Underwater Communication. , 2020, , 1-10.		1
143	Underwater Sensor Networks with Mobile Agents: Experience from the Field. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2013, , 79-93.	0.2	1
144	Underwater acoustic source localization using a multi-robot system: the DAMPS project. , 2021, , .		1

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145	Manipulators trajectory tracking with reduced order velocity observers. , 0, , .		0
146	<title>Teleoperations with shared explicit contact force control</title>. , 1997, , .		0
147	PP algorithm for Particle Filtering within Ellipsoidal Regions. , 2006, , .		0
148	R-composition of quadratic Lyapunov functions for stabilizability of linear differential inclusions. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 204-210.	0.4	0
149	On the dependence of cooperative algorithms on underwater communication performance. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 84-88.	0.4	0
150	Further results on merging control Lyapunov functions for linear differential inclusions. , 2013, , .		0
151	Underwater communication requirements in coordinated autonomous manipulation: The MARIS project. , 2016, , .		0
152	Motion Planning for Marine Control Systems. , 2021, , 1333-1337.		0
153	Inversion of Normal Incidence Backscattered Data: Getting Seabed Geoacoustic and Morphological Parameters. , 2000, , 177-194.		0
154	MOOS middleware and node adaptivity in underwater sensor networks: results from the UAN11 sea trial. Proceedings of Meetings on Acoustics, 2012, , .	0.3	0
155	Motion Planning for Marine Control Systems. , 2013, , 1-6.		0
156	Assessing the Potential of Autonomous Multi-agent Surveillance in Asset Protection from Underwater Threats. Lecture Notes in Computer Science, 2016, , 204-213.	1.0	0