

Louis L Whitcomb

List of Publications by Year in descending order

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143
papers

5,392
citations

101543

36
h-index

106344

65
g-index

145
all docs

145
docs citations

145
times ranked

3666
citing authors

#	ARTICLE	IF	CITATIONS
1	Design of a Novel MRI Compatible Manipulator for Image Guided Prostate Interventions. IEEE Transactions on Biomedical Engineering, 2005, 52, 306-313.	4.2	263
2	Comparative experiments with a new adaptive controller for robot arms. IEEE Transactions on Automation Science and Engineering, 1993, 9, 59-70.	2.3	195
3	Model-Based Dynamic Positioning of Underwater Robotic Vehicles: Theory and Experiment. IEEE Journal of Oceanic Engineering, 2004, 29, 169-186.	3.8	193
4	Advances in single-beacon one-way-travel-time acoustic navigation for underwater vehicles. International Journal of Robotics Research, 2012, 31, 935-950.	8.5	160
5	Adaptive force control of position/velocity controlled robots: theory and experiment. IEEE Transactions on Automation Science and Engineering, 2002, 18, 121-137.	2.3	150
6	A miniature microsurgical instrument tip force sensor for enhanced force feedback during robot-assisted manipulation. IEEE Transactions on Automation Science and Engineering, 2003, 19, 917-922.	2.3	142
7	Diverse styles of submarine venting on the ultraslow spreading Mid-Cayman Rise. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 14020-14025.	7.1	140
8	Iron Age Shipwrecks in Deep Water off Ashkelon, Israel. American Journal of Archaeology, 2002, 106, 151-168.	0.1	121
9	Surgical and Interventional Robotics - Core Concepts, Technology, and Design [Tutorial]. IEEE Robotics and Automation Magazine, 2008, 15, 122-130.	2.0	115
10	Development, comparison, and preliminary experimental validation of nonlinear dynamic thruster models. IEEE Journal of Oceanic Engineering, 1999, 24, 481-494.	3.8	114
11	Decentralized Extended Information Filter for Single-Beacon Cooperative Acoustic Navigation: Theory and Experiments. IEEE Transactions on Robotics, 2013, 29, 957-974.	10.3	112
12	A modular surgical robotic system for image guided percutaneous procedures. Lecture Notes in Computer Science, 1998, , 404-410.	1.3	108
13	Experimental Results in Synchronous-Clock One-Way-Travel-Time Acoustic Navigation for Autonomous Underwater Vehicles. , 2007, , .		103
14	Preliminary field experience with the DVLNAV integrated navigation system for oceanographic submersibles. Control Engineering Practice, 2004, 12, 1541-1549.	5.5	102
15	Acoustic measurement of the <i>Deepwater Horizon</i> Macondo well flow rate. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 20235-20239.	7.1	101
16	Adaptive identification of dynamically positioned underwater robotic vehicles. IEEE Transactions on Control Systems Technology, 2003, 11, 505-515.	5.2	100
17	An accurate four-quadrant nonlinear dynamical model for marine thrusters: theory and experimental validation. IEEE Journal of Oceanic Engineering, 2000, 25, 146-159.	3.8	98
18	Development and Evaluation of an Actuated MRI-Compatible Robotic System for MRI-Guided Prostate Intervention. IEEE/ASME Transactions on Mechatronics, 2013, 18, 273-284.	5.8	96

#	ARTICLE	IF	CITATIONS
19	Transrectal Prostate Biopsy and Fiducial Marker Placement in a Standard 1.5T Magnetic Resonance Imaging Scanner. <i>Journal of Urology</i> , 2006, 175, 113-120.	0.4	89
20	Synchronous-clock, one-way-travel-time acoustic navigation for underwater vehicles. <i>Journal of Field Robotics</i> , 2011, 28, 121-136.	6.0	87
21	An MRI-Compatible Robotic System With Hybrid Tracking for MRI-Guided Prostate Intervention. <i>IEEE Transactions on Biomedical Engineering</i> , 2011, 58, 3049-3060.	4.2	85
22	System for MR Image-guided Prostate Interventions: Canine Study. <i>Radiology</i> , 2003, 228, 886-894.	7.3	78
23	In Situ Alignment Calibration of Attitude and Doppler Sensors for Precision Underwater Vehicle Navigation: Theory and Experiment. <i>IEEE Journal of Oceanic Engineering</i> , 2007, 32, 286-299.	3.8	75
24	Robotically assisted prostate brachytherapy with transrectal ultrasound guidance-Phantom experiments. <i>Brachytherapy</i> , 2006, 5, 14-26.	0.5	74
25	Adaptive Identification on the Group of Rigid-Body Rotations and its Application to Underwater Vehicle Navigation. , 2007, 23, 124-136.		74
26	Tissue property estimation and graphical display for teleoperated robot-assisted surgery. , 2009, , .		72
27	The discovery of ancient history in the deep sea using advanced deep submergence technology. <i>Deep-Sea Research Part I: Oceanographic Research Papers</i> , 2000, 47, 1591-1620.	1.4	70
28	Influence of ice thickness and surface properties on light transmission through Arctic sea ice. <i>Journal of Geophysical Research: Oceans</i> , 2015, 120, 5932-5944.	2.6	70
29	Preliminary experiments in model-based thruster control for underwater vehicle positioning. <i>IEEE Journal of Oceanic Engineering</i> , 1999, 24, 495-506.	3.8	65
30	Adaptive model-based hybrid control of geometrically constrained robot arms. <i>IEEE Transactions on Automation Science and Engineering</i> , 1997, 13, 105-116.	2.3	59
31	Microbathymetric Mapping from Underwater Vehicles in the Deep Ocean. <i>Computer Vision and Image Understanding</i> , 2000, 79, 143-161.	4.7	58
32	Preliminary deep water results in single-beacon one-way-travel-time acoustic navigation for underwater vehicles. , 2009, , .		57
33	MRI Compatibility of Robot Actuation Techniques - A Comparative Study. <i>Lecture Notes in Computer Science</i> , 2008, 11, 509-517.	1.3	57
34	Recent Advances in Synchronous-Clock One-Way-Travel-Time Acoustic Navigation. , 2006, , .		54
35	Nonlinear Model-Based Tracking Control of Underwater Vehicles With Three Degree-of-Freedom Fully Coupled Dynamical Plant Models: Theory and Experimental Evaluation. <i>IEEE Transactions on Control Systems Technology</i> , 2018, 26, 404-414.	5.2	48
36	Robot-Assisted Stapedotomy: Micropick Fenestration of the Stapes Footplate. <i>Otolaryngology - Head and Neck Surgery</i> , 2002, 127, 417-426.	1.9	45

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37	Surgical and interventional robotics: part III [Tutorial]. IEEE Robotics and Automation Magazine, 2008, 15, 84-93.	2.0	44
38	The Nereus hybrid underwater robotic vehicle for global ocean science operations to 11,000m depth. , 2008, , .		43
39	Experimental Identification of Six-Degree-of-Freedom Coupled Dynamic Plant Models for Underwater Robot Vehicles. IEEE Journal of Oceanic Engineering, 2014, 39, 662-671.	3.8	43
40	Submeter bathymetric mapping of volcanic and hydrothermal features on the East Pacific Rise crest at 9°50'N. Geochemistry, Geophysics, Geosystems, 2007, 8, n/a-n/a.	2.5	40
41	Transrectal Prostate Biopsy Inside Closed MRI Scanner with Remote Actuation, under Real-Time Image Guidance. Lecture Notes in Computer Science, 2002, , 91-98.	1.3	38
42	Surgical and interventional robotics: Part II. IEEE Robotics and Automation Magazine, 2008, 15, 94-102.	2.0	37
43	An efficient needle injection technique and radiological guidance method for percutaneous procedures. Lecture Notes in Computer Science, 1997, , 295-298.	1.3	36
44	Temperature-controlled power modulation compensates for heterogeneous nanoparticle distributions: a computational optimization analysis for magnetic hyperthermia. International Journal of Hyperthermia, 2019, 36, 115-129.	2.5	36
45	Exploring the Deepest Depths: Preliminary Design of a Novel Light-Tethered Hybrid ROV for Global Science in Extreme Environments. Marine Technology Society Journal, 2004, 38, 92-101.	0.4	35
46	Journey to the Challenger Deep: 50 Years Later With the <i>Nereus</i> Hybrid Remotely Operated Vehicle. Marine Technology Society Journal, 2009, 43, 65-76.	0.4	34
47	Navigation and control of the Nereus hybrid underwater vehicle for global ocean science to 10,903 m depth: Preliminary results. , 2010, , .		31
48	Scientific Challenges and Present Capabilities in Underwater Robotic Vehicle Design and Navigation for Oceanographic Exploration Under-Ice. Remote Sensing, 2020, 12, 2588.	4.0	30
49	Teleprogramming for subsea teleoperation using acoustic communication. IEEE Journal of Oceanic Engineering, 1998, 23, 60-71.	3.8	29
50	Development and preliminary evaluation of an actuated MRI-compatible robotic device for MRI-guided prostate intervention. , 2010, , .		28
51	Task Performance in Stapedotomy: Comparison Between Surgeons of Different Experience Levels. Otolaryngology - Head and Neck Surgery, 2003, 128, 71-77.	1.9	25
52	A Miniature Instrument Tip Force Sensor for Robot/Human Cooperative Microsurgical Manipulation with Enhanced Force Feedback. Lecture Notes in Computer Science, 2000, , 897-906.	1.3	24
53	Model-based telerobotic control with virtual fixtures for satellite servicing tasks. , 2013, , .		23
54	Preliminary Field Experience with the DVLNAV Integrated Navigation System for Manned and Unmanned Submersibles. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 79-84.	0.4	22

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55	Task-dependent impedance and implications for upper-limb prosthesis control. International Journal of Robotics Research, 2014, 33, 827-846.	8.5	21
56	A preliminary analysis and model of prostate injection distributions. Prostate, 2006, 66, 344-357.	2.3	20
57	Advances in <i>In Situ</i> Alignment Calibration of Doppler and High/Low-End Attitude Sensors for Underwater Vehicle Navigation: Theory and Experimental Evaluation. Journal of Field Robotics, 2015, 32, 655-674.	6.0	20
58	Comparative experimental evaluation of a new adaptive identifier for underwater vehicles. , 2013, , .		19
59	Toward ice-relative navigation of underwater robotic vehicles under moving sea ice: Experimental evaluation in the Arctic sea. , 2015, , .		18
60	Performance of Robotic Augmentation in Microsurgery-Scale Motions. Lecture Notes in Computer Science, 1999, , 1108-1115.	1.3	18
61	MRI-Guided Robotic Prostate Biopsy: A Clinical Accuracy Validation. Lecture Notes in Computer Science, 2010, 13, 383-391.	1.3	18
62	Biopsy Needle Artifact Localization in MRI-Guided Robotic Transrectal Prostate Intervention. IEEE Transactions on Biomedical Engineering, 2012, 59, 1902-1911.	4.2	17
63	Accuracy analysis in MRI-guided robotic prostate biopsy. International Journal of Computer Assisted Radiology and Surgery, 2013, 8, 937-944.	2.8	17
64	A pilot study in vision-based augmented telemanipulation for remote assembly over high-latency networks. , 2013, , .		17
65	Teleoperation and robotics under ice: Implications for planetary exploration. , 2018, , .		17
66	Motion-Based Robotic Instrument Targeting under C-Arm Fluoroscopy. Lecture Notes in Computer Science, 2000, , 988-998.	1.3	15
67	Proof of concept demonstration of the Hybrid Remotely Operated Vehicle (HROV) light fiber tether system. , 2008, , .		15
68	Acoustic communication performance of the WHOI Micro-Modem in sea trials of the Nereus vehicle to 11,000 m depth. , 2009, , .		15
69	Experimental evaluation of force control for virtual-fixture-assisted teleoperation for on-orbit manipulation of satellite thermal blanket insulation. , 2015, , .		15
70	An Interventional Magnetic Resonance Imaging Technique for the Molecular Characterization of Intraprostatic Dynamic Contrast Enhancement. Molecular Imaging, 2005, 4, 153535002005041.	1.4	14
71	Preliminary results in experimental identification of 3-DOF coupled dynamical plant for underwater vehicles. , 2008, , .		14
72	A preliminary survey of underwater robotic vehicle design and navigation for under-ice operations. , 2016, , .		14

#	ARTICLE	IF	CITATIONS
73	Semi-autonomous telerobotic assembly over high-latency networks. , 2016, , .		14
74	Fully actuated model-based control with six-degree-of-freedom coupled dynamical plant models for underwater vehicles: Theory and experimental evaluation. International Journal of Robotics Research, 2016, 35, 1164-1184.	8.5	14
75	Field Tests of the Hybrid Remotely Operated Vehicle (HROV) Light Fiber Optic Tether. , 2006, , .		13
76	Accuracy validation for MRI-guided robotic prostate biopsy. , 2010, 7625, 762517-762518.		13
77	Experimental evaluation of a MEMS inertial measurements unit for Doppler navigation of underwater vehicles. , 2012, , .		13
78	Design and Preliminary Accuracy Studies of an MRI-Guided Transrectal Prostate Intervention System. , 2007, 10, 59-67.		13
79	Model-Based Nonlinear Observers for Underwater Vehicle Navigation: Theory and Preliminary Experiments. Proceedings - IEEE International Conference on Robotics and Automation, 2007, , .	0.0	12
80	Field trials of the Nereus hybrid underwater robotic vehicle in the challenger deep of the Mariana Trench. , 2009, , .		12
81	Advances in decentralized single-beacon acoustic navigation for underwater vehicles: Theory and simulation. , 2010, , .		12
82	Preliminary experimental evaluation of a Doppler-aided attitude estimator for improved Doppler navigation of underwater vehicles. , 2013, , .		12
83	Preliminary study of virtual nonholonomic constraints for time-delayed teleoperation. , 2015, , .		12
84	Scene Modeling and Augmented Reality Interface for Telerobotic Satellite Servicing. IEEE Robotics and Automation Letters, 2018, 3, 4241-4248.	5.1	12
85	New methods for in-situ calibration of attitude and doppler sensors for underwater vehicle navigation: Preliminary results. , 2010, , .		11
86	Task-dependent impedance improves user performance with a virtual prosthetic arm. , 2011, , .		11
87	Adaptive Parameter Identification of an Accurate Nonlinear Dynamical Model for Marine Thrusters. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2003, 125, 491-494.	1.6	11
88	A New Control System for the Next Generation of US and UK Deep Submergence Oceanographic ROVS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 133-138.	0.4	10
89	Design of Nereid-UI: A remotely operated underwater vehicle for oceanographic access under ice. , 2014, , .		10
90	A study of needle image artifact localization in confirmation imaging of MRI-guided robotic prostate biopsy. , 2011, 2011, 4834-4839.		9

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91	Preliminary experiments in comparative experimental identification of six degree-of-freedom coupled dynamic plant models for underwater robot vehicles. , 2013, , .		9
92	Experimental Evaluation of Teleoperation Interfaces for Cutting of Satellite Insulation. , 2019, , .		9
93	Field Sensor Bias Calibration With Angular-Rate Sensors: Theory and Experimental Evaluation With Application to Magnetometer Calibration. IEEE/ASME Transactions on Mechatronics, 2019, 24, 1698-1710.	5.8	9
94	Experimental evaluation of new methods for in-situ calibration of attitude and doppler sensors for underwater vehicle navigation. , 2011, , .		8
95	Experimental evaluation of adaptive model-based control for underwater vehicles in the presence of unmodeled actuator dynamics. , 2014, , .		8
96	Preliminary study of cooperative navigation of underwater vehicles without a DVL utilizing range and range-rate observations. , 2016, , .		8
97	Interactive Planning and Supervised Execution for High-Risk, High-Latency Teleoperation. , 2020, , .		8
98	A Mission Controller for High Level Control of Autonomous and Semi-Autonomous Underwater Vehicles. , 2006, , .		7
99	Preliminary Evaluation of Cooperative Navigation of Underwater Vehicles without a DVL Utilizing a Dynamic Process Model. , 2018, , .		7
100	Stable adaptive identification of fullyâ€coupled secondâ€order 6 degreeâ€ofâ€freedom nonlinear plant models for underwater vehicles: Theory and experimental evaluation. International Journal of Adaptive Control and Signal Processing, 2021, 35, 786-810.	4.1	7
101	An interventional magnetic resonance imaging technique for the molecular characterization of intraprostatic dynamic contrast enhancement. Molecular Imaging, 2005, 4, 63-6.	1.4	7
102	Field performance evaluation of new methods for in-situ calibration of attitude and doppler sensors for underwater vehicle navigation. , 2012, , .		6
103	Preliminary results with a low-cost fiber-optic gyrocompass system. , 2015, , .		6
104	Performance Evaluation of a Cooperative Manipulation Microsurgical Assistant Robot Applied to Stapedotomy. Lecture Notes in Computer Science, 2001, , 1426-1429.	1.3	5
105	Longitudinal Control Design and Performance Evaluation for the Nereus 11,000 m Underwater Vehicle. , 2007, , .		5
106	Experimental evaluation of an inertial navigation system for underwater robotic vehicles. , 2011, , .		5
107	User comprehension of task performance with varying impedance in a virtual prosthetic arm: A pilot study. , 2012, , .		5
108	Lightly tethered unmanned underwater vehicle for under-ice exploration. , 2012, , .		5

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109	Preliminary feasibility study of cooperative navigation of underwater vehicles with range and range-rate observations. , 2015, , .		5
110	A stable adaptive attitude estimator on SO(3) for true-North seeking gyrocompass systems: Theory and preliminary simulation evaluation. , 2017, , .		5
111	Preliminary Evaluation of Null-Space Dynamic Process Model Identification with Application to Cooperative Navigation of Underwater Vehicles. , 2018, , .		5
112	Adaptive Parameter Identification of Underactuated Unmanned Underwater Vehicles: A Preliminary Simulation Study. , 2018, , .		5
113	Adaptive bias and attitude observer on the special orthogonal group for true-north gyrocompass systems: Theory and preliminary results. International Journal of Robotics Research, 2020, 39, 321-338.	8.5	5
114	Cooperative acoustic navigation of underwater vehicles without a DVL utilizing a dynamic process model: Theory and field evaluation. Journal of Field Robotics, 2021, 38, 700-726.	6.0	5
115	Toward a platform-independent acoustic communications and navigation system for underwater vehicles. , 2009, , .		5
116	Preliminary experiments in nonlinear model-based tracking control of underwater vehicles with three degree-of-freedom fully-coupled dynamical plant models. , 2012, , .		4
117	Preliminary experimental evaluation of in-situ calibration methods for MEMS-based attitude sensors and Doppler sonars in underwater vehicle navigation. , 2012, , .		4
118	Adaptive estimation of measurement bias in six degree of freedom inertial measurement units: Theory and preliminary simulation evaluation. , 2017, , .		4
119	Adaptive Sensor Bias Estimation in Nine Degree of Freedom Inertial Measurement Units: Theory and Preliminary Evaluation. , 2018, , .		4
120	Performance Analysis of Ice-Relative Upward-Looking Doppler Navigation of Underwater Vehicles Beneath Moving Sea Ice. Journal of Marine Science and Engineering, 2021, 9, 174.	2.6	4
121	Teleoperation and Visualization Interfaces for Remote Intervention in Space. Frontiers in Robotics and AI, 2021, 8, 747917.	3.2	4
122	Toward under-ice operations with hybrid underwater robotic vehicles. , 2008, , .		3
123	Preliminary experiments in underactuated nonlinear model-based tracking control of underwater vehicles with three degree-of-freedom fully-coupled dynamical plant models: Theory and experimental evaluation. , 2012, , .		3
124	Design requirements and feasibility study for a 3-DOF MRI-compatible robotic device for MRI-guided prostate intervention. , 2012, , .		3
125	A Stable Adaptive Observer for Hard-Iron and Soft-Iron Bias Calibration and Compensation for Two-Axis Magnetometers: Theory and Experimental Evaluation. IEEE Robotics and Automation Letters, 2020, 5, 1295-1302.	5.1	3
126	Toward practical semi-autonomous teleoperation: Do what i intend, not what i do. , 2011, , .		2

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127	Development of and preliminary results with an extended Kalman filter for the estimation of the translational and angular velocity of underwater vehicles. , 2014, , .		2
128	Preliminary Simulation Study of Combined Control and Cooperative Navigation for Underwater Vehicles. , 2018, , .		2
129	A Preliminary Study of Ice-Relative Underwater Vehicle Navigation Beneath Moving Sea Ice. , 2018, , .		2
130	Experimental Identification of Three Degree-of-Freedom Coupled Dynamic Plant Models for Underwater Vehicles. Lecture Notes in Control and Information Sciences, 2017, , 319-341.	1.0	2
131	A Novel Quotient Space Approach to Model-Based Fault Detection and Isolation: Theory and Preliminary Simulation Evaluation. , 2021, , .		2
132	Numerical Simulation of the Deployment of a Hybrid ROV Optical Fiber Tether. , 2007, , 633.		1
133	PRELIMINARY SIMULATION STUDIES OF A NEW FOUR-QUADRANT PROPELLER THRUST CONTROLLER APPLIED TO UNDERWATER VEHICLES. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 217-222.	0.4	1
134	A Portable Device for Quantification of Forearm Muscle Tone. PM and R, 2011, 3, 1075-1076.	1.6	1
135	A new adaptive identifier for second-order rotational plants with applications to underwater vehicles. , 2012, , .		1
136	A preliminary study of an intent-recognition-based traded control architecture for high latency telemanipulation. , 2017, , .		1
137	Experimental evaluation of a trajectory/force tracking controller for a humanoid robot cleaning a vertical surface. , 2011, , .		1
138	Uniform Complete Observability of Mass and Rotational Inertial Parameters in Adaptive Identification of Rigid-Body Plant Dynamics. , 2021, , .		1
139	Haptic Feedback Enhancement Through Adaptive Force Scaling: Theory and Experiment. , 2006, , 293-316.		1
140	Visual Monitoring and Servoing of a Cutting Blade during Telerobotic Satellite Servicing. , 2020, , .		1
141	Online Three-Axis Magnetometer Hard-Iron and Soft-Iron Bias and Angular Velocity Sensor Bias Estimation Using Angular Velocity Sensors for Improved Dynamic Heading Accuracy. , 2022, 2, 1001-1027.		1
142	Preliminary simulation of a deployable GPS navigation system for ice-relative dead reckoning of underwater vehicles under moving sea ice. , 2016, , .		0
143	Session Overview Underwater Robotics. , 2007, , 399-401.		0