

Joris De Schutter

List of Publications by Year in descending order

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145
papers

3,561
citations

279798

23
h-index

189892

50
g-index

148
all docs

148
docs citations

148
times ranked

2803
citing authors

#	ARTICLE	IF	CITATIONS
1	Towards Dynamic Visual Servoing for Interaction Control and Moving Targets. , 2022, , .		6
2	Force from Shape Estimating the Location and Magnitude of the External Force on Flexible Instruments. IEEE Transactions on Robotics, 2021, 37, 1826-1833.	10.3	21
3	Virtual Motor Torque Sensing for Multirotor Propulsion Systems. IEEE Robotics and Automation Letters, 2021, 6, 4149-4155.	5.1	0
4	Shape-Preserving and Reactive Adaptation of Robot End-Effector Trajectories. IEEE Robotics and Automation Letters, 2021, 6, 667-674.	5.1	4
5	Autonomous Runtime Composition of Sensor-Based Skills Using Concurrent Task Planning. IEEE Robotics and Automation Letters, 2021, 6, 6481-6488.	5.1	5
6	Reconfigurable Constraint-Based Reactive Framework for Assistive Robotics With Adaptable Levels of Autonomy. IEEE Robotics and Automation Letters, 2021, 6, 7397-7405.	5.1	2
7	Effect of the soft tissue artifact on marker measurements and on the calculation of the helical axis of the knee during a gait cycle: A study on the CAMS-Knee data set. Human Movement Science, 2021, 80, 102866.	1.4	19
8	Gait Trajectory and Event Prediction from State Estimation for Exoskeletons During Gait. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2020, 28, 211-220.	4.9	25
9	Estimating the Instantaneous Screw Axis and the Screw Axis Invariant Descriptor of Motion by Means of Inertial Sensors: An Experimental Study with a Mechanical Hinge Joint and Comparison to the Optoelectronic System. Sensors, 2020, 20, 49.	3.8	9
10	Forward flight tests of a quadcopter unmanned aerial vehicle with various spherical body diameters. International Journal of Micro Air Vehicles, 2020, 12, 175682932092356.	1.3	11
11	A Framework for Recognition and Prediction of Human Motions in Human-Robot Collaboration Using Probabilistic Motion Models. IEEE Robotics and Automation Letters, 2020, 5, 5151-5158.	5.1	21
12	Generating Reactive Approach Motions Towards Allowable Manifolds using Generalized Trajectories from Demonstrations. , 2020, , .		1
13	Skill-based Programming Framework for Composable Reactive Robot Behaviors. , 2020, , .		3
14	Learning robust manipulation tasks involving contact using trajectory parameterized probabilistic principal component analysis. , 2020, , .		2
15	Subject-Exoskeleton Contact Model Calibration Leads to Accurate Interaction Force Predictions. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1597-1605.	4.9	55
16	Inverse dynamic estimates of muscle recruitment and joint contact forces are more realistic when minimizing muscle activity rather than metabolic energy or contact forces. Gait and Posture, 2019, 74, 223-230.	1.4	24
17	A probabilistic method to estimate gait kinetics in the absence of ground reaction force measurements. Journal of Biomechanics, 2019, 96, 109327.	2.1	5
18	Generalizing demonstrated motion trajectories using coordinate-free shape descriptors. Robotics and Autonomous Systems, 2019, 122, 103291.	5.1	11

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19	Model-based control for exoskeletons with series elastic actuators evaluated on sit-to-stand movements. <i>Journal of NeuroEngineering and Rehabilitation</i> , 2019, 16, 65.	4.6	47
20	Combining Imitation Learning With Constraint-Based Task Specification and Control. <i>IEEE Robotics and Automation Letters</i> , 2019, 4, 1892-1899.	5.1	20
21	Incorporating artificial skin signals in the constraint-based reactive control of human-robot collaborative manipulation tasks. <i>Industrial Robot</i> , 2019, 46, 360-368.	2.1	3
22	Estimating and Localizing External Forces Applied on Flexible Instruments by Shape Sensing. , 2019, , .		13
23	Realtime Delayless Estimation of Derivatives of Noisy Sensor Signals for Quasi-Cyclic Motions With Application to Joint Acceleration Estimation on an Exoskeleton. <i>IEEE Robotics and Automation Letters</i> , 2018, 3, 1647-1654.	5.1	8
24	Experimental maneuverability and agility quantification for rotary unmanned aerial vehicle. <i>International Journal of Micro Air Vehicles</i> , 2018, 10, 3-11.	1.3	12
25	Incorporating Artificial Skin Signals in the Constraint-based Reactive Control of Human-Robot Collaborative Manipulation Tasks. , 2018, , .		5
26	ExoTen-Glove: A Force-Feedback Haptic Glove Based on Twisted String Actuation System. , 2018, , .		18
27	Robust Optimization-Based Calculation of Invariant Trajectory Representations for Point and Rigid-body Motion. , 2018, , .		4
28	Estimating Contact Forces and Moments for Walking Robots and Exoskeletons Using Complementary Energy Methods. <i>IEEE Robotics and Automation Letters</i> , 2018, 3, 3410-3417.	5.1	9
29	Haptic Perception of Virtual Spring Stiffness Using ExoTen-Glove. , 2018, , .		4
30	A Novel Haptic Glove (ExoTen-Glove) Based on Twisted String Actuation (TSA) System for Virtual Reality. <i>Lecture Notes in Computer Science</i> , 2018, , 612-622.	1.3	6
31	Real-Time Gait Event Detection Based on Kinematic Data Coupled to a Biomechanical Model â€. <i>Sensors</i> , 2017, 17, 671.	3.8	27
32	Analysis of Optimal Control Problem Formulations in Skeletal Movement Predictions. <i>Biosystems and Biorobotics</i> , 2017, , 1269-1273.	0.3	1
33	A Model of Human Non-stepping Postural Responses as the Basis for a Biomimetic Control Strategy for Robot-Assisted Balance. <i>Biosystems and Biorobotics</i> , 2017, , 621-625.	0.3	0
34	Integral Modeling of a Twin-Screw Compressor. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2016, 138, .	2.9	3
35	Force Control. <i>Springer Handbooks</i> , 2016, , 195-220.	0.6	54
36	Mechanical effort predicts the selection of ankle over hip strategies in nonstepping postural responses. <i>Journal of Neurophysiology</i> , 2016, 116, 1937-1945.	1.8	22

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37	Control of a hybrid robotic system for computer-assisted interventions in dynamic environments. International Journal of Computer Assisted Radiology and Surgery, 2016, 11, 1371-1383.	2.8	7
38	Generalizing demonstrated motions and adaptive motion generation using an invariant rigid body trajectory representation. , 2016, , .		5
39	Predicting Seat-Off and Detecting Start-of-Assistance Events for Assisting Sit-to-Stand With an Exoskeleton. IEEE Robotics and Automation Letters, 2016, 1, 792-799.	5.1	19
40	Robustness and Efficiency Improvements for Star Tracker Attitude Estimation. Journal of Guidance, Control, and Dynamics, 2015, 38, 2108-2121.	2.8	4
41	Design and Control of an Unmanned Aerial Vehicle for Autonomous Parcel Delivery with Transition from Vertical Take-off to Forward Flight – VertiKUL, a Quadcopter Tailsitter. International Journal of Micro Air Vehicles, 2015, 7, 395-405.	1.3	72
42	Sensitivity of predicted muscle forces during gait to anatomical variability in musculotendon geometry. Journal of Biomechanics, 2015, 48, 2116-2123.	2.1	31
43	Constraint-Based Interaction Control of Robots Featuring Large Compliance and Deformation. IEEE Transactions on Robotics, 2015, 31, 1252-1260.	10.3	12
44	Comparison of rigid body motion trajectory descriptors for motion representation and recognition. , 2015, , .		15
45	Optimal excitation and identification of the dynamic model of robotic systems with compliant actuators. , 2015, , .		19
46	eTaSL/eTC: A constraint-based task specification language and robot controller using expression graphs. , 2014, , .		70
47	A good attitude towards improved space telescope observations. Proceedings of SPIE, 2014, , .	0.8	0
48	An Accurate and Efficient Gaussian Fit Centroiding Algorithm for Star Trackers. Journal of the Astronautical Sciences, 2014, 61, 60-84.	1.5	38
49	Constraint-based specification of hybrid position-impedance-force tasks. , 2014, , .		11
50	Learning a Predictive Model of Human Gait for the Control of a Lower-limb Exoskeleton. , 2014, , .		17
51	Constraint- and synergy-based specification of manipulation tasks. , 2014, , .		2
52	A Smoothed GMS Friction Model Suited for Gradient-Based Friction State and Parameter Estimation. IEEE/ASME Transactions on Mechatronics, 2014, 19, 1593-1602.	5.8	31
53	Optimal Path Following for Differentially Flat Robotic Systems Through a Geometric Problem Formulation. IEEE Transactions on Robotics, 2014, 30, 980-985.	10.3	19
54	An adaptable system for RGB-D based human body detection and pose estimation. Journal of Visual Communication and Image Representation, 2014, 25, 39-52.	2.8	99

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55	An Optimization-Based Estimation and Adaptive Control Approach for Human-Robot Cooperation. Springer Tracts in Advanced Robotics, 2014, , 1-15.	0.4	1
56	Time-optimal path following for robots with trajectory jerk constraints using sequential convex programming. , 2013, , .		12
57	Extending the iTaSC Constraint-based Robot Task Specification Framework to Time-Independent Trajectories and User-Configurable Task Horizons. , 2013, , .		14
58	Geometric Relations Between Rigid Bodies (Part 1): Semantics for Standardization. IEEE Robotics and Automation Magazine, 2013, 20, 84-93.	2.0	23
59	Time-Optimal Path Following for Robots With Convex-Concave Constraints Using Sequential Convex Programming. IEEE Transactions on Robotics, 2013, 29, 1485-1495.	10.3	66
60	Optimal robot path following for minimal time versus energy loss trade-off using sequential convex programming. , 2013, , .		0
61	Convex time-optimal robot path following with Cartesian acceleration and inertial force and torque constraints. Proceedings of the Institution of Mechanical Engineers Part I: Journal of Systems and Control Engineering, 2013, 227, 724-732.	1.0	9
62	Time-optimal path following for robots with object collision avoidance using lagrangian duality. , 2013, , .		3
63	Geometric Relations Between Rigid Bodies (Part 2): From Semantics to Software. IEEE Robotics and Automation Magazine, 2013, 20, 91-102.	2.0	6
64	Highly Efficient Attitude-Estimation Algorithm for Star Trackers Using Optimal Image Matching. Journal of Guidance, Control, and Dynamics, 2013, 36, 1672-1680.	2.8	12
65	Rapid application development of constrained-based task modelling and execution using domain specific languages. , 2013, , .		13
66	Probabilistic approach to recognize local navigation plans by fusing past driving information with a personalized user model. , 2013, , .		14
67	Time-optimal parking and flying: Solving path following problems efficiently. , 2013, , .		6
68	Rigid body pose and twist scene graph founded on geometric relations semantics for robotic applications. , 2013, , .		0
69	Multi RGB-D camera setup for generating large 3D point clouds. , 2013, , .		7
70	Classical and subsequence dynamic time warping for recognition of rigid body motion trajectories. , 2013, , .		2
71	A Smoothed GMS friction model suited for gradient-based friction state estimation. , 2012, , .		7
72	A Smoothed GMS friction model for Moving Horizon friction state and parameter estimation. , 2012, , .		12

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73	Invariant representations to reduce the variability in recognition of rigid body motion trajectories. , 2012, , .		2
74	A constraint-based programming approach to physical human-robot interaction. , 2012, , .		8
75	Force-Sensorless and Bimanual Human-Robot Comanipulation Implementation using iTaSC. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 759-766.	0.4	4
76	Teleoperation in Presence of Uncertainties: a Constraint-Based Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 385-392.	0.4	1
77	Constraint-Based Task Specification and Control for Visual Servoing Application Scenarios. Automatisierungstechnik, 2012, 60, 260-269.	0.8	0
78	Backwards Maneuvering Powered Wheelchairs with Haptic Guidance. Lecture Notes in Computer Science, 2012, , 419-431.	1.3	3
79	A hybrid pose / wrench control framework for quadrotor helicopters. , 2012, , .		47
80	A split-horizon scheme for on-line friction parameter estimation. , 2011, , .		3
81	Recognition of 6 DOF rigid body motion trajectories using a coordinate-free representation. , 2011, , .		10
82	Haptic coupling with augmented feedback between two KUKA Light-Weight Robots and the PR2 robot arms. , 2011, , .		2
83	Reusable hybrid force-velocity controlled motion specifications with executable Domain Specific Languages. , 2011, , .		17
84	Representing actions with Kernels. , 2011, , .		6
85	Invariant Description of Rigid Body Motion Trajectories. Journal of Mechanisms and Robotics, 2010, 2, .	2.2	37
86	Identification of Contact Parameters from Stiff Multi-point Contact Robotic Operations. International Journal of Robotics Research, 2010, 29, 367-385.	8.5	15
87	Pushing motion control systems to their limits using convex optimization techniques. , 2010, , .		1
88	Optimal performance trade-offs in repetitive control: Experimental validation on an active air bearing setup. , 2009, , .		0
89	Recursive log-barrier method for on-line time-optimal robot path tracking. , 2009, , .		10
90	Extending iTaSC to support inequality constraints and non-instantaneous task specification. , 2009, , .		50

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91	On-line time-optimal path tracking for robots. , 2009, , .		21
92	Identification of Contact Dynamics Parameters for Stiff Robotic Payloads. IEEE Transactions on Robotics, 2009, 25, 240-252.	10.3	29
93	Time-Optimal Path Tracking for Robots: A Convex Optimization Approach. IEEE Transactions on Automatic Control, 2009, 54, 2318-2327.	5.7	384
94	Optimal Performance Tradeoffs in Repetitive Control: Experimental Validation on an Active Air Bearing Setup. IEEE Transactions on Control Systems Technology, 2009, 17, 970-979.	5.2	18
95	iTASC: A Tool for Multi-Sensor Integration in Robot Manipulation. Lecture Notes in Electrical Engineering, 2009, , 235-254.	0.4	23
96	Adaptive Full Scan Model for Range Finders in Dynamic Environments. Springer Tracts in Advanced Robotics, 2009, , 441-450.	0.4	0
97	Dynamic simulation of human motion: numerically efficient inclusion of muscle physiology by a convex optimization. Optimization and Engineering, 2008, 9, 213-238.	2.4	16
98	Integration of planning and execution in force controlled compliant motion. Robotics and Autonomous Systems, 2008, 56, 437-450.	5.1	17
99	Robust high-order repetitive control: Optimal performance trade-offs. Automatica, 2008, 44, 2628-2634.	5.0	136
100	Force Control. , 2008, , 161-185.		140
101	iTASC: a tool for multi-sensor integration in robot manipulation. , 2008, , .		30
102	Time-energy optimal path tracking for robots: a numerically efficient optimization approach. , 2008, , .		52
103	Polynomial spline input design for LPV motion systems. , 2008, , .		1
104	Generalized repetitive control: Better performance with less memory. , 2008, , .		3
105	Dynamically optimal polynomial splines for flexible servo-systems: Experimental results. , 2008, , .		0
106	Experimental Validation of Input Torque Balancing Applied to Weaving Machinery. Journal of Mechanical Design, Transactions of the ASME, 2008, 130, .	2.9	9
107	Rigorously Bayesian range finder sensor model for dynamic environments. , 2008, , .		13
108	Design of dynamically optimal spline motion inputs: Experimental results. , 2008, , .		3

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109	On-line identification of contact dynamics in the presence of geometric uncertainties. , 2008, , .		13
110	Robust high-order repetitive control. , 2008, , .		5
111	Image-Based Visual Servoing with Extra Task Related Constraints in a General Framework for Sensor-Based Robot Systems. Lecture Notes in Electrical Engineering, 2008, , 187-204.	0.4	2
112	Contact State Segmentation Using Particle Filters for Programming by Human Demonstration in Compliant Motion Tasks. Springer Tracts in Advanced Robotics, 2008, , 3-12.	0.4	4
113	Constraint-based Task Specification and Estimation for Sensor-Based Robot Systems in the Presence of Geometric Uncertainty. International Journal of Robotics Research, 2007, 26, 433-455.	8.5	218
114	Optimal Design of Spline-Based Feedforward for Trajectory Tracking. Proceedings of the American Control Conference, 2007, , .	0.0	5
115	Application of a Generic Constraint-Based Programming Approach to an Industrially Relevant Robot Task with Geometric Uncertainties. , 2007, , .		2
116	Design of Robust Optimal Feedforward Controllers for Periodic Disturbances. Proceedings of the American Control Conference, 2007, , .	0.0	3
117	An application of constraint-based task specification and estimation for sensor-based robot systems. , 2007, , .		0
118	Dynamically Compensated and Robust Motion System Inputs Based on Splines: A Linear Programming Approach. Proceedings of the American Control Conference, 2007, , .	0.0	5
119	Incremental Building of a Polyhedral Feature Model for Programming by Human Demonstration of Force-Controlled Tasks. , 2007, 23, 20-33.		4
120	Dynamic Model Identification for Industrial Robots. IEEE Control Systems, 2007, 27, 58-71.	0.8	276
121	Contact-State Segmentation Using Particle Filters for Programming by Human Demonstration in Compliant-Motion Tasks. , 2007, 23, 218-231.		59
122	Modelling of Second Order Polynomial Surface Contacts for Programming by Human Demonstration. Lecture Notes in Control and Information Sciences, 2007, , 269-282.	1.0	0
123	Ultimate Limits for Counterweight Balancing of Crank-Rocker Four-Bar Linkages. Journal of Mechanical Design, Transactions of the ASME, 2006, 128, 1272-1284.	2.9	16
124	Particle Filters for Hybrid Event Sensor Fusion with 3D Vision and Force. , 2006, , .		5
125	Construction of a geometric 3-D model from sensor measurements collected during compliant motion. Springer Tracts in Advanced Robotics, 2006, , 571-580.	0.4	2
126	Input torque balancing using a cam-based centrifugal pendulum: design procedure and example. Journal of Sound and Vibration, 2005, 283, 1-20.	3.9	19

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127	Input Torque Balancing Using an Inverted Cam Mechanism. Journal of Mechanical Design, Transactions of the ASME, 2005, 127, 887.	2.9	23
128	Polyhedral contact formation identification for autonomous compliant motion: exact nonlinear bayesian filtering. , 2005, 21, 124-129.		38
129	Online Statistical Model Recognition and State Estimation for Autonomous Compliant Motion. IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews, 2005, 35, 16-29.	2.9	19
130	Kalman filters for non-linear systems: a comparison of performance. International Journal of Control, 2004, 77, 639-653.	1.9	264
131	Integrated Vision/Force Robotic Servoing in the Task Frame Formalism. International Journal of Robotics Research, 2003, 22, 941-954.	8.5	55
132	Hybrid fuzzy probabilistic data association filter and joint probabilistic data association filter. Information Sciences, 2002, 142, 195-226.	6.9	32
133	Random execution of a set of contacts to solve the grasping and contact uncertainties in robotic tasks. Robotica, 2001, 19, 199-207.	1.9	0
134	Possibilistic Kalman filtering for radar 2D tracking. Information Sciences, 2000, 130, 85-107.	6.9	22
135	Adaptive Control of Electrically Driven Space Robots Based on Virtual Decomposition. Journal of Guidance, Control, and Dynamics, 1999, 22, 329-339.	2.8	4
136	Efficient kinematics of a spherical 4R wrist by means of an equivalent 3R wrist. Mechanism and Machine Theory, 1998, 33, 649-659.	4.5	6
137	Optimal Selection Procedure for Induction Motor Based Servo Drives. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1998, 31, 327-333.	0.4	0
138	Model-Based Planar Contour Following in the Presence of Pose and Model Errors. International Journal of Robotics Research, 1997, 16, 840-858.	8.5	14
139	Virtual Decomposition Based Adaptive Control for Robot Manipulators: Theory and Experiments. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1997, 30, 227-233.	0.4	0
140	Invariant Hybrid Force/Position Control of a Velocity Controlled Robot with Compliant End Effector Using Modal Decoupling. International Journal of Robotics Research, 1997, 16, 340-356.	8.5	28
141	Optimal Feedforward Prefilter With Frequency Domain Specification for Nonminimum Phase Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1996, 118, 791-795.	1.6	9
142	Robot force control with an actively damped flexible end effector. Robotics and Autonomous Systems, 1996, 19, 205-214.	5.1	6
143	Surface shape recovery with a force-controlled robot. Advanced Robotics, 1996, 11, 413-427.	1.8	0
144	Special Issue on Integration Among Planning, Sensing, and Control. International Journal of Robotics Research, 1995, 14, 405-406.	8.5	0

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145	Kinematic Models for Model-Based Compliant Motion in the Presence of Uncertainty. International Journal of Robotics Research, 1995, 14, 465-482.	8.5	44