

# Shaoping Bai

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/422627/publications.pdf>

Version: 2024-02-01

105  
papers

2,085  
citations

218677

26  
h-index

276875

41  
g-index

107  
all docs

107  
docs citations

107  
times ranked

1238  
citing authors

#	ARTICLE	IF	CITATIONS
1	A Review on Design of Upper Limb Exoskeletons. <i>Robotics</i> , 2020, 9, 16.	3.5	234
2	Optimum design of spherical parallel manipulators for a prescribed workspace. <i>Mechanism and Machine Theory</i> , 2010, 45, 200-211.	4.5	115
3	A robust forward-displacement analysis of spherical parallel robots. <i>Mechanism and Machine Theory</i> , 2009, 44, 2204-2216.	4.5	82
4	A human-centered design optimization approach for robotic exoskeletons through biomechanical simulation. <i>Robotics and Autonomous Systems</i> , 2017, 91, 337-347.	5.1	70
5	Kinematic Analysis and Design of a Novel Shoulder Exoskeleton Using a Double Parallelogram Linkage. <i>Journal of Mechanisms and Robotics</i> , 2018, 10, .	2.2	70
6	Dynamic modeling and design optimization of a 3-DOF spherical parallel manipulator. <i>Robotics and Autonomous Systems</i> , 2014, 62, 1377-1386.	5.1	66
7	Design of a passive lower limb exoskeleton for walking assistance with gravity compensation. <i>Mechanism and Machine Theory</i> , 2020, 150, 103840.	4.5	61
8	Design optimization on the drive train of a light-weight robotic arm. <i>Mechatronics</i> , 2011, 21, 560-569.	3.3	48
9	A New Approach to Design of a Lightweight Anthropomorphic Arm for Service Applications. <i>Journal of Mechanisms and Robotics</i> , 2015, 7, .	2.2	47
10	Coupler-curve synthesis of four-bar linkages via a novel formulation. <i>Mechanism and Machine Theory</i> , 2015, 94, 177-187.	4.5	46
11	A review of spherical motion generation using either spherical parallel manipulators or spherical motors. <i>Mechanism and Machine Theory</i> , 2019, 140, 377-388.	4.5	46
12	Architecture optimization of a parallel Schönflies-motion robot for pick-and-place applications in a predefined workspace. <i>Mechanism and Machine Theory</i> , 2016, 106, 148-165.	4.5	45
13	A novel revolute joint of variable stiffness with reconfigurability. <i>Mechanism and Machine Theory</i> , 2019, 133, 720-736.	4.5	45
14	A compact 3-DOF shoulder mechanism constructed with scissors linkages for exoskeleton applications. <i>Mechanism and Machine Theory</i> , 2019, 132, 264-278.	4.5	42
15	Mobile platform center shift in spherical parallel manipulators with flexible limbs. <i>Mechanism and Machine Theory</i> , 2014, 75, 12-26.	4.5	41
16	PD-Based Fuzzy Sliding Mode Control of a Wheelchair Exoskeleton Robot. <i>IEEE/ASME Transactions on Mechatronics</i> , 2020, 25, 2546-2555.	5.8	40
17	Kinematic Calibration and Pose Measurement of a Medical Parallel Manipulator by Optical Position Sensors. <i>Journal of Field Robotics</i> , 2003, 20, 201-209.	0.7	39
18	A unified input-output analysis of four-bar linkages. <i>Mechanism and Machine Theory</i> , 2008, 43, 240-251.	4.5	36

#	ARTICLE	IF	CITATIONS
19	Modelling of a special class of spherical parallel manipulators with Euler parameters. <i>Robotica</i> , 2009, 27, 161-170.	1.9	36
20	Design and kinematic analysis of a 3-RRR spherical parallel manipulator reconfigured with four-bar linkages. <i>Robotics and Computer-Integrated Manufacturing</i> , 2019, 56, 55-65.	9.9	36
21	An upper-body exoskeleton with a novel shoulder mechanism for assistive applications. , 2017, , .		34
22	Design of a biologically inspired lower limb exoskeleton for human gait rehabilitation. <i>Review of Scientific Instruments</i> , 2016, 87, 104301.	1.3	32
23	Integrated dimensional and drive-train design optimization of a light-weight anthropomorphic arm. <i>Robotics and Autonomous Systems</i> , 2012, 60, 113-122.	5.1	31
24	An ankle rehabilitation robot based on 3-RRS spherical parallel mechanism. <i>Advances in Mechanical Engineering</i> , 2017, 9, 168781401771811.	1.6	31
25	Design, modeling and testing of a compact variable stiffness mechanism for exoskeletons. <i>Mechanism and Machine Theory</i> , 2020, 151, 103905.	4.5	31
26	Design and analysis of a metamorphic mechanism cell for multistage orderly deployable/retractable mechanism. <i>Mechanism and Machine Theory</i> , 2017, 111, 85-98.	4.5	29
27	A Novel Precision Measuring Parallel Mechanism for the Closed-Loop Control of a Biologically Inspired Lower Limb Exoskeleton. <i>IEEE/ASME Transactions on Mechatronics</i> , 2018, 23, 2693-2703.	5.8	28
28	A 4-DOF Upper Limb Exoskeleton for Physical Assistance: Design, Modeling, Control and Performance Evaluation. <i>Applied Sciences (Switzerland)</i> , 2021, 11, 5865.	2.5	27
29	Quadruped Free Gait Generation Based on the Primary/Secondary Gait. <i>Robotica</i> , 1999, 17, 405-412.	1.9	26
30	Terrain evaluation and its application to path planning for walking machines. <i>Advanced Robotics</i> , 2001, 15, 729-748.	1.8	26
31	A fully analytical method for coupler-curve synthesis of planar four-bar linkages. <i>Mechanism and Machine Theory</i> , 2021, 155, 104070.	4.5	23
32	A Novel Passive Shoulder Exoskeleton Designed With Variable Stiffness Mechanism. <i>IEEE Robotics and Automation Letters</i> , 2022, 7, 2748-2754.	5.1	21
33	Integrated design, modeling and analysis of a novel spherical motion generator driven by electromagnetic principle. <i>Robotics and Autonomous Systems</i> , 2018, 106, 69-81.	5.1	20
34	Payload estimation using force myography sensors for control of upper-body exoskeleton in load carrying assistance. <i>Modeling, Identification and Control</i> , 2019, 40, 189-198.	1.1	20
35	A parametric model of 3-PPR planar parallel manipulators for optimum shape design of platforms. <i>Mechanism and Machine Theory</i> , 2017, 118, 139-153.	4.5	18
36	Robust dynamic decoupling control for permanent magnet spherical actuators based on extended state observer. <i>IET Control Theory and Applications</i> , 2017, 11, 619-631.	2.1	18

#	ARTICLE	IF	CITATIONS
37	A Unified Formulation for Dimensional Synthesis of Stephenson Linkages. Journal of Mechanisms and Robotics, 2016, 8, .	2.2	17
38	End User Needs Elicitation for a Full-body Exoskeleton to Assist the Elderly. Procedia Manufacturing, 2015, 3, 1403-1409.	1.9	16
39	Kinematic design and analysis of a 6-DOF spatial five-Bar linkage. Mechanism and Machine Theory, 2021, 158, 104227.	4.5	15
40	Energy Optimal Trajectories in Human Arm Motion Aiming for Assistive Robots. Modeling, Identification and Control, 2017, 38, 11-19.	1.1	15
41	A Robust Solution of the Spatial Burmester Problem. Journal of Mechanisms and Robotics, 2012, 4, .	2.2	14
42	Mechanical Design and Kinematic Modeling of a Cable-Driven Arm Exoskeleton Incorporating Inaccurate Human Limb Anthropomorphic Parameters. Sensors, 2019, 19, 4461.	3.8	14
43	Synthesis of RCCC Linkages to Visit Four Given Poses. Journal of Mechanisms and Robotics, 2015, 7, .	2.2	13
44	Exact synthesis and inputâ€“output analysis of 1-dof planar linkages for visiting 10 poses. Mechanism and Machine Theory, 2020, 143, 103625.	4.5	13
45	Design of a powered full-body exoskeleton for physical assistance of elderly people. International Journal of Advanced Robotic Systems, 2021, 18, 172988142110535.	2.1	13
46	Geometric analysis of coupler-link mobility and circuits for planar four-bar linkages. Mechanism and Machine Theory, 2017, 118, 53-64.	4.5	12
47	Quadruped free gait generation for straight-line and circular trajectories. Advanced Robotics, 1999, 13, 513-538.	1.8	11
48	Comparison of 3-PP&#x0332;R parallel planar manipulators based on their sensitivity to joint clearances. , 2010, , .		10
49	M-DOF dynamic model for load sharing behavior analysis of PGT. Journal of Mechanical Science and Technology, 2016, 30, 993-1001.	1.5	10
50	Stability and Gait Planning of 3-UPU Hexapod Walking Robot. Robotics, 2018, 7, 48.	3.5	10
51	Suppress Vibration on Robotic Polishing with Impedance Matching. Actuators, 2021, 10, 59.	2.3	10
52	Effective Multi-Mode Grasping Assistance Control of a Soft Hand Exoskeleton Using Force Myography. Frontiers in Robotics and AI, 2020, 7, 567491.	3.2	10
53	Quadruped free gait generation for straight-line and circular trajectories. Advanced Robotics, 1998, 13, 513-538.	1.8	9
54	Intention Detection for Dexterous Human Arm Motion with FSR Sensor Bands. , 2017, , .		9

#	ARTICLE	IF	CITATIONS
55	Forward kinematics of spherical parallel manipulators with revolute joints. , 2008, , .		8
56	Shape modeling of a concentric-tube continuum robot. , 2012, , .		8
57	Dynamic modeling and trajectory tracking control of an electromagnetic direct driven spherical motion generator. Robotics and Computer-Integrated Manufacturing, 2019, 59, 201-212.	9.9	8
58	Analytical determination of shape singularities for three types of parallel manipulators. Mechanism and Machine Theory, 2020, 149, 103812.	4.5	8
59	Algebraic coupler curve of spherical four-bar linkages and its applications. Mechanism and Machine Theory, 2021, 158, 104218.	4.5	8
60	Architectural singularities of parallel mechanisms with prismatic joints due to special designs of platform shapes. Mechanical Sciences, 2019, 10, 449-464.	1.0	8
61	Lower limb exoskeleton parasitic force modeling and minimizing with an adaptive trajectory controller. Mechanism and Machine Theory, 2022, 170, 104731.	4.5	8
62	The Synthesis of Dyads With One Prismatic Joint. Journal of Mechanical Design, Transactions of the ASME, 2008, 130, .	2.9	7
63	Parametric optimal design of a parallel Sch&#x00F6;nflies-motion robot under pick-and-place trajectory constraints. , 2015, , .		7
64	Type Synthesis of 2T1R Decoupled Parallel Mechanisms Based on Lie Groups and Screw Theory. Mathematical Problems in Engineering, 2017, 2017, 1-11.	1.1	7
65	Unified model for the output accuracy of open-chain manipulators that considers joint clearance and structural parameters. Journal of Mechanical Science and Technology, 2018, 32, 4925-4931.	1.5	7
66	Modeling, Analysis and Testing of Load Distribution for Planetary Gear Trains with 3D Carrier Pinhole Position Errors. International Journal of Precision Engineering and Manufacturing, 2019, 20, 1381-1394.	2.2	7
67	Adaptive fuzzy sliding mode algorithm-based decentralised control for a permanent magnet spherical actuator. International Journal of Systems Science, 2019, 50, 403-418.	5.5	7
68	Exact Path Synthesis of RCCC Linkages for a Maximum of Nine Prescribed Positions. Journal of Mechanisms and Robotics, 2022, 14, .	2.2	7
69	User-centered development and performance assessment of a modular full-body exoskeleton (AXO-SUIT). Biomimetic Intelligence and Robotics, 2022, 2, 100032.	2.0	7
70	Integrated design optimization of a 5-DOF assistive light-weight anthropomorphic arm. , 2011, , .		6
71	Design and control of a 4-DOF cable-driven arm rehabilitation robot (CARR-4). , 2017, , .		6
72	The reachable 3-D workspace volume is a measure of payload and body-mass-index: A quasi-static kinetic assessment. Applied Ergonomics, 2019, 75, 108-119.	3.1	6

#	ARTICLE	IF	CITATIONS
73	Analytical magnetics and torque modeling of a multi-layer electromagnetic driven spherical motion generator. <i>Journal of Magnetism and Magnetic Materials</i> , 2020, 493, 165707.	2.3	6
74	Magnetic field modeling and validation for a spherical actuator with cylindrical permanent magnets. <i>Simulation Modelling Practice and Theory</i> , 2020, 98, 101954.	3.8	5
75	Terrain-evaluation-based motion planning for legged locomotion on irregular terrain. <i>Advanced Robotics</i> , 2003, 17, 761-778.	1.8	4
76	Evaluation of workspace of a spherical robotic wrist. , 2007, , .		4
77	A COMPREHENSIVE SOLUTION OF THE CLASSIC BURMESTER PROBLEM. <i>Transactions of the Canadian Society for Mechanical Engineering</i> , 2008, 32, 137-154.	0.8	4
78	Validation of subject-specific musculoskeletal models using the anatomical reachable 3-D workspace. <i>Journal of Biomechanics</i> , 2019, 90, 92-102.	2.1	4
79	Design and optimization of a hip disarticulation prosthesis using the remote center of motion mechanism. <i>Technology and Health Care</i> , 2021, 29, 269-281.	1.2	4
80	Dynamic modeling of an upper limb hybrid exoskeleton for simulations of load-lifting assistance. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2022, 236, 2147-2160.	2.1	4
81	A note on the univariate nonic derived from the coupler curve of four-bar linkages. <i>Mechanism and Machine Theory</i> , 2021, 162, 104344.	4.5	4
82	Design and Kinematic Analysis of a Novel Wire-Driven Spherical Scissors Mechanism. <i>Mechanisms and Machine Science</i> , 2020, , 192-200.	0.5	4
83	Kinematic Design of a Seven-Bar Linkage with Optimized Centroides for Pure-Rolling Cutting. <i>Mathematical Problems in Engineering</i> , 2017, 2017, 1-11.	1.1	3
84	Design of a Compact Rotary Series Elastic Actuator with Nonlinear Stiffness for Lower Limb Exoskeletons. , 2019, , .		3
85	Design and Performance Evaluation of a Hybrid Hand Exoskeleton for Hand Opening/Closing. <i>Journal of Medical Devices, Transactions of the ASME</i> , 2021, 15, .	0.7	3
86	A Maxwell-Slip Based Hysteresis Model for Nonlinear Stiffness Compliant Actuators. <i>IEEE Transactions on Industrial Electronics</i> , 2022, 69, 11510-11520.	7.9	3
87	Error modelling and experimental validation for a planar 3-PPR parallel manipulator. , 2011, , .		2
88	Integrated design and modelling of an electro-magnets driven spherical parallel manipulator. , 2017, , .		2
89	Torque modelling and current optimization of a spherical actuator built as an electro-magnets driven spherical parallel manipulator. , 2017, , .		2
90	A Semi-active Upper-Body Exoskeleton for Motion Assistance. <i>Biosystems and Biorobotics</i> , 2022, , 301-305.	0.3	2

#	ARTICLE	IF	CITATIONS
91	Kinematics of a 6-DOF parallel manipulator with two limbs actuated by spherical motion generators. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2022, 236, 2828-2846.	2.1	2
92	Image processing assisted locomotion observation of cockroach Blaptica Dubia. Transactions of the Institute of Measurement and Control, 2015, 37, 522-535.	1.7	1
93	Advances in Robotics and Mechatronics. Robotics, 2020, 9, 36.	3.5	1
94	An Active Vibration Suppression Method for Macro-Mini Manipulator. , 2021, , .		1
95	Modeling and Analysis of Physical Human-Robot Interaction of an Upper Body Exoskeleton in Assistive Applications. Modeling, Identification and Control, 2021, 42, 159-172.	1.1	1
96	Dynamic modeling and sliding mode control of 3-RSS coaxial layout polishing robot. Journal of the Brazilian Society of Mechanical Sciences and Engineering, 2022, 44, .	1.6	1
97	Kinematics of Spherical Multi-Lobe-Cams for The Design of a Pitch-Roll Wrist. , 2006, , .		0
98	Fundamental Theories and Practice in Service Robotics. Mathematical Problems in Engineering, 2015, 2015, 1-2.	1.1	0
99	Stiffness analysis of a cable-driven wrist robotic rehabilitator. , 2016, , .		0
100	Optimization design of a bionic lower limb rehabilitation robot with dynamic analysis. , 2017, , .		0
101	A Case Study on Designing a Passive Feeding-Assistive Orthosis for Arthrogryposis. Journal of Medical Devices, Transactions of the ASME, 2020, 14, .	0.7	0
102	A Novel 2-SUR 6-DOF Parallel Manipulator Actuated by Spherical Motion Generators. , 2021, , .		0
103	Design and Analytical Magnetic Modeling of a Spherical Motion Generator With Multi-DOF Electromagnetic Actuation. IEEE Transactions on Magnetics, 2022, 58, 1-5.	2.1	0
104	Extended Rotation Matrix for Kinematics of Pointing Mechanisms. Springer Proceedings in Advanced Robotics, 2022, , 39-46.	1.3	0
105	Corrections to "A Novel Passive Shoulder Exoskeleton Designed With Variable Stiffness Mechanism" [Apr 22 2748-2754]. IEEE Robotics and Automation Letters, 2022, 7, 7099-7099.	5.1	0