Shapour Azarm

List of Publications by Citations

140 papers	2,553 citations	28 h-index	46 g-index
176 ext. papers	2,908 ext. citations	2.9 avg, IF	5.15 L-index

#	Paper	IF	Citations
140	Metrics for Quality Assessment of a Multiobjective Design Optimization Solution Set. *Journal of Mechanical Design, Transactions of the ASME*, **2001**, 123, 18-25	3	185
139	Multi-objective robust optimization using a sensitivity region concept. *Structural and Multidisciplinary Optimization*, **2005**, 29, 50-60	3.6	134
138	Product Design Selection Under Uncertainty and With Competitive Advantage. *Journal of Mechanical Design, Transactions of the ASME*, **2000**, 122, 411-418	3	113
137	An Approach for Product Line Design Selection Under Uncertainty and Competition. *Journal of Mechanical Design, Transactions of the ASME*, **2002**, 124, 385-392	3	108
136	A Kriging Metamodel Assisted Multi-Objective Genetic Algorithm for Design Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **2008**, 130,	3	93
135	Constraint handling improvements for multiobjective genetic algorithms. *Structural and Multidisciplinary Optimization*, **2002**, 23, 204-213	3.6	91
134	Multiobjective Collaborative Robust Optimization With Interval Uncertainty and Interdisciplinary Uncertainty Propagation. *Journal of Mechanical Design, Transactions of the ASME*, **2008**, 130,	3	71
133	A New Deterministic Approach Using Sensitivity Region Measures for Multi-Objective Robust and Feasibility Robust Design Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **2006**, 128, 874-883	3	70
132	An accumulative error based adaptive design of experiments for offline metamodeling. *Structural and Multidisciplinary Optimization*, **2010**, 40, 137-155	3.6	67
131	Design of Robust New Products under Variability: Marketing Meets Design*. *Journal of Product Innovation Management*, **2005**, 22, 177-192	7.1	67
130	Cross-validation based single response adaptive design of experiments for Kriging metamodeling of deterministic computer simulations. *Structural and Multidisciplinary Optimization*, **2013**, 48, 581-605	3.6	64
129	On improving multiobjective genetic algorithms for design optimization. *Structural Optimization*, **1999**, 18, 146-155		61
128	Non-Gradient Based Parameter Sensitivity Estimation for Single Objective Robust Design Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **2004**, 126, 395-402	3	56
127	Bayesian meta-modelling of engineering design simulations: a sequential approach with adaptation to irregularities in the response behaviour. *International Journal for Numerical Methods in Engineering*, **2005**, 62, 2104-2126	2.4	50
126	A decision support system for product design selection: A generalized purchase modeling approach. *Decision Support Systems*, **2006**, 42, 333-350	5.6	47
125	A multi-objective genetic algorithm for robust design optimization **2005**,		47
124	Multi-Objective Single Product Robust Optimization: An Integrated Design and Marketing Approach. *Journal of Mechanical Design, Transactions of the ASME*, **2006**, 128, 884-892	3	46

123	On improving multiobjective genetic algorithms for design optimization. *Structural Optimization*, **1999**, 18, 146		45
122	Multi-Level Design Optimization Using Global Monotonicity Analysis. *Journal of Mechanisms, Transmissions, and Automation in Design*, **1989**, 111, 259-263		43
121	A Feasibility Robust Optimization Method Using Sensitivity Region Concept. *Journal of Mechanical Design, Transactions of the ASME*, **2005**, 127, 858-865	3	35
120	A modified Benders decomposition method for efficient robust optimization under interval uncertainty. *Structural and Multidisciplinary Optimization*, **2011**, 44, 259-275	3.6	34
119	An Information-Theoretic Entropy Metric for Assessing Multi-Objective Optimization Solution Set Quality. *Journal of Mechanical Design, Transactions of the ASME*, **2003**, 125, 655-663	3	32
118	An Interactive Multistage □nequality Constraint Method For Multiple Objectives Decision Making. *Journal of Mechanical Design, Transactions of the ASME*, **1998**, 120, 678-686	3	31
117	New Approximation Assisted Multi-objective collaborative Robust Optimization (new AA-McRO) under interval uncertainty. *Structural and Multidisciplinary Optimization*, **2013**, 47, 19-35	3.6	30
116	Optimizing thermal design of data center cabinets with a new multi-objective genetic algorithm. *Distributed and Parallel Databases*, **2007**, 21, 167-192	0.9	30
115	Multi-Objective Robust Optimization Under Interval Uncertainty Using Online Approximation and Constraint Cuts. *Journal of Mechanical Design, Transactions of the ASME*, **2011**, 133,	3	29
114	Interval Uncertainty-Based Robust Optimization for Convex and Non-Convex Quadratic Programs with Applications in Network Infrastructure Planning. *Networks and Spatial Economics*, **2011**, 11, 159-191	1.9	29
113	Diversity assessment of Pareto optimal solution sets: an entropy approach		29
112	Engineering Product Design Optimization for Retail Channel Acceptance. *Journal of Mechanical Design, Transactions of the ASME*, **2008**, 130,	3	28
111	Entropy-based multi-objective genetic algorithm for design optimization. *Structural and Multidisciplinary Optimization*, **2002**, 24, 351-361	3.6	27
110	IMMUNE NETWORK SIMULATION WITH MULTIOBJECTIVE GENETIC ALGORITHMS FOR MULTIDISCIPLINARY DESIGN OPTIMIZATION. *Engineering Optimization*, **2000**, 33, 245-260	2	27
109	Retail Channel Structure Impact on Strategic Engineering Product Design. *Management Science*, **2011**, 57, 897-914	3.9	26
108	Optimality and Constrained Derivatives in Two-Level Design Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **1990**, 112, 563-568	3	23
107	Improving multi-objective genetic algorithms with adaptive design of experiments and online metamodeling. *Structural and Multidisciplinary Optimization*, **2009**, 37, 447-461	3.6	22
106	Approximation of multiresponse deterministic engineering simulations: a dependent metamodeling approach. *Structural and Multidisciplinary Optimization*, **2006**, 31, 260-269	3.6	22

105	Quality-Assisted Multi-Objective Multidisciplinary Genetic Algorithms. *AIAA Journal*, **2003**, 41, 1752-1762	2.1	21
104	Approximation-Assisted Optimization for Novel Compact Heat Exchanger Designs. *HVAC and R Research*, **2010**, 16, 707-728		20
103	Design and optimization of a one-degree-of-freedom six-bar leg mechanism for a walking machine. *Journal of Field Robotics*, **1997**, 14, 871-880		19
102	On Maximizing Solution Diversity in a Multiobjective Multidisciplinary Genetic Algorithm for Design Optimization. *Mechanics Based Design of Structures and Machines*, **2004**, 32, 491-514	1.7	19
101	A TWO-LEVEL DECOMPOSITION METHOD FOR DESIGN OPTIMIZATION. *Engineering Optimization*, **1988**, 13, 211-224	2	19
100	Corporate dashboards for integrated business and engineering decisions in oil refineries: An agent-based approach. *Decision Support Systems*, **2012**, 52, 729-741	5.6	18
99	Interval Uncertainty Reduction and Single-Disciplinary Sensitivity Analysis With Multi-Objective Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **2009**, 131,	3	18
98	Approximation assisted optimization of headers for new generation of air-cooled heat exchangers. *Applied Thermal Engineering*, **2013**, 61, 817-824	5.8	17
97	Adaptive gradient-assisted robust design optimization under interval uncertainty. *Engineering Optimization*, **2013**, 45, 1287-1307	2	16
96	Multi-level Multi-objective Genetic Algorithm Using Entropy to Preserve Diversity. *Lecture Notes in Computer Science*, **2003**, 148-161	0.9	16
95	Solving mixed-integer robust optimization problems with interval uncertainty using Benders decomposition. *Journal of the Operational Research Society*, **2015**, 66, 664-673	2	14
94	Optimal actuator placement for linear systems with limited number of actuators **2017**,		14
93	Customer-Driven Product Design Selection Using Web Based User-Generated Content **2011**,		14
92	Risk-Based Path Planning Optimization Methods for Unmanned Aerial Vehicles Over Inhabited Areas1. *Journal of Computing and Information Science in Engineering*, **2016**, 16,	2.4	14
91	On improving normal boundary intersection method for generation of Pareto frontier. *Structural and Multidisciplinary Optimization*, **2012**, 46, 839-852	3.6	13
90	Optimal uncertainty reduction for multi-disciplinary multi-output systems using sensitivity analysis. *Structural and Multidisciplinary Optimization*, **2010**, 40, 77-96	3.6	13
89	A Genetic Algorithms Based Approach for Multidisciplinary Multiobjective Collaborative Optimization **2006**,		13
88	Multiobjective Optimization of a Leg Mechanism With Various Spring Configurations for Force Reduction. *Journal of Mechanical Design, Transactions of the ASME*, **1996**, 118, 179-185	3	13

87	Integrated multi-objective robust optimization and sensitivity analysis with irreducible and reducible interval uncertainty. *Engineering Optimization*, **2009**, 41, 889-908	2	12
86	A Customer-Based Expected Utility Metric for Product Design Selection **2002**, 421		12
85	An Automated Procedure for Local Monotonicity Analysis. *Journal of Mechanisms, Transmissions, and Automation in Design*, **1984**, 106, 82-89		11
84	Estimating damage size and remaining useful life in degraded structures using deep learning-based multi-source data fusion. *Structural Health Monitoring*, **2020**, 19, 1542-1559	4.4	11
83	Reducible Uncertain Interval Design by Kriging Metamodel Assisted Multi-Objective Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **2011**, 133,	3	10
82	Sensitivity analysis for product design selection with an implicit value function. *European Journal of Operational Research*, **2007**, 180, 1245-1259	5.6	10
81	Two-Level Nonlinear Mixed Discrete-Continuous Optimization-Based Design: An Application to Printed Circuit Board Assemblies. *Journal of Electronic Packaging, Transactions of the ASME*, **1992**, 114, 425-435	2	10
80	An integrated methodology for multiobjective optimal component placement and heat sink sizing. *IEEE Transactions on Components and Packaging Technologies*, **2005**, 28, 869-876		9
79	On a Combined Multi-Objective and Feasibility Robustness Method for Design Optimization **2004**,		9
78	Interactive Product Design Selection With an Implicit Value Function. *Journal of Mechanical Design, Transactions of the ASME*, **2005**, 127, 367-377	3	9
77	A Sequential Information-Theoretic Approach to Design of Computer Experiments **2002**,		9
76	Experimental Comparison of Decentralized Task Allocation Algorithms Under Imperfect Communication. *IEEE Robotics and Automation Letters*, **2020**, 5, 572-579	4.2	8
75	Customer-Driven Optimal Design for Convergence Products. *Journal of Mechanical Design, Transactions of the ASME*, **2011**, 133,	3	8
74	Design Improvement by Sensitivity Analysis Under Interval Uncertainty Using Multi-Objective Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **2010**, 132,	3	8
73	Strategic Design Decisions for Uncertain Market Systems Using an Agent Based Approach. *Journal of Mechanical Design, Transactions of the ASME*, **2011**, 133,	3	8
72	Product Design Selection With Preference and Attribute Variability for an Implicit Value Function. *Journal of Mechanical Design, Transactions of the ASME*, **2006**, 128, 1027-1037	3	8
71	Fast Multipole Method for Nonlinear, Unsteady Aerodynamic Simulations **2018**,		7
70	On Decentralized Optimization for a Class of Multisubsystem Codesign Problems. *Journal of Mechanical Design, Transactions of the ASME*, **2017**, 139,	3	7

69	Risk-Based Path Planning Optimization Methods for UAVs Over Inhabited Areas **2015**,		6
68	Improving Multi-Objective Robust Optimization Under Interval Uncertainty Using Worst Possible Point Constraint Cuts **2009**,		6
67	Worst case deterministic feasibility and multiobjective robustness measures for engineering design optimisation. *International Journal of Reliability and Safety*, **2006**, 1, 40	0.9	6
66	A Case for a Knowledge-Based Active Set Strategy. *Journal of Mechanisms, Transmissions, and Automation in Design*, **1984**, 106, 77-81		6
65	Dynamic Data-Driven Aeroelastic Response Prediction with Discrete Sensor Observations **2018**,		5
64	Chevron plate heat exchanger optimization using efficient approximation-assisted multi-objective optimization techniques. *HVAC and R Research*, **2013**, 19, 788-799		5
63	Robust and Reliability-Based Design. *Journal of Mechanical Design, Transactions of the ASME*, **2006**, 128, 829-831	3	5
62	Maximum Accumulative Error Samplint Strategy for Approximation of Deterministic Engineering Simulations **2006**,		5
61	A MULTIOBJECTIVE INTERACTIVE SEQUENTIAL HYBRID OPTIMIZATION TECHNIQUE FOR DESIGN DECISION MAKING. *Engineering Optimization*, **2000**, 32, 485-500	2	5
60	Heuristic Optimization of Rough-Mill Yield With Production Priorities. *Journal of Engineering for Industry*, **1991**, 113, 108-116		5
59	. *IEEE Access*, **2021**, 9, 130072-130093	3.5	5
58	Minimal Sets of Quality Metrics. *Lecture Notes in Computer Science*, **2003**, 405-417	0.9	5
57	Co-design of linear systems using Generalized Benders Decomposition. *Automatica*, **2018**, 89, 180-193	5.7	4
56	Designing Complex Engineered Systems. *Journal of Mechanical Design, Transactions of the ASME*, **2011**, 133, 100301	3	4
55	Cross-Validation Based Single Response Adaptive Design of Experiments for Deterministic Computer Simulations **2008**,		4
54	Multi-objective design of liquid cooled power electronic modules for transient operation		4
53	A MULTI-OBJECTIVE HEURISTIC-BASED HYBRID GENETIC ALGORITHM*. *Mechanics Based Design of Structures and Machines*, **2002**, 30, 463-491		4
52	Multi-objective placement optimization of power electronic devices on liquid cooled heat sinks		4

51	Parameter Sensitivity Analysis in Two-Level Design Optimization. *Journal of Mechanical Design, Transactions of the ASME*, **1990**, 112, 354-361	3	4
50	Bayesian Approximation-Assisted Optimization Applied to Crashworthiness Design of a Pickup Truck **2003**,		4
49	An Integrated Robust Design and Marketing Approach for Product Design Selection Process **2004**,		4
48	Developing a Prototype Concurrent Design Tool for Composite Topside Structures. *Naval Engineers Journal*, **1997**, 109, 279-290		3
47	Engineering Design, 4th edition. *Journal of Mechanical Design, Transactions of the ASME*, **2009**, 131,	3	3
46	Quality Assisted Multi-objective Multi-disciplinary Genetic Algorithms **2002**,		3
45	A prescriptive production-distribution approach for decision making in new product design. *IEEE Transactions on Systems, Man and Cybernetics, Part C: Applications and Reviews*, **1999**, 29, 336-348		3
44	MULTIOBJECTIVE OPTIMAL DESIGN OF A SIMPLIFIED P4R MECHANISM. *Engineering Optimization*, **1996**, 27, 139-153	2	3
43	A Cross-Sectional Shape Multiplier Method for Two-Level Optimum Design of Frames. *Journal of Mechanical Design, Transactions of the ASME*, **1993**, 115, 132-142	3	3
42	Decentralized Multisubsystem Co-Design Optimization Using Direct Collocation and Decomposition-Based Methods. *Journal of Mechanical Design, Transactions of the ASME*, **2020**, 142,	3	3
41	Fast Multipole Accelerated Unsteady Vortex Lattice Method Based Computations. *Journal of Aerospace Information Systems*, **2019**, 16, 237-248	1	3
40	Communication-Aware Multi-Agent Metareasoning for Decentralized Task Allocation. *IEEE Access*, **2021**, 9, 98712-98730	3.5	3
39	Multi-Objective Design and Path Planning Optimization of Unmanned Aerial Vehicles (UAVs) **2015**,		2
38	Optimal structured static output feedback design using generalized benders decomposition **2017**,		2
37	Online Approximation Assisted Multiobjective Optimization with Space Filling, Variance and Pareto Measures with Space Filling, Variance and Pareto Measures **2010**,		2
36	Multicategory Design of Bundled Products for Retail Channels Under Uncertainty and Competition. *Journal of Mechanical Design, Transactions of the ASME*, **2010**, 132,	3	2
35	Semi analytic model for thermal fatigue failure of die attach in power electronic building blocks		2
34	Multiobjective Collaborative Robust Optimization (McRO) With Interval Uncertainty and Interdisciplinary Uncertainty Propagation **2007**, 719		2

33	A Kriging Metamodel Assisted Multi-Objective Genetic Algorithm for Design Optimization **2006**, 405		2
32	A minimax reduction method for multi-objective decomposition-based design optimization. *Structural Optimization*, **1993**, 6, 94-98		2
31	Integrating Optimal Vehicle Routing and Control With Load-Dependent Vehicle Dynamics Using a Confidence Bounds for Trees-Based Approach. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2020**, 142,	1.6	2
30	Product Design Selection With Variability in Preferences for an Implicit Value Function **2004**,		2
29	Non-Convex Feasibility Robust Optimization Via Scenario Generation and Local Refinement. *Journal of Mechanical Design, Transactions of the ASME*, **2020**, 142,	3	2
28	Dynamic Data-Driven Approach for Unmanned Aircraft Systems and Aeroelastic Response Analysis **2018**, 193-211		2
27	Multi-Objective Robust Optimization Formulations With Operational Flexibility and Discretized Uncertainty **2016**,		2
26	**2019**,		1
25	Dynamic Data-Driven Multi-Step-Ahead Prediction with Simulation Data and Sensor Measurements. *AIAA Journal*, **2019**, 57, 2270-2279	2.1	1
24	A new formulation for co-design of linear systems with system matrices having affine design variables **2016**,		1
23	A Decentralized Approach for Multi-Subsystem Co-Design Optimization Using Direct Collocation Method **2017**,		1
22	Approximation Assisted Multi-objective collaborative Robust Optimization (AA-McRO) Under Interval Uncertainty **2010**,		1
21	Approximation Assisted Multiobjective Optimization With Combined Global and Local Metamodeling **2012**,		1
20	Engineering Product Design Optimization for Retail Channel Acceptance **2006**, 1039		1
19	An Efficient Feasibility Robust Optimization Method Using a Sensitivity Region Concept **2004**, 11		1
18	Meta-Modeling of Multi-Response Engineering Simulations **2004**,		1
17	Interactive Product Design Selection With an Implicit Value Function **2002**, 411		1
16	A New Class of Six-Bar Mechanisms With Symmetrical Coupler Curves. *Journal of Mechanical Design, Transactions of the ASME*, **1998**, 120, 150-153	3	1

List of Publications

15	A Stress Model for Multiobjective Design Optimization of a Power Electronic Module* *Communicated by E. J. Haug. *Mechanics Based Design of Structures and Machines*, **1999**, 27, 163-183		1
14	Tradeoff-driven optimization-based design of mechanical systems **1992**,		1
13	Optimized hole shapes in a tall beam. *Experimental Mechanics*, **1989**, 29, 424-431	2.6	1
12	A Coupled Algorithmic-Heuristic Approach for Design Optimization. *IEEE Transactions on Systems, Man, and Cybernetics*, **1987**, 17, 289-293		1
11	OPTIMIZED REDUNDANCY ALLOCATION FOR ELECTRONIC EQUIPMENT. *Engineering Optimization*, **1988**, 14, 101-114	2	1
10	Online Data-Driven Prediction of Spatio-Temporal System Behavior Using High-Fidelity Simulations and Sparse Sensor Measurements. *Journal of Mechanical Design, Transactions of the ASME*, **2021**, 143,	3	1
9	Layout Optimization of Multi-Type Sensors and Human Inspection Tools With Probabilistic Detection of Localized Damages for Pipelines. *IEEE Access*, **2020**, 8, 90598-90614	3.5	1
8	Surrogate feasibility testing□utting for single-objective robust optimization under interval uncertainty. *Engineering Optimization*,1-17	2	1
7	MULTILEVEL MULTIOBJECTIVE OPTIMIZATION IN PRECAST CONCRETE WALL PANEL DESIGN. *Engineering Optimization*, **1994**, 22, 297-322	2	0
6	Robust Multi-Objective Genetic Algorithm (RMOGA) with Online Approximation under Interval Uncertainty **2013**, 157-181		
5	Non-Gradient Based Parameter Sensitivity Estimation for Robust Design Optimization **2003**, 121		
4	Reduction method with system analysis for multiobjective optimization-based design. *Structural Optimization*, **1994**, 7, 47-54		
3	KNOWLEDGE GATHERING FOR HEURISTIC PROGRAMMING IN DESIGN OPTIMIZATION. *Engineering Optimization*, **1987**, 11, 317-326	2	
2	Metareasoning Structures, Problems, and Modes for Multiagent Systems: A Survey. *IEEE Access*, **2020**, 8, 183080-183089	3.5	
1	Dynamic Data-Driven Approach for Unmanned Aircraft Systems Aero-elastic Response Analysis **2022**, 201-219		