Anil V Rao

List of Publications by Year
in descending order

99 papers	5,394 citations	172207 29 h-index	174990 52 g-index
101 all docs	101 docs citations	101 times ranked	2012 citing authors

#	Article	IF	Citations
1	Minimum-Fuel LEO-to-MEO Orbit Transfer Using Adaptive Gaussian Quadrature Collocation. , 2022, , .		0
2	Structure Identification Method for Nonsmooth and Singular Optimal Control Problems. , 2022, , .		1
3	Continuation Method for the Numerical Solution of Singular Optimal Control Problems Using Adaptive Radau Collocation. , 2022, , .		0
4	Mars Entry Optimal Trajectory Generation, Guidance, and Control. , 2022, , .		0
5	Method for solving bang-bang and singular optimal control problems using adaptive Radau collocation. Computational Optimization and Applications, 2022, 81, 857-887.	0.9	14
6	End-to-End Performance Optimization for High-Speed Ascentâ€“Entry Missions. Journal of Spacecraft and Rockets, 2022, 59, 871-888.	1.3	2
7	Method for solving chance constrained optimal control problems using biased kernel density estimators. Optimal Control Applications and Methods, 2021, 42, 330-354.	1.3	4
8	A Method for the Numerical Solution of Singular Optimal Control Problems Using an Adaptive Radau Collocation Method. , 2021, , .		1
9	Modeling Earth-Relative Motion with rv-Euler Parameters. , 2021, , .		0
10	Mesh refinement method for solving optimal control problems with nonsmooth solutions using jump function approximations. Optimal Control Applications and Methods, 2021, 42, 1119-1140.	1.3	9
11	Optimal Guidance and Control of a Low-Altitude Skid-to-Turn Vehicle. Journal of Spacecraft and Rockets, 2021, 58, 894-905.	1.3	2
12	Performance Optimization of a Low-Altitude Skid-to-Turn Vehicle. Journal of Spacecraft and Rockets, 2021, 58, 595-608.	1.3	1
13	Minimum-Time Earth-to-Mars Interplanetary Orbit Transfer Using Adaptive Gaussian Quadrature Collocation. Journal of Spacecraft and Rockets, 2021, 58, 1819-1832.	1.3	0
14	Warm Start Method for Solving Chance Constrained Optimal Control Problems Using Biased Kernel Density Estimators. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2021, 143, .	0.9	0
15	Minimum-Time Earth-to-Mars Interplanetary Orbit Transfer Assuming Elliptic Planetary Motion. , 2021, , .		0
16	A Proximal Method for the Numerical Solution of Singular Optimal Control Problems Using a Modified Radau Collocation Method. , 2020, , .		2
17	Mesh Refinement Method for Solving Bang-Bang Optimal Control Problems Using Direct Collocation. , 2020, , .		8
18	Comparison of Derivative Estimation Methods in Optimal Control Using Direct Collocation. AIAA Journal, 2020, 58, 341-354.	1.5	3

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19	Biased Kernel Density Estimators for Chance Constrained Optimal Control Problems. , 2020, , .		1
20	Comparison of Derivative Estimation Methods in Solving Optimal Control Problems Using Direct Collocation. , 2020, , .		1
21	Earth â€“ to â€“ Mars Interplanetary Trajectory Optimization Using Gauss Quadrature Collocation. , 2020, , .		0
22	CGPOPS. ACM Transactions on Mathematical Software, 2020, 46, 1-38.	1.6	15
23	Convergence rate for a Radau hp collocation method applied to constrained optimal control. Computational Optimization and Applications, 2019, 74, 275-314.	0.9	17
24	Computational Method for Optimal Guidance and Control Using Adaptive Gaussian Quadrature Collocation. Journal of Guidance, Control, and Dynamics, 2019, 42, 2026-2041.	1.6	13
25	Performance Optimization and Guidance of a Low-Altitude Skid-to-Turn Vehicle. Part II: Optimal Guidance. , 2019, , .		0
26	Performance Optimization and Guidance of a Low-Altitude Skid-to-Turn Vehicle. Part I: Performance Optimization. , 2019, , .		0
27	Application of Chance-Constrained Optimal Control to Optimal Obstacle Avoidance. , 2019, , .		3
28	Algorithm 984. ACM Transactions on Mathematical Software, 2018, 44, 1-25.	1.6	57
29	Convergence Rate for a Gauss Collocation Method Applied to Constrained Optimal Control. SIAM Journal on Control and Optimization, 2018, 56, 1386-1411.	1.1	19
30	Minimum-Fuel Low-Earth Orbit Aeroglide and Aerothrust Aeroassisted Orbital Transfer Subject to Heating Constraints. , 2018, , .		1
31	Exploiting Sparsity in Direct Orthogonal Collocation Methods for Solving Multiple-Phase Optimal Control Problems. , 2018, , .		3
32	Mesh-Generation Method for Real-Time Optimal Control Using Adaptive Gaussian Quadrature Collocation. , 2018, , .		2
33	A Preliminary Analysis of Mesh Refinement for Optimal Control Using Discontinuity Detection via Jump Function Approximations. , 2018, , .		0
34	Adaptive Mesh Refinement Method for Optimal Control Using Decay Rates of Legendre Polynomial Coefficients. IEEE Transactions on Control Systems Technology, 2018, 26, 1475-1483.	3.2	57
35	Automated Trajectory Optimizer for Solar Sailing (ATOSS). Aerospace Science and Technology, 2018, 72, 465-475.	2.5	20
36	Modified Radau Collocation method for Solving Optimal Control Problems with Nonsmooth Solutions Part I: Lavrentiev Phenomenon and the Search Space. , 2018, , .		3

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37	A pseudospectral method for optimal control based on collocation at the Gauss points. , 2018, , .		2
38	Modified Radau Collocation Method for Solving Optimal Control Problems with Nonsmooth Solutions Part II: Costate Estimation and the Transformed Adjoint System. , 2018, , .		2
39	Minimum-Fuel Low-Earth-Orbit Aeroglide and Aerothrust Aeroassisted Orbital Transfer Subject to Heating Constraints. Journal of Spacecraft and Rockets, 2018, 55, 723-748.	1.3	5
40	Mesh Refinement Method for Optimal Control Problems with Discontinuous Control Profiles. , 2017, , .		1
41	Rapid Ascent-Entry Vehicle Mission Optimization Using hp-Adaptive Gaussian Quadrature Collocation. , 2017, , .		4
42	Muscle Synergies Facilitate Computational Prediction of Subject-Specific Walking Motions. Frontiers in Bioengineering and Biotechnology, 2016, 4, 77.	2.0	73
43	Convergence Rate for a Gauss Collocation Method Applied to Unconstrained Optimal Control. Journal of Optimization Theory and Applications, 2016, 169, 801-824.	0.8	45
44	Evaluation of Direct Collocation Optimal Control Problem Formulations for Solving the Muscle Redundancy Problem. Annals of Biomedical Engineering, 2016, 44, 2922-2936.	1.3	216
45	Minimum-Time Trajectory Optimization of Low-Thrust Earth-Orbit Transfers with Eclipsing. Journal of Spacecraft and Rockets, 2016, 53, 289-303.	1.3	67
46	Lavrentiev Phenomenon in hp Gaussian Quadrature Collocation Methods for Optimal Control. , 2016, , .		2
47	A Source Transformation via Operator Overloading Method for the Automatic Differentiation of Mathematical Functions in MATLAB. ACM Transactions on Mathematical Software, 2016, 42, 1-44.	1.6	11
48	State-defect constraint pairing graph coarsening method for Karushâ€“Kuhnâ€“Tucker matrices arising in orthogonal collocation methods for optimal control. Computational Optimization and Applications, 2016, 64, 793-819.	0.9	4
49	Aphmesh refinement method for optimal control. Optimal Control Applications and Methods, 2015, 36, 398-421.	1.3	144
50	Adaptive mesh refinement method for optimal control using nonsmoothness detection and mesh size reduction. Journal of the Franklin Institute, 2015, 352, 4081-4106.	1.9	101
51	Minimum-Time Trajectory Optimization of Multiple Revolution Low-Thrust Earth-Orbit Transfers. Journal of Spacecraft and Rockets, 2015, 52, 711-727.	1.3	54
52	A novel approach to chance constrained optimal control problems. , 2015, , .		4
53	Utilizing the Algorithmic Differentiation Package ADiGator for Solving Optimal Control Problems Using Direct Collocation. , 2015, , .		5
54	Costate approximation in optimal control using integral Gaussian quadrature orthogonal collocation methods. Optimal Control Applications and Methods, 2015, 36, 381-397.	1.3	42

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55	Graph Coarsening Method for KKT Matrices Arising from Orthogonal Collocation Methods for Optimal Control Problems. , 2015, , .		0
56	GPOPS-II. ACM Transactions on Mathematical Software, 2014, 41, 1-37.	1.6	781
57	An hp mesh refinement method for optimal control using discontinuity detection and mesh size reduction. , 2014, , .		21
58	Advances in Highly Constrained Multi-Phase Trajectory Generation using the General Pseudospectral Optimization Software (GPOPS). , 2013, , .		3
59	Costate estimation of state-inequality path constrained optimal control problems using collocation at Legendre-Gauss-Radau points. , 2013, , .		1
60	An efficient overloaded method for computing derivatives of mathematical functions in MATLAB. ACM Transactions on Mathematical Software, 2013, 39, 1-36.	1.6	42
61	Optimal Finite-Thrust Small Spacecraft Aeroassisted Orbital Transfer. Journal of Guidance, Control, and Dynamics, 2013, 36, 1802-1810.	1.6	20
62	Convergence of a Gauss Pseudospectral Method for Optimal Control. , 2012, , .		14
63	A Preliminary Analysis of Small Spacecraft Finite-Thrust Aeroassisted Orbital Transfer. , 2012, , .		1
64	Optimal Trajectory and Control Generation for Landing of Multiple Aircraft in the Presence of Obstacles. , 2012, , .		11
65	Optimal Control of a Surface Vehicle to Improve Underwater Vehicle Network Connectivity. Journal of Aerospace Computing, Information, and Communication, 2012, 9, 1-13.	0.8	8
66	Exploiting Sparsity in Direct Collocation Pseudospectral Methods for Solving Optimal Control Problems. Journal of Spacecraft and Rockets, 2012, 49, 354-377.	1.3	90
67	Direct Trajectory Optimization and Costate Estimation of State Inequality Path-Constrained Optimal Control Problems Using a Radau Pseudospectral Method. , 2012, , .		7
68	A Method for Computing Derivatives in MATLAB. , 2012, , .		0
69	Direct Trajectory Optimization Using a Variable Low-Order Adaptive Pseudospectral Method. Journal of Spacecraft and Rockets, 2011, 48, 433-445.	1.3	193
70	Costate Estimation using Multiple-Interval Pseudospectral Methods. Journal of Spacecraft and Rockets, 2011, 48, 856-866.	1.3	43
71	Costate Estimation Using Multiple-Interval Pseudospectral Methods. , 2011, , .		0
72	Direct trajectory optimization and costate estimation ofÂfinite-horizon and infinite-horizon optimal control problems using a Radau pseudospectral method. Computational Optimization and Applications, 2011, 49, 335-358.	0.9	293

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73	An hpâ€adaptive pseudospectral method for solving optimal control problems. Optimal Control Applications and Methods, 2011, 32, 476-502.	1.3	343
74	Pseudospectral methods for solving infinite-horizon optimal control problems. Automatica, 2011, 47, 829-837.	3.0	258
75	Minimum-Fuel Low-Earth Orbit Aeroassisted Orbital Transfer of Small Spacecraft. Journal of Spacecraft and Rockets, 2011, 48, 618-628.	1.3	30
76	A unified framework for the numerical solution of optimal control problems using pseudospectral methods. Automatica, 2010, 46, 1843-1851.	3.0	556
77	Algorithm 902. ACM Transactions on Mathematical Software, 2010, 37, 1-39.	1.6	476
78	Gauss Pseudospectral Method for Solving Infinite-Horizon Optimal Control Problems. , 2010, , .		11
79	Aeroassisted Orbital Transfer Trajectory Optimization Considering Thermal Protection System Mass. Journal of Guidance, Control, and Dynamics, 2009, 32, 927-938.	1.6	22
80	Direct Trajectory Optimization and Costate Estimation of General Optimal Control Problems Using a Radau Pseudospectral Method. , 2009, , .		26
81	Optimal Control of an Underwater Sensor Network for Cooperative Target Tracking. IEEE Journal of Oceanic Engineering, 2009, 34, 678-697.	2.1	46
82	Comparison of Global and Local Collocation Methods for Optimal Control. Journal of Guidance, Control, and Dynamics, 2008, 31, 432-436.	1.6	31
83	Constrained Trajectory Optimization Using Pseudospectral Methods. , 2008, , .		36
84	An Initial Examination of Using Pseudospectral Methods for Timescale and Differential Geometric Analysis of Nonlinear Optimal Control Problems. , 2008, , .		1
85	Optimal Reconfiguration of Spacecraft Formations Using the Gauss Pseudospectral Method. Journal of Guidance, Control, and Dynamics, 2008, 31, 689-698.	1.6	162
86	A Comparison between Global and Local Orthogonal Collocation Methods for Solving Optimal Control Problems. Proceedings of the American Control Conference, 2007, , .	0.0	6
87	Optimal configuration of tetrahedral spacecraft formations. Journal of the Astronautical Sciences, 2007, 55, 141-169.	0.8	34
88	Direct Trajectory Optimization and Costate Estimation via an Orthogonal Collocation Method. , 2006, , .		8
89	Direct Trajectory Optimization and Costate Estimation via an Orthogonal Collocation Method. Journal of Guidance, Control, and Dynamics, 2006, 29, 1435-1440.	1.6	517
90	Extension of a Pseudospectral Legendre Method to Non-Sequential Multiple-Phase Optimal Control Problems. , 2003, , .		22

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91	Riccati Dichotomic Basis Method for Solving Hypersensitive Optimal Control Problems. Journal of Guidance, Control, and Dynamics, 2003, 26, 185-189.	1.6	8
92	Numerical optimization study of multiple-pass aeroassisted orbital transfer. Optimal Control Applications and Methods, 2002, 23, 215-238.	1.3	31
93	Eigenvector approximate dichotomic basis method for solving hyper-sensitive optimal control problems. Optimal Control Applications and Methods, 2000, 21, 1-19.	1.3	31
94	Application of a Dichotomic Basis Method to Performance Optimization of Supersonic Aircraft. Journal of Guidance, Control, and Dynamics, 2000, 23, 570-573.	1.6	12
95	Minimum-Variance Estimation of Reentry Debris Trajectories. Journal of Spacecraft and Rockets, 2000, 37, 366-373.	1.3	13
96	Eigenvector approximate dichotomic basis method for solving hyper- sensitive optimal control problems. Optimal Control Applications and Methods, 1999, 20, 59-77.	1.3	11
97	Entry Trajectory Tracking Law via Feedback Linearization. Journal of Guidance, Control, and Dynamics, 1998, 21, 726-732.	1.6	118
98	Lebesgue constants arising in a class of collocation methods. IMA Journal of Numerical Analysis, 0, , drw060.	1.5	6
99	Modified Legendreâ€“Gaussâ€“Radau Collocation Method for Optimal Control Problems with Nonsmooth Solutions. Journal of Optimization Theory and Applications, 0, , 1.	0.8	4