

# Didier Henrion

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/830639/publications.pdf>

Version: 2024-02-01

123  
papers

3,139  
citations

257101

24  
h-index

189595

50  
g-index

123  
all docs

123  
docs citations

123  
times ranked

1579  
citing authors

#	ARTICLE	IF	CITATIONS
1	GloptiPoly 3: moments, optimization and semidefinite programming. Optimization Methods and Software, 2009, 24, 761-779.	1.6	376
2	GloptiPoly. ACM Transactions on Mathematical Software, 2003, 29, 165-194.	1.6	285
3	Convex Computation of the Region of Attraction of Polynomial Control Systems. IEEE Transactions on Automatic Control, 2014, 59, 297-312.	3.6	196
4	Nonlinear Optimal Control via Occupation Measures and LMI-Relaxations. SIAM Journal on Control and Optimization, 2008, 47, 1643-1666.	1.1	173
5	Detecting Global Optimality and Extracting Solutions in GloptiPoly. Lecture Notes in Control and Information Sciences, 0, , 293-310.	0.6	154
6	Stabilization via Nonsmooth, Nonconvex Optimization. IEEE Transactions on Automatic Control, 2006, 51, 1760-1769.	3.6	119
7	Quadratic separation for feedback connection of an uncertain matrix and an implicit linear transformation. Automatica, 2007, 43, 795-804.	3.0	113
8	Convex Computation of the Maximum Controlled Invariant Set For Polynomial Control Systems. SIAM Journal on Control and Optimization, 2014, 52, 2944-2969.	1.1	91
9	Polynomial LPV synthesis applied to turbofan engines. Control Engineering Practice, 2010, 18, 1077-1083.	3.2	89
10	Fixed-Order Robust $H_{\infty}$ Controller Design With Regional Pole Assignment. IEEE Transactions on Automatic Control, 2007, 52, 1959-1963.	3.6	84
11	Globally Optimal Estimates for Geometric Reconstruction Problems. International Journal of Computer Vision, 2007, 74, 3-15.	10.9	61
12	Positive polynomial matrices and improved LMI robustness conditions. Automatica, 2003, 39, 1479-1485.	3.0	60
13	Control of linear systems subject to input constraints: a polynomial approach. Automatica, 2001, 37, 597-604.	3.0	57
14	LMI relaxations for robust stability of linear systems with saturating controls. Automatica, 1999, 35, 1599-1604.	3.0	55
15	Hand-eye and robot-world calibration by global polynomial optimization. , 2014, , .		54
16	LPV MODELING OF A TURBOFAN ENGINE. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 526-531.	0.4	52
17	D-stability of polynomial matrices. International Journal of Control, 2001, 74, 845-856.	1.2	48
18	An LMI condition for robust stability of polynomial matrix polytopes. Automatica, 2001, 37, 461-468.	3.0	45

#	ARTICLE	IF	CITATIONS
19	Inner approximations of the region of attraction for polynomial dynamical systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 534-539.	0.4	39
20	Rank-one LMI approach to simultaneous stabilization of linear systems. Systems and Control Letters, 1999, 38, 79-89.	1.3	38
21	Strong Stability of Neutral Equations with an Arbitrary Delay Dependency Structure. SIAM Journal on Control and Optimization, 2009, 48, 763-786.	1.1	38
22	Strong duality in Lasserre's hierarchy for polynomial optimization. Optimization Letters, 2016, 10, 3-10.	0.9	32
23	Inner Approximations for Polynomial Matrix Inequalities and Robust Stability Regions. IEEE Transactions on Automatic Control, 2012, 57, 1456-1467.	3.6	31
24	Exact Algorithms for Linear Matrix Inequalities. SIAM Journal on Optimization, 2016, 26, 2512-2539.	1.2	31
25	Minimizing the sum of many rational functions. Mathematical Programming Computation, 2016, 8, 83-111.	3.2	28
26	Projection Methods in Conic Optimization. Profiles in Operations Research, 2012, , 565-600.	0.3	27
27	Approximate optimal designs for multivariate polynomial regression. Annals of Statistics, 2019, 47, .	1.4	27
28	LMIs for constrained polynomial interpolation with application in trajectory planning. Systems and Control Letters, 2006, 55, 473-477.	1.3	23
29	Guest Editorial: Special Issue on Positive Polynomials in Control. IEEE Transactions on Automatic Control, 2009, 54, 935-936.	3.6	22
30	POSITIVE POLYNOMIAL MATRICES AND IMPROVED LMI ROBUSTNESS CONDITIONS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 169-174.	0.4	21
31	Simple approximations of semialgebraic sets and their applications to control. Automatica, 2017, 78, 110-118.	3.0	21
32	Low-order robust controller design for interval plants. International Journal of Control, 2001, 74, 1-9.	1.2	20
33	Nonlinear optimal control synthesis via occupation measures. , 2008, , .		20
34	Advanced LMI based analysis and design for Acrobot walking. International Journal of Control, 2010, 83, 1641-1652.	1.2	19
35	Projection methods for conic feasibility problems: applications to polynomial sum-of-squares decompositions. Optimization Methods and Software, 2011, 26, 23-46.	1.6	17
36	Inner Approximations of the Maximal Positively Invariant Set for Polynomial Dynamical Systems. , 2019, 3, 733-738.		17

#	ARTICLE	IF	CITATIONS
37	An algorithm for polynomial matrix factor extraction. International Journal of Control, 2000, 73, 686-695.	1.2	16
38	Contracting Optimally an Interval Matrix without Loosing Any Positive Semi-Definite Matrix Is a Tractable Problem. Reliable Computing, 2005, 11, 1-17.	0.8	16
39	Detecting rigid convexity of bivariate polynomials. Linear Algebra and Its Applications, 2010, 432, 1218-1233.	0.4	16
40	Semidefinite Representation of Convex Hulls of Rational Varieties. Acta Applicandae Mathematicae, 2011, 115, 319-327.	0.5	16
41	Measures and LMIs for Impulsive Nonlinear Optimal Control. IEEE Transactions on Automatic Control, 2014, 59, 1374-1379.	3.6	16
42	Controller design and value function approximation for nonlinear dynamical systems. Automatica, 2016, 67, 54-66.	3.0	16
43	Semidefinite Approximations of Projections and Polynomial Images of SemiAlgebraic Sets. SIAM Journal on Optimization, 2015, 25, 2143-2164.	1.2	15
44	An improved Toeplitz algorithm for polynomial matrix null-space computation. Applied Mathematics and Computation, 2009, 207, 256-272.	1.4	13
45	Convex computation of the maximum controlled invariant set for discrete-time polynomial control systems. , 2013, , .		13
46	Convex computation of the region of attraction of polynomial control systems?. , 2013, , .		13
47	Modal occupation measures and LMI relaxations for nonlinear switched systems control. Automatica, 2016, 64, 143-154.	3.0	13
48	Symmetric Matrix Polynomial Equation: Interpolation Results. Automatica, 1998, 34, 811-824.	3.0	12
49	Positive trigonometric polynomials for strong stability of difference equations. Automatica, 2012, 48, 2207-2212.	3.0	12
50	Rank-Constrained Fundamental Matrix Estimation by Polynomial Global Optimization Versus the Eight-Point Algorithm. Journal of Mathematical Imaging and Vision, 2015, 53, 42-60.	0.8	12
51	Convergence rates of moment-sum-of-squares hierarchies for optimal control problems. Systems and Control Letters, 2017, 100, 1-5.	1.3	12
52	Optimization on linear matrix inequalities for polynomial systems control. Les Cours Du CIRM, 2013, 3, 1-44.	0.4	12
53	Robust Pole Placement for Second-Order Systems: An LMI Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 419-424.	0.4	11
54	Optimal switching control design for polynomial systems: an LMI approach. , 2013, , .		11

#	ARTICLE	IF	CITATIONS
55	Set approximation via minimum-volume polynomial sublevel sets. , 2013, , .		11
56	Peak Estimation Recovery and Safety Analysis. , 2021, 5, 1982-1987.		11
57	Approximating regions of attraction of a sparse polynomial differential system. IFAC-PapersOnLine, 2020, 53, 3266-3271.	0.5	11
58	Approximating Pareto curves using semidefinite relaxations. Operations Research Letters, 2014, 42, 432-437.	0.5	10
59	Controller design and region of attraction estimation for nonlinear dynamical systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 2310-2316.	0.4	10
60	Semi-algebraic Approximation Using Christoffelâ€™Darboux Kernel. Constructive Approximation, 2021, 54, 391-429.	1.8	10
61	Measures and LMI for impulsive optimal control with applications to space rendezvous problems. , 2012, , .		9
62	Real root finding for determinants of linear matrices. Journal of Symbolic Computation, 2016, 74, 205-238.	0.5	9
63	Rank-one LMI Approach to Stability of 2-D Polynomial Matrices. Multidimensional Systems and Signal Processing, 2001, 12, 33-48.	1.7	8
64	Finding largest small polygons with GloptiPoly. Journal of Global Optimization, 2013, 56, 1017-1028.	1.1	8
65	Moment LMI approach to LTV impulsive control. , 2013, , .		8
66	Mean Squared Error Minimization for Inverse Moment Problems. Applied Mathematics and Optimization, 2014, 70, 83-110.	0.8	8
67	Optimal control problems with oscillations, concentrations and discontinuities. Automatica, 2019, 103, 159-165.	3.0	8
68	SPECTRA â€™ a Maple library for solving linear matrix inequalities in exact arithmetic. Optimization Methods and Software, 2019, 34, 62-78.	1.6	8
69	Convex Computation of Extremal Invariant Measures of Nonlinear Dynamical Systems and Markov Processes. Journal of Nonlinear Science, 2021, 31, 1.	1.0	8
70	A Toeplitz algorithm for polynomial J-spectral factorization. Automatica, 2006, 42, 1085-1093.	3.0	7
71	Optimal Low-Frequency Filter Design for Uncertain 2-1 Sigma-Delta Modulators. IEEE Signal Processing Letters, 2009, 16, 362-365.	2.1	7
72	Semidefinite programming for optimizing convex bodies under width constraints. Optimization Methods and Software, 2012, 27, 1073-1099.	1.6	7

#	ARTICLE	IF	CITATIONS
73	Convex inner approximations of nonconvex semialgebraic sets applied to fixed-order controller design. <i>International Journal of Control</i> , 2012, 85, 1083-1092.	1.2	7
74	Measures and LMI for space launcher robust control validation. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2012, 45, 236-241.	0.4	7
75	Credible autocoding of convex optimization algorithms. <i>Optimization and Engineering</i> , 2016, 17, 781-812.	1.3	7
76	Semi-definite relaxations for optimal control problems with oscillation and concentration effects. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2017, 23, 95-117.	0.7	6
77	Maximal Positively Invariant Set Determination for Transient Stability Assessment in Power Systems. , 2019, , .		6
78	Globally Optimal Solution to Inverse Kinematics of 7DOF Serial Manipulator. <i>IEEE Robotics and Automation Letters</i> , 2022, 7, 6012-6019.	3.3	6
79	Peak Estimation for Uncertain and Switched Systems. , 2021, , .		6
80	H <sub>2</sub> Optimal Control Via Pole Placement 1. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2000, 33, 711-716.	0.4	5
81	An LMI Condition for Robust Stability of Polynomial Matrix Polytopes 1. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2000, 33, 13-18.	0.4	5
82	Robust Filter Design for Uncertain 2-1 Sigma-Delta Modulators via the Central Polynomial Method. <i>IEEE Signal Processing Letters</i> , 2008, 15, 737-740.	2.1	5
83	Estimation of consistent parameter sets for continuous-time nonlinear systems using occupation measures and LMI relaxations. , 2013, , .		5
84	Design of Marx generators as a structured eigenvalue assignment. <i>Automatica</i> , 2014, 50, 2709-2717.	3.0	5
85	Real Root Finding for Rank Defects in Linear Hankel Matrices. , 2015, , .		5
86	Symmetries and analytical solutions of the Hamiltonâ€™Jacobiâ€™Bellman equation for a class of optimal control problems. <i>Optimal Control Applications and Methods</i> , 2016, 37, 749-764.	1.3	5
87	Convergence rates of moment-sum-of-squares hierarchies for volume approximation of semialgebraic sets. <i>Optimization Letters</i> , 2018, 12, 435-442.	0.9	5
88	Parabolic set simulation for reachability analysis of linear time-invariant systems with integral quadratic constraint. <i>European Journal of Control</i> , 2021, 58, 152-167.	1.6	5
89	Plane geometry and convexity of polynomial stability regions. , 2008, , .		4
90	Hermite matrix in Lagrange basis for scaling static output feedback polynomial matrix inequalities. <i>International Journal of Control</i> , 2010, 83, 2494-2505.	1.2	4

#	ARTICLE	IF	CITATIONS
91	Moment and SDP relaxation techniques for smooth approximations of problems involving nonlinear differential equations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 10887-10892.	0.4	4
92	Moments and convex optimization for analysis and control of nonlinear PDEs. Handbook of Numerical Analysis, 2022, , 339-366.	0.9	4
93	Numerical Methods For Polynomial Matrix Rank Evaluation $\hat{\alpha}$ . IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1998, 31, 369-374.	0.4	3
94	LMIS for Linear Systems Control by Polynomial Methods 1. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 733-738.	0.4	3
95	Polynomial Matrices, LMIs and Static Output Feedback. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 183-188.	0.4	3
96	Rank-One LMI Approach to Robust Stability of Polynomial Matrices. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 327-332.	0.4	3
97	Exact algorithms for semidefinite programs with degenerate feasible set. Journal of Symbolic Computation, 2021, 104, 942-959.	0.5	3
98	Exploiting Sparsity for Semi-Algebraic Set Volume Computation. Foundations of Computational Mathematics, 0, , 1.	1.5	3
99	On Convexity of the Frequency Response of a Stable Polynomial. IEEE Transactions on Automatic Control, 2008, 53, 1062-1066.	3.6	2
100	A hierarchy of LMI inner approximations of the set of stable polynomials. Automatica, 2011, 47, 1455-1460.	3.0	2
101	Positive Polynomial Matrices for LPV Controller Synthesis. Lecture Notes in Control and Information Sciences, 2013, , 87-96.	0.6	2
102	Parabolic Set Simulation for Reachability Analysis of Linear Time Invariant Systems with Integral Quadratic Constraint. , 2019, , .		2
103	Measures and LMIs for Adaptive Control Validation. , 2019, , .		2
104	Dual optimal design and the Christoffel-Darboux polynomial. Optimization Letters, 2021, 15, 3-8.	0.9	2
105	Global optimality in minimum compliance topology optimization of frames and shells by moment-sum-of-squares hierarchy. Structural and Multidisciplinary Optimization, 2021, 64, 1963.	1.7	2
106	Cone-Copositive Lyapunov Functions for Complementarity Systems: Converse Result and Polynomial Approximation. IEEE Transactions on Automatic Control, 2022, 67, 1253-1268.	3.6	2
107	ON OPTIMUM DESIGN OF FRAME STRUCTURES. Acta Polytechnica CTU Proceedings, 0, 26, 117-125.	0.3	2
108	LMIs and Polynomial Methods in Control: Illustrative Examples. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 219-224.	0.4	1

#	ARTICLE	IF	CITATIONS
109	Ellipsoidal approximation of the stability domain of a polynomial. , 2001, , .		1
110	Polynomial matrices and recursive QR factorization. , 2001, , .		1
111	Polynomial methods and LMI optimization: New robust control functions for the polynomial toolbox 3.0. , 2003, , .		1
112	A Toeplitz Algorithm for Polynomial J-Spectral Factorization. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 363-368.	0.4	1
113	Chapter 10: Conic Linear Optimization for Nonlinear Optimal Control. , 2017, , 121-133.		1
114	Exact Algorithms for Semidefinite Programs with Degenerate Feasible Set. , 2018, , .		1
115	Measures and LMIs for Validation of an Aircraft with MRAC and Uncertain Actuator Dynamics. , 2021, , .		1
116	Measures and LMIs for Lateral F-16 MRAC Validation. , 2020, , .		1
117	Computation of Lyapunov Functions under State Constraints using Semidefinite Programming Hierarchies. IFAC-PapersOnLine, 2020, 53, 6281-6286.	0.5	1
118	Graph Recovery from Incomplete Moment Information. Constructive Approximation, 0, , 1.	1.8	1
119	Mini-Workshop: Applied Koopmanism. Oberwolfach Reports, 2016, 13, 297-340.	0.0	0
120	Real root finding for low rank linear matrices. Applicable Algebra in Engineering, Communications and Computing, 2020, 31, 101-133.	0.3	0
121	Peak Estimation Recovery and Safety Analysis. , 2021, , .		0
122	On computing the $H_{\infty}$ -norm of a polynomial matrix fraction. , 2001, , .		0
123	InÉgalitÉs matricielles quadratiques et stabilitÉ des polynômes. Journal European Des Systemes Automatisés, 2006, 40, 163-176.	0.3	0