

# Michael L Overton

## List of Publications by Year in descending order

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70  
papers

3,902  
citations

201385

27  
h-index

128067

60  
g-index

74  
all docs

74  
docs citations

74  
times ranked

1931  
citing authors

#	ARTICLE	IF	CITATIONS
1	Primal-Dual Interior-Point Methods for Semidefinite Programming: Convergence Rates, Stability and Numerical Results. <i>SIAM Journal on Optimization</i> , 1998, 8, 746-768.	1.2	339
2	A Robust Gradient Sampling Algorithm for Nonsmooth, Nonconvex Optimization. <i>SIAM Journal on Optimization</i> , 2005, 15, 751-779.	1.2	332
3	Nonsmooth optimization via quasi-Newton methods. <i>Mathematical Programming</i> , 2013, 141, 135-163.	1.6	234
4	The reduced density matrix method for electronic structure calculations and the role of three-index representability conditions. <i>Journal of Chemical Physics</i> , 2004, 120, 2095-2104.	1.2	220
5	Projected Hessian Updating Algorithms for Nonlinearly Constrained Optimization. <i>SIAM Journal on Numerical Analysis</i> , 1985, 22, 821-850.	1.1	197
6	Eigenvalue optimization. <i>Acta Numerica</i> , 1996, 5, 149-190.	6.3	192
7	On Minimizing the Maximum Eigenvalue of a Symmetric Matrix. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1988, 9, 256-268.	0.7	180
8	Large-Scale Optimization of Eigenvalues. <i>SIAM Journal on Optimization</i> , 1992, 2, 88-120.	1.2	166
9	Stabilization via Nonsmooth, Nonconvex Optimization. <i>IEEE Transactions on Automatic Control</i> , 2006, 51, 1760-1769.	3.6	119
10	On the Lidskii–Vishik–Lyusternik Perturbation Theory for Eigenvalues of Matrices with Arbitrary Jordan Structure. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1997, 18, 793-817.	0.7	118
11	An Efficient Primal-Dual Interior-Point Method for Minimizing a Sum of Euclidean Norms. <i>SIAM Journal of Scientific Computing</i> , 2000, 22, 243-262.	1.3	117
12	Complementarity and nondegeneracy in semidefinite programming. <i>Mathematical Programming</i> , 1997, 77, 111-128.	1.6	111
13	Multiobjective Robust Control with HIFOO 2.0. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2009, 42, 144-149.	0.4	102
14	A quadratically convergent method for minimizing a sum of euclidean norms. <i>Mathematical Programming</i> , 1983, 27, 34-63.	1.6	95
15	On the Optimal Design of Columns Against Buckling. <i>SIAM Journal on Mathematical Analysis</i> , 1992, 23, 287-325.	0.9	89
16	On the Sum of the Largest Eigenvalues of a Symmetric Matrix. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1992, 13, 41-45.	0.7	85
17	A Sequential Quadratic Programming Algorithm for Nonconvex, Nonsmooth Constrained Optimization. <i>SIAM Journal on Optimization</i> , 2012, 22, 474-500.	1.2	82
18	Computing Limit Loads by Minimizing a Sum of Norms. <i>SIAM Journal of Scientific Computing</i> , 1998, 19, 1046-1062.	1.3	71

#	ARTICLE	IF	CITATIONS
19	Second Derivatives for Optimizing Eigenvalues of Symmetric Matrices. SIAM Journal on Matrix Analysis and Applications, 1995, 16, 697-718.	0.7	68
20	A BFGS-SQP method for nonsmooth, nonconvex, constrained optimization and its evaluation using relative minimization profiles. Optimization Methods and Software, 2017, 32, 148-181.	1.6	67
21	Two numerical methods for optimizing matrix stability. Linear Algebra and Its Applications, 2002, 351-352, 117-145.	0.4	62
22	Fast Algorithms for the Approximation of the Pseudospectral Abscissa and Pseudospectral Radius of a Matrix. SIAM Journal on Matrix Analysis and Applications, 2011, 32, 1166-1192.	0.7	56
23	Large-scale semidefinite programs in electronic structure calculation. Mathematical Programming, 2007, 109, 553-580.	1.6	55
24	On Minimizing the Special Radius of a Nonsymmetric Matrix Function: Optimality Conditions and Duality Theory. SIAM Journal on Matrix Analysis and Applications, 1988, 9, 473-498.	0.7	43
25	Fast Approximation of the $H_\infty$ Norm via Optimization over Spectral Value Sets. SIAM Journal on Matrix Analysis and Applications, 2013, 34, 709-737.	0.7	40
26	Variational analysis of non-Lipschitz spectral functions. , 2001, 90, 317.		39
27	Gradient Sampling Methods for Nonsmooth Optimization. , 2020, , 201-225.		37
28	Algorithms for the computation of the pseudospectral radius and the numerical radius of a matrix. IMA Journal of Numerical Analysis, 2005, 25, 648-669.	1.5	34
29	First-Order Perturbation Theory for Eigenvalues and Eigenvectors. SIAM Review, 2020, 62, 463-482.	4.2	33
30	Fixed-order $H^\infty$ controller design via HIFOO, a specialized nonsmooth optimization package. , 2008, , .		31
31	Optimal Stability and Eigenvalue Multiplicity. Foundations of Computational Mathematics, 2001, 1, 205-225.	1.5	29
32	Differential properties of the spectral abscissa and the spectral radius for analytic matrix-valued mappings. Nonlinear Analysis: Theory, Methods & Applications, 1994, 23, 467-488.	0.6	27
33	Numerical investigation of Crouzeix's conjecture. Linear Algebra and Its Applications, 2018, 542, 225-245.	0.4	27
34	Stability theory for dissipatively perturbed hamiltonian systems. Communications on Pure and Applied Mathematics, 1995, 48, 583-610.	1.2	26
35	Narrowing the difficulty gap for the Celis-Dennis-Tapia problem. Mathematical Programming, 2015, 151, 459-476.	1.6	25
36	$H^\infty$ strong stabilization via HIFOO, a package for fixed-order controller design. , 2008, , .		23

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37	On Nesterov's nonsmooth Chebyshev-Rosenbrock functions. <i>Nonlinear Analysis: Theory, Methods &amp; Applications</i> , 2012, 75, 1282-1289.	0.6	22
38	Two Heuristics for the Euclidean Steiner Tree Problem. <i>Journal of Global Optimization</i> , 1998, 13, 95-106.	1.1	21
39	Stable perturbations of nonsymmetric matrices. <i>Linear Algebra and Its Applications</i> , 1992, 171, 249-273.	0.4	20
40	Hybrid expansion contraction: a robust scaleable method for approximating the $H$ norm. <i>IMA Journal of Numerical Analysis</i> , 2016, 36, 985-1014.	1.5	20
41	Perturbing the Critically Damped Wave Equation. <i>SIAM Journal on Applied Mathematics</i> , 1996, 56, 1353-1362.	0.8	19
42	Characterization and construction of the nearest defective matrix via coalescence of pseudospectral components. <i>Linear Algebra and Its Applications</i> , 2011, 435, 494-513.	0.4	16
43	Design of Hermite Subdivision Schemes Aided by Spectral Radius Optimization. <i>SIAM Journal of Scientific Computing</i> , 2003, 25, 643-656.	1.3	14
44	Explicit Solutions for Root Optimization of a Polynomial Family With One Affine Constraint. <i>IEEE Transactions on Automatic Control</i> , 2012, 57, 3078-3089.	3.6	14
45	Variational Analysis of the Abscissa Mapping for Polynomials via the Gauss-Lucas Theorem. <i>Journal of Global Optimization</i> , 2004, 28, 259-268.	1.1	13
46	An Efficient Algorithm for Computing the Generalized Null Space Decomposition. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2015, 36, 38-54.	0.7	13
47	Variational Analysis of the Abscissa Mapping for Polynomials. <i>SIAM Journal on Control and Optimization</i> , 2001, 39, 1651-1676.	1.1	12
48	Numerical methods for solving inverse eigenvalue problems. <i>Lecture Notes in Mathematics</i> , 1983, , 212-226.	0.1	11
49	A Hybrid Algorithm for Optimizing Eigenvalues of Symmetric Definite Pencils. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1994, 15, 1141-1156.	0.7	11
50	Robust stability at the Swallowtail singularity. <i>Frontiers in Physics</i> , 2013, 1, .	1.0	11
51	Fixed Low-Order Controller Design and $H_2$ Optimization for Large-Scale Dynamical Systems. <i>IFAC-PapersOnLine</i> , 2015, 48, 25-30.	0.5	10
52	Analysis of the gradient method with an Armijo-Wolfe line search on a class of non-smooth convex functions. <i>Optimization Methods and Software</i> , 2020, 35, 223-242.	1.6	9
53	Variational analysis of functions of the roots of polynomials. <i>Mathematical Programming</i> , 2005, 104, 263-292.	1.6	8
54	Optimizing the asymptotic convergence rate of the Diaconis-Holmes-Neal sampler. <i>Advances in Applied Mathematics</i> , 2007, 38, 382-403.	0.4	7

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55	Some Regularity Results for the Pseudospectral Abcissa and Pseudospectral Radius of a Matrix. SIAM Journal on Optimization, 2012, 22, 281-285.	1.2	6
56	Variational analysis of the Crouzeix ratio. Mathematical Programming, 2017, 164, 229-243.	1.6	6
57	Analysis of limited-memory BFGS on a class of nonsmooth convex functions. IMA Journal of Numerical Analysis, 2021, 41, 1-27.	1.5	6
58	Extending Mehrotra and Gondzio higher order methods to mixed semidefinite-quadratic-linear programming. Optimization Methods and Software, 1999, 11, 67-90.	1.6	5
59	Canonical incidence matrices of graphs. BIT Numerical Mathematics, 1979, 19, 271-273.	1.0	4
60	Low-Order Control Design using a Reduced-Order Model with a Stability Constraint on the Full-Order Model. , 2018, , .		4
61	An Algorithm to Compute $\{\text{oldmath}\{\$Sep_{\{\lambda\}}\}\}$ . SIAM Journal on Matrix Analysis and Applications, 2006, 28, 348-359.	0.7	3
62	Explicit solutions for root optimization of a polynomial family. , 2010, , .		2
63	Variational Analysis of the Spectral Abcissa at a Matrix with a Nongeneric Multiple Eigenvalue. Set-Valued and Variational Analysis, 2014, 22, 19-43.	0.5	2
64	On properties of univariate max functions at local maximizers. Optimization Letters, 2022, 16, 2527-2541.	0.9	2
65	Polynomial Stabilization with Bounds on the Controller Coefficients $\hat{a} - \hat{a} - \#\#$ . IFAC-PapersOnLine, 2015, 48, 382-387.	0.5	1
66	Polynomial root radius optimization with affine constraints. Mathematical Programming, 2017, 165, 509-528.	1.6	1
67	Finding the strongest stable massless column with a follower load and relocatable concentrated masses. Quarterly Journal of Mechanics and Applied Mathematics, 2021, 74, 223-250.	0.5	1
68	Local minimizers of the Crouzeix ratio: a nonsmooth optimization case study. Calcolo, 2022, 59, .	0.6	1
69	Numerical Computation: The State of the Art. Annals of the New York Academy of Sciences, 1990, 607, 116-127.	1.8	0
70	Change of Editorship. IMA Journal of Numerical Analysis, 2007, 27, i-i.	1.5	0