# Jonathan D Hauenstein

List of Publications by Year
in descending order

| 111 papers | 1,810 citations | 236925<br>25 h-index | 361022<br>35 g-index |
|---|---|---|---|
| 116 all docs | 116 docs citations | 116 times ranked | 571 citing authors |

| # | ARTICLE | IF | CITATIONS |
|---|---------|----|-----------|
| 1 | Using Monodromy to Statistically Estimate the Number of Solutions. Springer Proceedings in Advanced Robotics, 2022, , 37-46. | 1.3 | 1 |
| 2 | On the Equations Defining Some Hilbert Schemes. Vietnam Journal of Mathematics, 2022, 50, 487-500. | 0.8 | 1 |
| 3 | Binomiality Testing and Computing Sparse Polynomials via Witness Sets. Vietnam Journal of Mathematics, 2022, 50, 653-678. | 0.8 | 3 |
| 4 | On Computing the Nonlinearity Interval in Parametric Semidefinite Optimization. Mathematics of Operations Research, 2022, 47, 2989-3009. | 1.3 | 2 |
| 5 | Computing saddle graphs via homotopy continuation for the approximate synthesis of mechanisms. Mechanism and Machine Theory, 2022, 176, 104932. | 4.5 | 1 |
| 6 | A singular value homotopy for finding critical parameter values. Applied Numerical Mathematics, 2021, 161, 233-243. | 2.1 | 1 |
| 7 | The Loss Surface Of Deep Linear Networks Viewed Through The Algebraic Geometry Lens. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2021, PP, 1-1. | 13.9 | 6 |
| 8 | A General Method for Constructing Planar Cognate Mechanisms. Journal of Mechanisms and Robotics, 2021, 13, . | 2.2 | 2 |
| 9 | On some configurations of oppositely charged trapped vortices in the plane. Advances in Applied Mathematics, 2021, 124, 102099. | 0.7 | 0 |
| 10 | Numerical algebraic geometry and semidefinite programming. Results in Applied Mathematics, 2021, 11, 100166. | 1.3 | 4 |
| 11 | A numerical toolkit for multiprojective varieties. Mathematics of Computation, 2021, 90, 413-440. | 2.1 | 4 |
| 12 | Designing Rotary Linkages for Polar Motions. , 2021, , . | | 3 |
| 13 | Excess intersections and numerical irreducible decompositions. , 2021, , . | | 0 |
| 14 | Probabilistic Saturations and Alt's Problem. Experimental Mathematics, 2020, , 1-13. | 0.7 | 2 |
| 15 | TRPLP – Trifocal Relative Pose From Lines at Points. , 2020, , . | | 9 |
| 16 | Real monodromy action. Applied Mathematics and Computation, 2020, 373, 124983. | 2.2 | 1 |
| 17 | Decomposing the Parameter Space of Biological Networks via a Numerical Discriminant Approach. Communications in Computer and Information Science, 2020, , 114-131. | 0.5 | 1 |
| 18 | Multiprojective witness sets and a trace test. Advances in Geometry, 2020, 20, 297-318. | 0.4 | 14 |

| # | ARTICLE | IF | CITATIONS |
|---|---------|-----|-----------|
| 19 | Evaluating and Differentiating a Polynomial Using a Pseudo-witness Set. Lecture Notes in Computer Science, 2020, , 61-69. | 1.3 | 0 |
| 20 | Smooth points on semi-algebraic sets. ACM Communications in Computer Algebra, 2020, 54, 105-108. | 0.4 | 4 |
| 21 | Computing complex and real tropical curves using monodromy. Journal of Pure and Applied Algebra, 2019, 223, 5232-5250. | 0.6 | 0 |
| 22 | Using Numerical Insights to Improve Symbolic Computations. , 2019, , . | | 0 |
| 23 | Solving Critical Point Conditions for the Hamming and Taxicab Distances to Solution Sets of Polynomial Equations. , 2019, , . | | 0 |
| 24 | Sampling Real Algebraic Varieties for Topological Data Analysis. , 2019, , . | | 7 |
| 25 | Identifiability and numerical algebraic geometry. PLoS ONE, 2019, 14, e0226299. | 2.5 | 8 |
| 26 | Homotopy techniques for tensor decomposition and perfect identifiability. Journal Fur Die Reine Und Angewandte Mathematik, 2019, 2019, 1-22. | 0.9 | 29 |
| 27 | Identifiability and numerical algebraic geometry. , 2019, 14, e0226299. | | 0 |
| 28 | Identifiability and numerical algebraic geometry. , 2019, 14, e0226299. | | 0 |
| 29 | Identifiability and numerical algebraic geometry. , 2019, 14, e0226299. | | 0 |
| 30 | Identifiability and numerical algebraic geometry. , 2019, 14, e0226299. | | 0 |
| 31 | Locating and Counting Equilibria of the Kuramoto Model with Rank-One Coupling. SIAM Journal on Applied Algebra and Geometry, 2018, 2, 45-71. | 1.4 | 11 |
| 32 | Adaptive strategies for solving parameterized systems using homotopy continuation. Applied Mathematics and Computation, 2018, 332, 19-34. | 2.2 | 10 |
| 33 | Certifying solutions to overdetermined and singular polynomial systems over $\mathbb{Q}$. Journal of Symbolic Computation, 2018, 84, 147-171. | 0.8 | 14 |
| 34 | Numerical Computation of Galois Groups. Foundations of Computational Mathematics, 2018, 18, 867-890. | 2.5 | 13 |
| 35 | Optimal Configurations in Coverage Control with Polynomial Costs. IFAC-PapersOnLine, 2018, 51, 106-111. | 0.9 | 1 |
| 36 | Exceptional Stewart--Gough Platforms, Segre Embeddings, and the Special Euclidean Group. SIAM Journal on Applied Algebra and Geometry, 2018, 2, 179-205. | 1.4 | 2 |

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|---|---------|-----|-----------|
| 37 | polyTop: Software for Computing Topology of Smooth Real Surfaces. Lecture Notes in Computer Science, 2018, , 397-404. | 1.3 | 0 |
| 38 | Polynomials and the exponent of matrix multiplication. Bulletin of the London Mathematical Society, 2018, 50, 369-389. | 0.8 | 22 |
| 39 | Certifying Reality of Projections. Lecture Notes in Computer Science, 2018, , 200-208. | 1.3 | 2 |
| 40 | On deflation and multiplicity structure. Journal of Symbolic Computation, 2017, 83, 228-253. | 0.8 | 15 |
| 41 | Synthesis of three-revolute spatial chains for body guidance. Mechanism and Machine Theory, 2017, 110, 61-72. | 4.5 | 11 |
| 42 | A hybrid symbolic-numerical approach to the center-focus problem. Journal of Symbolic Computation, 2017, 82, 57-73. | 0.8 | 10 |
| 43 | Tensor decomposition and homotopy continuation. Differential Geometry and Its Applications, 2017, 55, 78-105. | 0.5 | 13 |
| 44 | Algorithm 976. ACM Transactions on Mathematical Software, 2017, 44, 1-30. | 2.9 | 11 |
| 45 | What is numerical algebraic geometry?. Journal of Symbolic Computation, 2017, 79, 499-507. | 0.8 | 15 |
| 46 | Unification and extension of intersection algorithms in numerical algebraic geometry. Applied Mathematics and Computation, 2017, 293, 226-243. | 2.2 | 10 |
| 47 | Certifying solutions to square systems of polynomial-exponential equations. Journal of Symbolic Computation, 2017, 79, 575-593. | 0.8 | 9 |
| 48 | Homotopies for Connected Components of Algebraic Sets with Application to Computing Critical Sets. Lecture Notes in Computer Science, 2017, , 107-120. | 1.3 | 2 |
| 49 | Certification Using Newton-Invariant Subspaces. Lecture Notes in Computer Science, 2017, , 34-50. | 1.3 | 1 |
| 50 | Computations and equations for Segre-Grassmann hypersurfaces. Portugaliae Mathematica, 2016, 73, 71-90. | 0.4 | 4 |
| 51 | Validating the Completeness of the Real Solution Set of a System of Polynomial Equations. , 2016, , . | | 8 |
| 52 | The Complete Solution of Altâ€"Burmester Synthesis Problems for Four-Bar Linkages. Journal of Mechanisms and Robotics, 2016, 8, . | 2.2 | 28 |
| 53 | Algebraic Geometric Method for Calculating Phase Equilibria from Fundamental Equations of State. Industrial &amp; Engineering Chemistry Research, 2016, 55, 11363-11370. | 3.7 | 0 |
| 54 | A Primal-Dual Formulation for Certifiable Computations in Schubert Calculus. Foundations of Computational Mathematics, 2016, 16, 941-963. | 2.5 | 4 |

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| 55 | Software for the Gale transform of fewnomial systems and a Descartes rule for fewnomials. Numerical Algorithms, 2016, 73, 281-304. | 1.9 | 1 |
| 56 | Numerically deciding the arithmetically Cohen–Macaulayness of a projective scheme. Journal of Symbolic Computation, 2016, 72, 128-146. | 0.8 | 16 |
| 57 | Complexity of Linear Circuits and Geometry. Foundations of Computational Mathematics, 2016, 16, 599-635. | 2.5 | 6 |
| 58 | Certified predictor–corrector tracking for Newton homotopies. Journal of Symbolic Computation, 2016, 74, 239-254. | 0.8 | 13 |
| 59 | Numerical Local Irreducible Decomposition. Lecture Notes in Computer Science, 2016, , 124-129. | 1.3 | 1 |
| 60 | Decomposing Solution Sets of Polynomial Systems Using Derivatives. Lecture Notes in Computer Science, 2016, , 127-135. | 1.3 | 5 |
| 61 | Real solutions to systems of polynomial equations and parameter continuation. Advances in Geometry, 2015, 15, 173-187. | 0.4 | 13 |
| 62 | Experiments on the Zeros of Harmonic Polynomials Using Certified Counting. Experimental Mathematics, 2015, 24, 133-141. | 0.7 | 12 |
| 63 | Algebraic geometrization of the Kuramoto model: Equilibria and stability analysis. Chaos, 2015, 25, 053103. | 2.5 | 45 |
| 64 | Global structure of curves from generalized unitarity cut of three-loop diagrams. Journal of High Energy Physics, 2015, 2015, 1. | 4.7 | 9 |
| 65 | Energy landscape of the finite-size mean-field 2-spin spherical model and topology trivialization. Physical Review E, 2015, 91, 022133. | 2.1 | 7 |
| 66 | A hybrid symbolic-numeric approach to exceptional sets of generically zero-dimensional systems. , 2015, , . |  | 1 |
| 67 | Certifying Isolated Singular Points and their Multiplicity Structure. , 2015, , . |  | 6 |
| 68 | Maximum Likelihood for Matrices with Rank Constraints. Journal of Algebraic Statistics, 2015, 5, . | 0.6 | 20 |
| 69 | Ana posterioricertification algorithm for Newton homotopies. , 2014, , . |  | 7 |
| 70 | Gauge-fixing on the lattice via orbifolding. Physical Review D, 2014, 90, . | 4.7 | 2 |
| 71 | Communication: Newton homotopies for sampling stationary points of potential energy landscapes. Journal of Chemical Physics, 2014, 141, 121104. | 3.0 | 15 |
| 72 | Certification and the potential energy landscape. Journal of Chemical Physics, 2014, 140, 224114. | 3.0 | 5 |

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| 73 | Newton Polytopes and Witness Sets. Mathematics in Computer Science, 2014, 8, 235-251. | 0.4 | 6 |
| 74 | Comparison of probabilistic algorithms for analyzing the components of an affine algebraic variety. Applied Mathematics and Computation, 2014, 231, 619-633. | 2.2 | 9 |
| 75 | A bootstrapping approach for computing multiple solutions of differential equations. Journal of Computational and Applied Mathematics, 2014, 258, 181-190. | 2.0 | 28 |
| 76 | Numerical Computation of the Hilbert Function and Regularity of a Zero Dimensional Scheme. Springer Proceedings in Mathematics and Statistics, 2014, , 235-250. | 0.2 | 7 |
| 77 | Bertini_real: Software for One- and Two-Dimensional Real Algebraic Sets. Lecture Notes in Computer Science, 2014, , 175-182. | 1.3 | 7 |
| 78 | On Computing a Cell Decomposition of a Real Surface Containing Infinitely Many Singularities. Lecture Notes in Computer Science, 2014, , 246-252. | 1.3 | 5 |
| 79 | A Note on Global Newton Iteration Over Archimedean and Non-Archimedean Fields. Lecture Notes in Computer Science, 2014, , 202-217. | 1.3 | 1 |
| 80 | Cell decomposition of almost smooth real algebraic surfaces. Numerical Algorithms, 2013, 63, 645-678. | 1.9 | 27 |
| 81 | A homotopy method based on WENO schemes for solving steady state problems of hyperbolic conservation laws. Journal of Computational Physics, 2013, 250, 332-346. | 3.8 | 32 |
| 82 | Numerical elimination and moduli space of vacua. Journal of High Energy Physics, 2013, 2013, 1. | 4.7 | 12 |
| 83 | Isosingular Sets and Deflation. Foundations of Computational Mathematics, 2013, 13, 371-403. | 2.5 | 47 |
| 84 | Numerically Computing Real Points on Algebraic Sets. Acta Applicandae Mathematicae, 2013, 125, 105-119. | 1.0 | 51 |
| 85 | Equations for Lower Bounds on Border Rank. Experimental Mathematics, 2013, 22, 372-383. | 0.7 | 36 |
| 86 | Membership tests for images of algebraic sets by linear projections. Applied Mathematics and Computation, 2013, 219, 6809-6818. | 2.2 | 27 |
| 87 | Numerically intersecting algebraic varieties via witness sets. Applied Mathematics and Computation, 2013, 219, 5730-5742. | 2.2 | 5 |
| 88 | Communication: Certifying the potential energy landscape. Journal of Chemical Physics, 2013, 138, 171101. | 3.0 | 16 |
| 89 | Computing steady-state solutions for a free boundary problem modeling tumor growth by Stokes equation. Journal of Computational and Applied Mathematics, 2013, 237, 326-334. | 2.0 | 28 |
| 90 | Recovering Exact Results from Inexact Numerical Data in Algebraic Geometry. Experimental Mathematics, 2013, 22, 38-50. | 0.7 | 23 |

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| 91 | Algorithm 921. ACM Transactions on Mathematical Software, 2012, 38, 1-20. | 2.9 | 84 |
| 92 | Energy-landscape analysis of the two-dimensional nearest-neighbor<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mi>Ï†</mml:mi><mml:mn>4</mml:mn></mml:msup></mml:math>model. Physical Review E, 2012, 85, 061103. | 2.1 | 33 |
| 93 | Continuation Along Bifurcation Branches for a Tumor Model with a Necrotic Core. Journal of Scientific Computing, 2012, 53, 395-413. | 2.3 | 33 |
| 94 | Algebraic boundaries of Hilbertâ€™s SOS cones. Compositio Mathematica, 2012, 148, 1717-1735. | 0.8 | 26 |
| 95 | Numerical algebraic geometry: a new perspective on gauge and string theories. Journal of High Energy Physics, 2012, 2012, 1. | 4.7 | 35 |
| 96 | Classification and complete solution of the kinetostatics of a compliant Stewartâ€"Gough platform. Mechanism and Machine Theory, 2012, 49, 177-186. | 4.5 | 10 |
| 97 | Bifurcation for a free boundary problem modeling the growth of a tumor with a necrotic core. Nonlinear Analysis: Real World Applications, 2012, 13, 694-709. | 1.7 | 47 |
| 98 | Regenerative cascade homotopies for solving polynomial systems. Applied Mathematics and Computation, 2011, 218, 1240-1246. | 2.2 | 29 |
| 99 | A three-dimensional steady-state tumor system. Applied Mathematics and Computation, 2011, 218, 2661-2669. | 2.2 | 31 |
| 100 | Efficient path tracking methods. Numerical Algorithms, 2011, 58, 451-459. | 1.9 | 30 |
| 101 | Mechanism mobility and a local dimension test. Mechanism and Machine Theory, 2011, 46, 1193-1206. | 4.5 | 38 |
| 102 | Multiple stable steady states of a reaction-diffusion model on zebrafish dorsal-ventral patterning. Discrete and Continuous Dynamical Systems - Series S, 2011, 4, 1413-1428. | 1.1 | 7 |
| 103 | Witness sets of projections. Applied Mathematics and Computation, 2010, 217, 3349-3354. | 2.2 | 55 |
| 104 | Regeneration homotopies for solving systems of polynomials. Mathematics of Computation, 2010, 80, 345-377. | 2.1 | 72 |
| 105 | A counter example to an ideal membership test. Advances in Geometry, 2010, 10, 557-559. | 0.4 | 1 |
| 106 | One-dimensional slow invariant manifolds for spatially homogenous reactive systems. Journal of Chemical Physics, 2009, 131, 024118. | 3.0 | 43 |
| 107 | A Numerical Local Dimension Test for Points on the Solution Set of a System of Polynomial Equations. SIAM Journal on Numerical Analysis, 2009, 47, 3608-3623. | 2.3 | 36 |
| 108 | Numerical Decomposition of the Rank-Deficiency Set of a Matrix of Multivariate Polynomials. Texts and Monographs in Symbolic Computation, 2009, , 55-77. | 0.4 | 8 |

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|---|---|---|---|
| 109 | Adaptive Multiprecision Path Tracking. SIAM Journal on Numerical Analysis, 2008, 46, 722-746. | 2.3 | 81 |
| 110 | Software for Numerical Algebraic Geometry: A Paradigm and Progress Towards its Implementation. The IMA Volumes in Mathematics and Its Applications, 2008, , 1-14. | 0.5 | 25 |
| 111 | Advances in the Theory of Planar Curve Cognates. Journal of Mechanisms and Robotics, 0, , 1-12. | 2.2 | 0 |