Weixun Deng

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Education

Ph.D. in Mathematics Texas A&M University, College Station, Texas Advisors: Prof. J. Maurice Rojas

B.S. in Mathematics Nankai University, Tianjin, China

Publications

• Feasibility of Circuit Polynomials without Purple Swans

by Weixun Deng, Alperen Ergur, Grigoris Paouris, and J. Maurice Rojas, in Proceedings of ISSAC 2024 (International Symposium on Symbolic and Algebraic Computation, July 16-19, Raleigh, NC, USA), pp. 429-436, 2024

• Quickly Computing Isotopy Type for Exponential Sums over Circuits (Extended Abstract)

by Frederic Bihan, Erika Croy, Weixun Deng, Kaitlyn Phillipson, Robert J. Rennie, and J. Maurice Rojas, ACM Communications in Computer Algebra, Volume 57, Issue 3, pp. 152-155, 2023

Preprints:

• Viro's Patchworking and the signed reduced A-discriminant

by Weixun Deng, J. Maurice Rojas, and Mate Telek, accepted for presentation at MEGA 2024 (Effective Methods in Algebraic Geometry, July 29 - August 2, MPI Leipzig, Germany), under review for the special issue of the JSC, 2024

• Trinomials and Deterministic Complexity Limits for Real Solving by Erick Boniface, Weixun Deng, and J. Maurice Rojas, arXiv: 2202.06115

Research Interest

- Algorithmic Algebraic Geometry
- Real Algebraic Geometry
- Tropical Geometry
- Complexity Theory

Skills

Programming Languages: Python, C++. **Software:** LAT_EX, Matlab, Mathematica, Maple. **Languages:** English, Chinese, Cantonese.

Awards and Honors

Thomas Powell '62 Fellowship Texas A&M University

Aug. 2024

Sep. 2019 - present

Sep. 2015 - June 2019

Conference Presentation

Talks:

• Computing isotopy type of positive zero sets faster for near-circuit polyn 7th SIAM Texas-Louisiana Sectional Meeting, Waco, TX	omials Oct. 2024
• Computing isotopy type of positive zero sets faster for <i>n</i> -variate $(n + k)$ -m 6th SIAM Texas-Louisiana Sectional Meeting, Lafayette, LA	omials Nov. 2023
• Fewnomials Optimization and the Number of Connected Components 2022 INFORMS Annual Meeting, Indianapolis, IN	Oct. 2022
• Randomization in Solving and Diophantine Approximation 4th Annual Meeting of the SIAM Texas-Louisiana Section, South Padre Island, TX	Nov. 2021
Posters:	
• Quickly Computing Isotopy Type for Exponential Sums over Circuits The International Symposium on Symbolic and Algebraic Computation (ISSAC) 20 way	23, Tromsø, Nor- July 2023
Teaching Experience	
Instructor of Record	
• Math 142 - Business Calculus	Fall 2024
• Math 142 - Business Calculus	Fall 2023
Teaching Assistant	
• Teaching Assistant for Research Experiences for Undergraduates	Summer 2024
\bullet Recitation Leader for Math 152 - Engineering Mathematics II	Spring 2024
• Teaching Assistant for Research Experiences for Undergraduates	Summer 2023
\bullet Recitation Leader for Math 151 - Engineering Mathematics I	Spring 2023
• Teaching Assistant for Research Experiences for Undergraduates	Summer 2022
\bullet Recitation Leader for Math 152 - Engineering Mathematics II	Spring 2022
• Recitation Leader for Math 152 - Engineering Mathematics II	Spring 2021
\bullet Recitation Leader for Math 151 - Engineering Mathematics I	Fall 2020