Weixun Deng

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Education

Ph.D. in Mathematics
Texas A&M University, College Station, Texas   *Sep. 2019 - present*
Advisors: Prof. J. Maurice Rojas

B.S. in Mathematics
Nankai University, Tianjin, China   *Sep. 2015 - June 2019*

Publications

- **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), *2024*

- **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:

- **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: LaTeX, Matlab, Mathematica, Maple.
Languages: English, Chinese, Cantonese.

Awards and Honors

Thomas Powell '62 Fellowship   *Aug. 2024*
Texas A&M University

Conference Presentation

Talks:

- **Computing isotopy type of positive zero sets faster for near-circuit polynomials.**
  7th SIAM Texas-Louisiana Sectional Meeting, Lafayette, LA   *Oct. 2024*

- **Computing isotopy type of positive zero sets faster for n-variate $(n+k)$-nomials.**
  6th SIAM Texas-Louisiana Sectional Meeting, Lafayette, LA   *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**
  ISSAC 2023, Tromsø, Norway   *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*
- Recitation Leader for Math 152 - Engineering Mathematics II   *Spring 2024*
- Teaching Assistant for Research Experiences for Undergraduates   *Summer 2023*
- Recitation Leader for Math 151 - Engineering Mathematics I   *Spring 2023*
- Teaching Assistant for Research Experiences for Undergraduates   *Summer 2022*
- Recitation Leader for Math 152 - Engineering Mathematics II   *Spring 2022*
- Recitation Leader for Math 152 - Engineering Mathematics II   *Spring 2021*
- Recitation Leader for Math 151 - Engineering Mathematics I   *Fall 2020*