Thomas Yahl

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Profile

I am a Ph.D. student at Texas A&M University working in applied algebraic geometry under Dr. Frank Sottile. My interests include numerical and symbolic computation of Galois groups in enumerative geometry and their applications.

Education

(2017-Present) Texas A&M University
Ph.D. Mathematical Sciences

(2013-2017) Indiana University-Purdue University of Indianapolis
B.A. Mathematical Sciences (Honors)
Minor Computer Science

Research

"Computing Galois Groups of Finite Fano Problems", 2022.

"Real Solutions to Systems of Polynomial Equations", 2022.

"Galois Groups in Enumerative Geometry and Applications", 2021. arxiv:2108.07905

"Polyhedral Homotopies in Cox Coordinates", 2020. arxiv:2012.04255

"Decomposable Sparse Polynomial Systems", Journal of Software for Algebra and Geometry Vol. 11 (2021), 53-59

"Solving Decomposable Sparse Systems", Numerical Algorithms **88**, 453-474 (2021)

Eigenfunctions to Composition Operators of Generalized Linear Fractional Maps, 2015. Presented at Indiana Undergraduate Math Research Conference.

Talks

Effective Methods in Algebraic Geometry 2022, "Computing Galois grouops of finite Fano problems"

Texas A&M University, Geometry Seminar, "Solving decomposable sparse polynomial systems"

Joint Mathematics Meetings 2022, "Parameter Homotopies in Cox Coordinates"

SIAM TX-LA Section Fourth Annual Meeting, "Parameter Homotopies in Cox Coordinates"

SIAM Conference on Applied Algebraic Geometry, "Cox Homotopies"

Freie Universität, Discrete Geometry Seminar, "Solving Decomposable Sparse Polynomial Systems"

Max-Planck-Institut für Mathematik, Seminar on Nonlinear Algebra, "Solving Decomposable Sparse Polynomial Systems"

Technische Universität Braunschweig, Oberseminar Applied Algebra and Analysis, "Solving Decomposable Sparse Polynomial Systems"

Technische Universität Berlin, Kolloquium on algorithmic mathematics and complexity theory, "Solving Decomposable Sparse Polynomial Systems"

SIAM TX-LA Section Second Annual Meeting, "Galois Groups and Decomposable Branched Covers"

Honors

Recipient of TAMU AFS Merit Fellowship in Mathematics

Recipient of Outstanding TA Award at Texas A&M University

Supervised undergraduates in Mathematics REU programs at Texas A&M University

Secretary of the Texas A&M University chapter of the AMS

Mentored in the graduate student Peer Mentoring Program at Texas A&M University

Fourth prize & Best use of additional data prize, Texas A&M University Institute of Data Science 2022 Data Science Competition