Vasanth Pidaparthy

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PROFESSIONAL SUMMARY

Fifth-year PhD student in Mathematics focusing on Differential Geometry and Partial Differential Equations, bringing strong analytical and problem-solving skills. Eager to apply mathematical expertise and analytical thinking to real-world challenges in finance and data-driven fields.

EDUCATION

University of Maryland, College Park, MD, USA
PhD in Mathematics | AUG 2021 – present | GPA: 3.9/4.0
Advisor: Prof. Yanir A Rubinstein
Thesis: Analysis and Geometry of Special Lagrangians with Boundary
Selected Coursework: linear elliptic PDE, non-linear Schrodinger and wave equation, fully non-linear PDE, geometric analysis, algebraic geometry, Lie groups

Indian Institute of Science, Bengaluru, India
Master of Science in Mathematics | AUG 2020 – MAY 2021 | First class w/ distinction | GPA: 9.9/10
Selected Coursework: PDEs, Analysis III

Indian Institute of Science, Bengaluru, India
Bachelor of Science (Research) in Mathematics | AUG 2016 – MAY 2020 | First class w/ distinction | GPA: 9.5/10
Selected Coursework: probability, measure theory, Riemannian geometry, information theory, combinatorics, algorithms and data structures, commutative algebra, Galois theory

EXPERIENCE

Quantum Computing Research Intern, Error Corp.
JUNE 2025 — AUG 2025 | Quantum optimal control: Formulated a signal interference problem in quantum error correction as a differential geometry problem | Implemented a numerical solver in Python (JAX) to optimize control pulses, achieving a significant reduction in error rates | 10 weeks (Full time)

Graduate Teaching Assistant, Department of Mathematics, University of Maryland, College Park
AUG 2021 — PRESENT | **Responsibilities:** Classroom instruction, designing and grading quizzes and exams.

Graduate Teaching Assistant, Research Experience for Undergraduates (REU)
JUNE 2024 — JULY 2024 | Topic: Convex and Complex Geometry
Guided 6 undergraduate students | Secured full-time funding for the position | arXiv:2411.11246

Graduate Teaching Assistant, Research Experience for Undergraduates (REU)
JUNE 2023 — JULY 2023 | Topic: Geometric Measure Theory
Guided 4 undergraduate students | Secured full-time funding for the position.

LEADERSHIP EXPERIENCE

Social Coordinator, Graduate Student Council of MATH, AMSC, and STAT | AUG 2023 – MAY 2024
Created and organized the Joint AMSC, MATH, and STAT Student Seminar to give grad students exposure to broad fields of mathematics | Coordinated department socials – qualifier social, grad picnic, happy hour

Co-organizer, Student Complex Geometry Seminar, UMD | AUG 2023 – MAY 2024
Organized the weekly student complex geometry seminar | Delivered a semester-long lecture series on Gromov–Hausdorff convergence of Ricci lower bounded manifolds.

Mentor, Directed Reading Program (DRP) | FEB 2023 – MAY 2023
Volunteered to mentor undergraduate reading project | Topic: The Bolzano–Weirstrass approximation theorem

Instructor, Monsoon Math Camp | JUNE 2021
Volunteer instructor at online high school math camp | India | Topic: Probability, martingales, and gambler's ruin

AWARDS AND HONORS

Patrick and Marguerite Sung Fellowship in Mathematics | UMD | AUG 2025 – DEC 2025
Hauptman Summer Fellowship | UMD | MAY 2024, MAY 2022
CMNS Outstanding Teaching Assistant Award | UMD | MAY 2022
Dean's Fellowship | UMD | AUG 2021 – MAY 2023
Kishore Vaigyanik Protsahan Yojana (KVPY) Scholarship | India | AUG 2016 – MAY 2021

PUBLICATIONS

Subequations | Graduate textbook | Solicited by European Mathematical Society (EMS)
V. Pidaparthy, Y.A. Rubinstein
Convexity and the degenerate special Lagrangian equation | July 2025 | arXiv:2507.17018
V. Pidaparthy, Y.A. Rubinstein
Moduli of special Lagrangians with boundary, II: Lagrangian Flux and Affine Structures | Mar 2025 | arXiv:2503.23532 | V. Pidaparthy
Moduli of special Lagrangians with boundary, I: Unobstructed Deformations | Mar 2025 | arXiv:2503.23525 | V. Pidaparthy | *to appear in* Indiana University Mathematics Journal
The Hausdorff distance and metrics on toric singularity types | Bulletin des Sciences Mathématiques | Sep 2025 |A. Aitokhuehi, B. Braiman, D. Cutler, T. Darvas, R. Deaton, P. Gupta, J. Horsley, V. Pidaparthy, J. Tang

SKILLS

Technical Skills: Python (NumPy, JAX, Pandas), LaTeX
Mathematical Modeling: PDEs, differential geometry, probability, interpolation
Professional Skills: flexibility in working on diverse research projects, collaborative problem-solving, communication of complex mathematical ideas, mentorship experience guiding students and peers