Vasishta S. Tumuluri **Curriculum Vitae** **January 27, 2026**

CONTACT INFORMATION

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EDUCATION

University of North Carolina, Chapel Hill, NC — August 2022 – May 2026

B.S. Statistics & Analytics, Mathematics

- Inducted into Phi Beta Kappa

RESEARCH EXPERIENCE

University of North Carolina, Chapel Hill, NC — August 2025 – Present

Root-finding algorithms, centrality measures, and opinion dynamics on random growing trees. Undergraduate honors thesis supported by the RTG in Networks at the Department of Statistics & Operations Research. Mentored by Sayan Banerjee.

North Carolina State University, Raleigh, NC — May 2025 – Present

Numerical linear algebra methods for optimal sensor placement in Bayesian inverse problems. Participant in the DRUMS REU at the Department of Mathematics and the Department of Statistics. Mentored by Arvind K. Saibaba and Hugo Díaz.

University of North Carolina, Chapel Hill, NC — August 2024 – May 2025

Optimization methods for low-rank matrix reconstruction from Gaussian measurements. Supported by the RTG in Networks at the Department of Statistics & Operations Research. Mentored by Mike O'Neill.

Montana State University, Bozeman, MT — May 2024 – August 2024

Single-source shortest paths on parametrically weighted families of graphs. Participant in the Algorithms & Optimization REU at the Gianforte School of Computing. Mentored by Brittany Terese Fasy and Binhai Zhu.

OTHER EXPERIENCE

Chessvia, Carrboro, NC — April 2023 – August 2023

Software engineering intern. Worked on development and feature enhancement of Chessvia website. Developed and refined AI model that analyzes users' online chess accounts to create training plans and opening repertoires and match students with suitable coaches.

PUBLICATIONS

[1] Hugo Díaz, Gabriela Ramon, Arvind K. Saibaba, Geena Sarnoski, and Vasishta Tumuluri. Multifidelity Sensor Placement in Bayesian State Estimation Problems. *In preparation.*

TALKS

[2] Hugo Díaz, Gabriela Ramon, Arvind K. Saibaba, Geena Sarnoski, and **Vasishta Tumuluri**. "Multifidelity Sensor Placement in Bayesian State Estimation Problems." Triangle Computational and Applied Mathematics Symposium, North Carolina State University, November 8-9, 2025, Raleigh, NC. *Lightning Talk.*

[3] Vasishta Tumuluri. "Gambler's Ruin: A First Step into Random Walks." MathGEMS at Carolina Math Club, September 16, 2025, Chapel Hill, NC.

[4] Max Van Fleet and **Vasishta Tumuluri**. "Rank-One Approximation and Principal Component Analysis to Play Wordle." DRUMS Seminar, North Carolina State University, July 9, 2025, Raleigh, NC. *Lightning Talk.*

[5] Vasishta Tumuluri. "Fallacies, Flaws, and Howlers." MathGEMS at Carolina Math Club, March 4, 2025, Chapel Hill, NC.

POSTERS

[6] Hugo Díaz, **Gabriela Ramon**, Arvind K. Saibaba, **Geena Sarnoski**, and **Vasishta Tumuluri**. "Multifidelity Sensor Placement in Bayesian State Estimation Problems." Joint Mathematics Meetings, American Mathematical Society, January 4-7, 2026, Washington, D.C.

[7] Hugo Díaz, Gabriela Ramon, Arvind K. Saibaba, Geena Sarnoski, and **Vasishta Tumuluri**. "Multifidelity Sensor Placement in Bayesian State Estimation Problems." Triangle Computational and Applied Mathematics Symposium, North Carolina State University, November 8-9, 2025, Raleigh, NC.

[8] Brittany Fasy, Brendan Mumey, **Nate Rengo**, Braeden Sopp, **Vasishta Tumuluri**, and Binhai Zhu. "Parametric Shortest Paths on Affine Combinations of Weighted Directed Graphs." Summer Research Symposium, Montana State University, August 1, 2024, Bozeman, MT.

TEACHING

University of North Carolina, Chapel Hill, NC

Undergraduate Teaching Assistant

- MATH 130 (Precalculus Mathematics) (Spring 2026)
- MATH 521 (Advanced Calculus I) (Fall 2024)

GRANTS

(i) NSF 25-547: NSF Graduate Research Fellowship Program (GRFP), Fiscal Year 2026 competition. Total award amount: $159,000. *Applied/pending*.

(ii) American Mathematical Society undergraduate travel grant for research presentation at the Joint Mathematics Meetings 2026 (funded by NSF-DMS-2015553). Total award amount: $1,000. *Awarded*.

TECHNOLOGY

Proficient: Python, Julia, LaTeX
Familiar: R, MATLAB, Java