

CONTACT INFORMATION	Department of Mathematics Emory University 400 Dowman Dr. Atlanta, GA, 30322, USA	Phone: (xxx) xxx-xxxx Email: mitchell.scott@emory.edu Website: mtscott.github.io/ LinkedIn: linkedin.com/in/mitchell-t-scott
EDUCATION	Emory University , Atlanta, Georgia, USA Ph.D., Department of Mathematics, expected in May 2028 M.S., Department of Computer Science, expected in May 2025 Tufts University , Medford, Massachusetts, USA M.S., Department of Mathematics, May 2023 <i>Advisors: Professor Misha Kilmer, Professor Xiaozhe Hu</i> <i>Thesis title: A Tale of Two Tensors: Using Hierarchical and Block Low Rank Matrices to Make Preconditioners and Save Storage</i> Cornell University , Ithaca, New York, USA B.S., Department of Biological Engineering, December 2020 <i>Minors: Pure Mathematics, Applied Mathematics</i> <i>Thesis: Designing and Optimizing a Protocol for Whole-Ovary Vitrification</i>	
RESEARCH INTERESTS	Numerical Linear Algebra High Performance Scientific Computing Numerical Partial Differential Equations	
ON-GOING RESEARCH	Structured matrices, arising from the abstraction of real world physical systems modelled by discretized fractional partial differential equations, are prevalent in fluid dynamics, computational finance, and image processing. Current ways to store and solve problems using these matrices can be slow. My current research is interested in finding ways that exploit hidden structure so that we can minimize storage and computational time. More technical research topics include: multilinear algebra, tensor-based decomposition, fractional PDEs, and preconditioning.	
CONFERENCES, WORKSHOPS AND TALKS	Invited Talks: <ul style="list-style-type: none">• <i>Discovering Hierarchical Matrix Structure Through Recursive Tensor Decomposition</i>: Joint Mathematics Meeting, Boston, MA, January 4, 2023. Contributed Talks: <ul style="list-style-type: none">• <i>Constructing Hierarchical Matrices through Recursive Tensor Decomposition</i>, Conference on Fast Direct Solvers, West Lafayette, IN, November 4, 2023. Student Seminar Talks: <ul style="list-style-type: none">• <i>A Tale of Two Tensors: Using Hierarchical and Block Low Rank to Make Preconditioners and Save Storage</i>, Emory University Discussions in Scientific Computing, Atlanta, GA, October 6, 2023.• <i>It's Tensor Time!: A Computational Framework for Analyzing Structured Matrices</i>, Tufts University Monday Math Meeting, Medford, MA, September 12, 2022.	

- *Representation Schemas for Visualizing Quantum Algorithms*, Tufts University Quantum Computing Reading Group, Medford, MA, April 11, 2022.
- *Special Families of Matrices used in Quantum Algorithms*, Tufts University Quantum Computing Reading Group, Medford, MA, February 28, 2022.

Workshops and Conferences Attended

- Conference on Fast Direct Solvers, Purdue University, West Lafayette, IN, November 4-5, 2023.
- Acceleration and Extrapolation Methods, ICERM, Providence, RI, July 24-28, 2023.
- Qiskit Global Summer School 2023: Theory to Implementation, IBM, July 17-28, 2023.
- Joint Mathematics Meetings, Boston, MA, January 4-7, 2023.
- Geometry and Analysis Seminar for Boston Area Graduate Students, Massachusetts Institute of Technology, Cambridge, MA, October 29-30, 2022.
- Qiskit Global Summer School 2022: Quantum Simulations, IBM, July 18-29, 2022.
- Geometry and Analysis Seminar for Boston Area Graduate Students, Massachusetts Institute of Technology, Cambridge, MA, November 6-7, 2021.

TEACHING EXPERIENCE

Emory University

Teaching Assistant

- MATH 315 - Numerical Analysis (Spring 2024)

Directed Reading Program Mentor

- Introduction to Stochastic Processes (Fall 2023)
- Introduction to Iterative Methods for Inverse Problems (Fall 2023)

Course Assistant

- MATH 351 - Partial Differential Equations (Fall 2023)

Tufts University

Teaching Assistant

- MATH 126 - Numerical Linear Algebra (Spring 2023)

Directed Reading Program Mentor

- Introduction to Mathematical Control Theory (Fall 2022)

Course Assistant

- MATH 125 - Numerical Analysis (Fall 2022)
- MATH 32- Calculus I (Spring 2022)

Cornell University

Undergraduate Teaching Assistant

- BEE 2600 - Introduction to Biological Engineering (Fall 2018)

HONORS AND AWARDS

The Fuertes Medal Memorial Prize for Public Speaking,
Cornell University, College of Engineering, \$3,000 for AY 2019 - 2020.

Department of Mathematics Scholarship,
Tufts University, \$20,000 for AY 2022 - 2023

Research Conference Presenter Grant,

Tufts University, Graduate School of Arts and Science, \$600 for AY 2022 - 2023

MEMBERSHIPS American Mathematical Society (AMS)

Society for Industrial and Applied Mathematics (SIAM)

Spectra!

DEPARTMENTAL OFFICER: Directed Reading Program Steering Committee, Emory University, 2023 -
SERVICE

LANGUAGE English: native speaker

SKILLS

French: reading proficiency, basic conversation

Programming: MATLAB, JULIA, PYTHON (specific packages include: NumPy, pandas, scikit-learn, qiskit, SciPy), RSTUDIO, MATHEMATICA

Computer: L^AT_EX, Microsoft Office, HTML, CSS