

# Chandler Smith

## Curriculum vitae

Tufts University

[Chandler.Smith@tufts.edu](mailto:Chandler.Smith@tufts.edu)

720-949-5334

### **Education**

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**Ph.D., Mathematics**, under A. Tasissa

Tufts University, in progress, Medford, MA

**M.A., Mathematics**, under A. Tasissa

Tufts University, May 2023, Medford, MA

**B.A., Chemistry (with Distinction) and Physics (with Distinction), Mathematics Minor**, under M.G. Hill and A. J. Schramm

Occidental College, May 2019, Los Angeles, CA

### **Work Experience**

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**Research Assistant, Mathematics Department, Tufts University**

- Designing Riemannian optimization algorithms for Euclidean distance geometry (EDG) and investigating convergence properties
- Investigating linear algebraic structure associated with the EDG problem
- Studying entropically regularized optimal transport and its applications to maximum likelihood deconvolution

May 2023 to Present, Medford, MA

**Instructor of Record, Mathematics Department, Tufts University**

- Statistics, Summer 2024

**Teaching Assistant, Mathematics Department, Tufts University**

- Calculus III, Fall 2021, Summer 2023
- Differential Equations, Spring 2022
- Probability, Summer 2022
- Real Analysis I, Fall 2022
- Linear Algebra, Spring 2023

September 2021 to August 2023, Medford, MA

**Research Assistant, Data Intensive Studies Center, Tufts University**

- Anomaly detection in noisy real-world data using normalizing flows and other learning techniques

February 2022 to August 2022, Medford, MA

**Post-Baccalaureate Researcher, Los Alamos National Laboratory, NEN-1**

- Data analysis for low-temperature superconducting microcalorimeters

June 2019 to May 2021, Los Alamos, NM

### **Undergraduate Researcher, Occidental College**

- Electrochemical studies of organometallic compounds for use in photovoltaic cells

January 2017 to May 2019, Los Angeles, CA

### **Academic Mastery Program Facilitator, Occidental College**

August 2017 to May 2019, Los Angeles, CA

### **Teaching Assistant, Chemistry Department, Occidental College**

January 2017 to May 2019, Los Angeles, CA

### **Leadership Roles**

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#### **Tufts SIAM President**

May 2024 to Present, Medford, MA

#### **Tufts Organization of Graduate Students in Mathematics Vice President**

May 2024 to Present, Medford, MA

#### **Tufts SIAM Chapter Vice President**

September 2023 to Present, Medford, MA

#### **Tufts Organization of Graduate Students in Mathematics Secretary**

September 2023 to Present, Medford, MA

#### **Tufts SIAM Chapter Treasurer**

May 2022 to August 2023, Medford, MA

#### **Tufts SIAM Chapter Secretary**

May 2022 to August 2023, Medford, MA

### **Selected Presentations**

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1. *A Riemannian Approach to Euclidean Distance Geometry through Adaptive Sampling* **C.M. Smith**, H. Cai, A. Tasissa. *SIAM Data Science Workshop* (2024)
2. *A Provably Convergent Fast Algorithm for Euclidean Distance Geometry*. **C.M. Smith**, H. Cai, A. Tasissa. *NSF CompMath* (2024)
3. *Riemannian Optimization for Euclidean Distance Geometry*. **C.M. Smith**, S. Lichtenberg, H. Cai, A. Tasissa. *OPT2023: 15th Annual Workshop on Optimization for Machine Learning at NeurIPS*, (2023)

### **Selected Publications**

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1. *A Provably Convergent Fast Algorithm for Euclidean Distance Geometry*. **C.M. Smith**, H. Cai, A. Tasissa. In Progress (2024)
2. *Riemannian Optimization for Euclidean Distance Geometry*. **C.M. Smith**, S. Lichtenberg, H. Cai, A. Tasissa. *OPT2023: 15th Annual Workshop on Optimization for Machine Learning at NeurIPS*, (2023)

## Conference/Workshop Participation

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- Presenter at SIAM Data Science Workshop, October 2024
- Presenter at NSF CompMath Workshop, July 2024
- Participant at ICERM Workshop “Interacting Particle Systems”, May 2024
- Presenter at OPT-ML Workshop 2023 at NeurIPS, December 2023
- Participant at SLMATH Summer School “Concentration Inequalities and Localization Techniques for High Dimensional Probability and Geometry”, July 2023
- Participant at JMM 2023, January 2023

## All Publications

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1. *A Provably Convergent Fast Algorithm for Euclidean Distance Geometry*. **C.M. Smith**, H. Cai, A. Tasissa. In Progress (2024)
2. *Riemannian Optimization for Euclidean Distance Geometry*. **C.M. Smith**, S. Lichtenberg, H. Cai, A. Tasissa. *OPT2023: 15th Annual Workshop on Optimization for Machine Learning at NeurIPS*, (2023)
3. *Measurement of  $^{227}\text{Ac}$  Impurity in  $^{225}\text{Ac}$  using Decay Energy Spectroscopy*. A.D. Tollefson, **C.M. Smith**, M.H. Carpenter, M.P. Croce, M. Fassbender, K.D. John, K.E. Koehler, L.M. Lilley, D.R. Schmidt, B.W. Stein, J.N. Ullom, M.D. Yoho, D.J. Mercer. *Applied Radiation and Isotopes*, (2021)
4. *Experimental Validation of Calorimetric Electron Capture Spectral Theory with  $^{193}\text{Pt}$* . K.E. Koehler, M.W. Rabin, M.H. Carpenter, M.A. Famiano, C.J. Fontes, D.R. Schmidt, **C.M. Smith**, A.D. Tollefson, J.N. Ullom, M.D. Yoho, M.P. Croce. *Journal of Low Temperature Physics*. (2020)
5. *Improved Plutonium and Americium Photon Branching Ratios from Microcalorimeter Gamma Spectroscopy*. M.D. Yoho, K.E. Koehler, D.T. Becker, D.A. Bennett, M.H. Carpenter, M.P. Croce, J. Gard, J.A.B. Mates, D.J. Mercer, N.J. Ortiz, D.R. Schmidt, **C.M. Smith**, D.S. Swetz, A.D. Tollefson, J.N. Ullom, L.R. Vale, A.L. Wessels, D.T. Vo. *Nuclear Instruments and Methods in Physics Research Section A*. (2020)

## All Presentations

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1. *A Riemannian Approach to Euclidean Distance Geometry through Adaptive Sampling* **C.M. Smith**, H. Cai, A. Tasissa. *SIAM Data Science Workshop* (2024)
2. *A Provably Convergent Fast Algorithm for Euclidean Distance Geometry*. **C.M. Smith**, H. Cai, A. Tasissa. *NSF CompMath* (2024)
3. *Riemannian Optimization for Euclidean Distance Geometry*. **C.M. Smith**, S. Lichtenberg, H. Cai, A. Tasissa. *OPT2023: 15th Annual Workshop on Optimization for Machine Learning at NeurIPS*, (2023)
4. *Convex Relaxation, Compressive Sensing, and Matrix Completion*. **C.M. Smith**. *Graduate Seminar in Mathematics, Tufts University* (2023)
5. *An Infinite-Dimensional Spectral Theorem*. **C.M. Smith**. *Graduate Seminar in Mathematics, Tufts University* (2022)