

David Mis

PhD Student

Education

Rice University

PhD, *Computational and Applied Mathematics*

2021–present, Houston, TX, USA

Advised by Dr. Maarten de Hoop

University of Texas

MS, *Computer Science*

2019–2021, Austin, TX, USA

University of Texas

BS, *Computer Science*

BS, *Mathematics*

BA, *Economics and Chinese Language*

2009–2014, Austin, TX, USA

Publications

Conference papers

Semialgebraic Neural Networks: From roots to representations

SD Mis, M Lassas, MV de Hoop

International Conference on Learned Representations (ICLR) 2025

May 2025, Singapore

[pdf] [arxiv] [conference]

Journal papers

Reduced mRNA secondary-structure stability near the start codon indicates functional genes in prokaryotes

TE Keller, SD Mis, KE Jia, CO Wilke

Genome Biology and Evolution, Volume 4, Issue 2, 2012, Pages 80–88

[pdf] [link]

Talks

Measure flows in Bayes Hilbert spaces: Diffeomorphism invariance, optimal control, and flocking

SD Mis, MV de Hoop

Geo-Mathematical Imaging Group Partners Meeting

September 2025, Rice University

Diffeomorphism invariant measure flows in Bayes Hilbert spaces

SD Mis, MV de Hoop

Applied Inverse Problems (AIP) 2025

July 2025, Rio de Janeiro, Brazil

Semialgebraic Neural Networks: From roots to representations

SD Mis, M Lassas, MV de Hoop

Inverse Days

December 2024, Oulu, Finland

Semialgebraic Neural Networks

Geo-Mathematical Imaging Group Partners Meeting

November 2024, Rice University

Matrix-Recurrent and Semialgebraic Neural Networks

Geo-Mathematical Imaging Group Partners Meeting

May 2023, Rice University

Professional Experience

Teaching

Rice University

Grader / Teaching Assistant

2021–present, Houston, TX

Grader:

Differential Equations for Science and Engineering

Partial Differential Equations I
Applied Functional Analysis
Numerical Analysis
Graduate Teaching Assistant:
Matrix Analysis

The Art of Problem Solving
Grader / Teaching Assistant
2020–2021, Virtual
Various high school mathematics courses.

University of Texas
Undergraduate Teaching Assistant
2011–2012, Austin, TX
Courses:
Computational Biology
Statistics for Biologists

Research

Rice University
PhD Research Assistant
2022–present, Houston, TX
Geo-Mathematical Imaging Group (GMIG).

University of Texas
Undergraduate Research Assistant
2010–2012, Austin, TX
Lab of Dr. Clause O. Wilke, Professor of Integrative Biology.

Software Development

David Mis Software LLC
Software Developer
2018–2021, Houston, TX
Independent software consultant.

Unaliwear
Cloud Engineer

2015–2018, Austin, TX
Principal architect of AWS infrastructure for consumer IOT device.

Hewlett Packard
Software Developer
2014–2015, Austin, TX
Enterprise software development.

Mentorship

Rice Data2Knowledge Capstone Project Mentor
NASA Orbital Transfer Project
Spring 2025