S 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] [link]

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

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