David Mis

PhD Candidate

Department of Computational Applied Mathematics and Operations Research
Rice University, Houston, TX, USA
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My research focuses on scientific machine learning and inverse problems, with an emphasis on developing measure-theoretic techniques.

Education

Rice University   2021–present
PhD, *Computational and Applied Mathematics*
Houston, TX, USA
Advised by Dr. Maarten de Hoop

University of Texas   2019–2021
MS, *Computer Science*
Austin, TX, USA

University of Texas   2009–2014
BS, *Computer Science*
BS, *Mathematics*
BA, *Economics and Chinese Language*
Austin, TX, USA

Publications

Conference papers

Semialgebraic Neural Networks: From roots to representations   May 2025
<u>SD Mis</u>, M Lassas, MV de Hoop
International Conference on Learning Representations (ICLR) 2025
Singapore

Journal papers

Reduced mRNA secondary-structure stability near the start codon   2012
indicates functional genes in prokaryotes
TE Keller, <u>SD Mis</u>, KE Jia, CO Wilke
Genome Biology and Evolution, Volume 4, Issue 2, Pages 80–88

Talks

Measure flows in Bayes Hilbert spaces   Dec 2025
Inverse Days, Helsinki, Finland

(Poster) Measure flows in Bayes Hilbert spaces: Particle methods and sampling   Dec 2025

CBMS Conference, University of Houston

Measure flows in Bayes Hilbert spaces: Diffeomorphism invariance, optimal control, and flocking   Sep 2025

Geo-Mathematical Imaging Group Partners Meeting, Rice University

Diffeomorphism invariant measure flows in Bayes Hilbert spaces   Jul 2025

Applied Inverse Problems (AIP) 2025, Rio de Janeiro, Brazil

Semialgebraic Neural Networks: From roots to representations   Dec 2024

Inverse Days, Oulu, Finland

Semialgebraic Neural Networks   Nov 2024

Geo-Mathematical Imaging Group Partners Meeting, Rice University

Matrix-Recurrent and Semialgebraic Neural Networks   May 2023

Geo-Mathematical Imaging Group Partners Meeting, Rice University

Professional Experience

Teaching

Rice University   2021–present

Grader / Teaching Assistant

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   2020–2021

Grader / Teaching Assistant

Virtual

Various high school mathematics courses

University of Texas   2011–2012

Undergraduate Teaching Assistant

Austin, TX

Courses: Computational Biology, Statistics for Biologists

Research

Rice University   2022–present

PhD Research Assistant

Houston, TX

Geo-Mathematical Imaging Group (GMIG)

University of Texas   2010–2012

Undergraduate Research Assistant

Austin, TX

Lab of Dr. Claus O. Wilke, Professor of Integrative Biology

Software Development

David Mis Software LLC   2018–2021

Software Developer

Houston, TX

Independent software consultant

Unaliwear   2015–2018

Cloud Engineer

Austin, TX

Principal architect of AWS infrastructure for consumer IOT device

Hewlett Packard   2014–2015

Software Developer

Austin, TX

Enterprise software development

Mentorship

Rice Data2Knowledge Capstone Project Mentor   Spring 2025

Rice University

NASA Orbital Transfer Project

Professional Activities

Minisymposium Organizer   March 2026

Measure Flows for Inverse Problems and Machine Learning

SIAM UQ '26

Awards

SIAM UQ 2026 student travel award