

David Mis

PhD Candidate

Department of Computational Applied Mathematics and Operations Research

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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 PhD, <i>Computational and Applied Mathematics</i> Houston, TX, USA Advised by Dr. Maarten de Hoop	2021–present
University of Texas MS, <i>Computer Science</i> Austin, TX, USA	2019–2021
University of Texas BS, <i>Computer Science</i> BS, <i>Mathematics</i> BA, <i>Economics and Chinese Language</i> Austin, TX, USA	2009–2014

Publications

Conference papers

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

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

Measure flows in Bayes Hilbert spaces <i>Inverse Days, Helsinki, Finland</i>	Dec 2025
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(Poster) Measure flows in Bayes Hilbert spaces: Particle methods and sampling <i>CBMS Conference, University of Houston</i>	Dec 2025
Measure flows in Bayes Hilbert spaces: Diffeomorphism invariance, optimal control, and flocking <i>Geo-Mathematical Imaging Group Partners Meeting, Rice University</i>	Sep 2025
Diffeomorphism invariant measure flows in Bayes Hilbert spaces <i>Applied Inverse Problems (AIP) 2025, Rio de Janeiro, Brazil</i>	Jul 2025
Semialgebraic Neural Networks: From roots to representations <i>Inverse Days, Oulu, Finland</i>	Dec 2024
Semialgebraic Neural Networks <i>Geo-Mathematical Imaging Group Partners Meeting, Rice University</i>	Nov 2024
Matrix-Recurrent and Semialgebraic Neural Networks <i>Geo-Mathematical Imaging Group Partners Meeting, Rice University</i>	May 2023

Professional Experience

Teaching

Rice University <i>Grader / Teaching Assistant</i> Houston, TX Grader: Differential Equations for Science and Engineering, Partial Differential Equations I, Applied Functional Analysis, Numerical Analysis Graduate Teaching Assistant: Matrix Analysis	2021–present
The Art of Problem Solving <i>Grader / Teaching Assistant</i> Virtual Various high school mathematics courses	2020–2021
University of Texas <i>Undergraduate Teaching Assistant</i> Austin, TX Courses: Computational Biology, Statistics for Biologists	2011–2012

Research

Rice University <i>PhD Research Assistant</i> Houston, TX Geo-Mathematical Imaging Group (GMIG)	2022–present
University of Texas <i>Undergraduate Research Assistant</i> Austin, TX Lab of Dr. Claus O. Wilke, Professor of Integrative Biology	2010–2012

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