Daniel Flores

PhD Student · Purdue University

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Education

Purdue University   *West Lafayette, Indiana*
PhD, Mathematics   *2019 - present*
- **Advisor**: Dr. Trevor Wooley

University of Houston   *Houston, Texas*
BS, Mathematics   *2016 - 2019*
- **Undergraduate Advisor**: Dr. Alan Haynes
- Graduated Summa Cum Laude

Lone Star College   *Houston, Texas*
AS   *2013 - 2016*

Research Interests

Analytic Number Theory, applications of the Hardy-Littlewood circle method, harmonic analysis, and arithmetic statistics.

Past Research Projects

University of Houston   *Houston, Texas*
Dr. Alan Haynes   *2018-2019*
Combinatorial Optimization with Reinforcement Learning
Description: We phrased the problem of computing Ramsey numbers as an adversarial game, which allowed the use of reinforcement learning to potentially improve bounds on Ramsey numbers.

Emory University   *Atlanta, Georgia*
Dr. Lars Ruthotto   *2018*
Coupled Inversion-Classification Neural Network
Description: Designed and implemented a neural network architecture to classify noisy observation data which couples the tasks of reconstruction and classification.

Service

2019-Present	**Recitation Instructor,** Mathematics., Purdue University • MA 16600 - Analytic Geometry And Calculus II, Fall 2019. • MA 26100 - Multivariate Calculus, Fall 2020.
2018-2019	**Undergraduate Grader,** University of Houston • MATH 3331 - Ordinary Differential Equations, Fall 2018. • MATH 4366 - Numerical Linear Algebra, Spring 2019.
2018	**Undergraduate Researcher,** Emory University • Supervised by Lars Ruthotto • Funded by NSF, DMS-1751636
2013-2019	**Mathematics Tutor,** Lone Star College

Awards, Fellowships, & Grants

2019	**Ross Fellowship**, Purdue University
2019	**Charles P. Benner Scholarship**, University of Houston
2018	**Provost's Undergraduate Research Scholarship**, University of Houston
2017	**Charles P. Benner Scholarship**, University of Houston

Presentations

INVITED TALKS

Fall 2018. *Classification of noisy images with a coupled inversion-classification neural network*. LA-TX Undergraduate Mathematics Conference, Baton Rouge, Louisiana.

Outreach, Professional Development, & Languages

SERVICE AND OUTREACH

2017-2019	**Pi Mu Epsilon**, Meeting Organizer	*University of Houston*
2014-2016	**Mathematics Club**, Pi Day Organizer	*Lone Star College*

DEVELOPMENT

2019-2020 **Purdue Analytic Number theory and Harmonic Analysis**, weekly talks about recent research topics in analytic number theory and harmonic analysis.

2018 **UH Summer School on Dynamical Systems**, a workshop designed to introduce graduate students to the basics of dynamical systems and ergodic theory.

2017 **Deep learning using Tensorflow**, weekly talks covering the basics of deep learning to convolutional neural networks, and an introduction to the deep learning package, Tensorflow.

2016-2019 **University of Houston Undergraduate Mathematics Colloquium**, weekly talks about topics in research mathematics aimed towards an undergraduate audience .

2016-2019 **University of Houston Analysis Seminar**, weekly talks about recent research topics in analysis.

LANGUAGES

Spoken: English, Spanish.

Code: C#, C++, Python 3, LaTeX.