NATASHA ASTUDILLO

mishellastudillo@hotmail.com

EDUCATION

Texas A&M University-Commerce Expected May, 2019
Masters of Science in Mathematics

- Thesis: *Anomalous diffusion of cholera toxin on cell membranes investigated by fluorescence correlation spectroscopy*

St. Thomas University, Miami Gardens, Florida May, 2017
Bachelor of Science in Mathematics

- Magna Cum Laude
- GPA: 3.87/4.00

EXPERIENCES AND ACTIVITIES

Sourcing Operations Internship June 2018 - August 2018
Vizient,Inc (Irving, Texas)
Sourcing-Novaplus Brand Department

- Analyze and verify NovaPlus cross references, pricing, and product mix to ensure the NovaPlus offering is accurate and that our members have access to the most used and current product mix.
- Updating the online catalog with product changes, additions or deletions
- Assist the Program Managers with analyzing and identifying product mix opportunities, assist with cross-referencing data and assist with conversion analysis
- Assist in preparing new sales campaign strategies and sales presentations
- Assist in catalog audits to confirm that contracts and products have Novaplus designation and then work with PE/PA to get system updated

Texas A&M University-Commerce August 2017-Present

- Graduate Teaching Assistant
    - Taught College Algebra course
    - Taught Intermediate Algebra courses
    - Created and organized course materials for Intermediate Algebra and College Algebra
    - Supplemental Instructor Leader for Numerical Analysis

St. Thomas University, Miami Gardens, Florida 2013- May,2017

- Mathematics Tutor at the Academic Enhancement Center, January 2015 – May 2017
    - Provide study guidance outside class especially for students who experience difficulty in university-level math courses, such as Intro to algebra, Intermediate Algebra, College Algebra, Pre-calculus I and II or Calculus I.
- Wolfram Technology Conference Attendant, October 2016
- Summer Research Symposium Participant, September 2016
- Resident Assistant, Summer 2016
- Mathematics Tutor for the Science Building, January 2014-May 2014
- Secretary of the Economics Club, January 2014 – May 2014

HONORS AND AWARDS

Texas A&M University-Commerce August 2017-Present

- 2018 Pathways Student Research Symposium
    - First Place Graduate Research Award in Mathematics
        - Competition among eleven universities in the Texas A&M System
- Supplemental Graduate Assistant Funding
- Mathematics Departmental Scholarship
- Bill, Gloria and James Aslan Scholarship

St. Thomas University, Miami Gardens, Florida 2013 – May 2017

- Academic Scholarship Recipient, 2013-May 2017
- International Student Scholarship Recipient, 2013-May 2017
- STEM Scholarship Recipient, August 2015-May 2017
- Dean's List Recipient, January, 2014- May 2017
- Trueba Travel Scholarship Recipient, Summer 2016
- Jose Navarro Scholarship Recipient , November, 2014
- ¡Adelante! U.S. Education Leadership Fund Recipient, November, 2014
- Second Place in Norbert Wiener Mathematics Contest in Pre-calculus, November, 2014

U.S. Fulbright Commission, Quito, Ecuador January, 2013

- Opportunity Grant Scholarship

SKILLS

Computer

- Two-year experience with Wolfram Mathematica, R, Python, and Matlab
- Familiar with Java Programming language and Magma

Personal

- Trilingual: Spanish and English (fluent), French (basic)

PRESENTATIONS

Comparative introduction to mathematical theory of the Fluorescence Correlation Spectroscopy for a diffusion process: Classical approach vs simplified approach. *Oral Presentation*, **Texas Women in Mathematics Symposium**, University of Houston, 2018

RESEARCH PROJECT EXPERIENCES

Texas A&M University-Commerce

Classification of Skin lesion images between benign and malignant, January – December 2018

- Developed a Convolutional Neural Network and a Residual Neural Network architecture in order to classify benign and malignant skin lesion images.

- Ran experiments in order to determine how certain key parameters affect the model performance and categorical performance in NN and ResNet.
- Achieved 73% and 88% accuracy for CNN and ResNet respectively.
- Experimental results were obtained using the benchmark malignant/benign image database ISBI 2017

St. Thomas University, School of STEM, Miami Gardens, Florida, 2016-2017

Data Mining and Machine Learning Projects

Teaching Assistant Evaluation Data Set, January 2017- March 2017

- Performed Support Vector Machine algorithm technique to classify the performance of a Teaching Assistant into low, medium and high.
- Use of linear kernel function, Radial basis function and a Cross Validation Method to optimize the parameters.
- The study was done using IPython Jupyter Notebook and scikit-learn

Cardiac Arrhythmia Data Set, October 2016- December 2016

- Performed exploratory data analysis and data cleaning of the data.
- Used of machine learning tools such as decision trees and random forest to distinguish between the presence and absence of cardiac arrhythmia and to classify it in one of the 16 groups.
- The study was done using R-studio.

Nutrition Study Project, August 2016-October 2016

- Performed an exploratory data analysis, summary statistics and visualization of the dataset.
- Analyzed the relationship of two response variables called plasma beta-carotene and retinol to the explanatory variables of dietary factors and personal characteristics such as gender, smoking status, vitamin use, age, fiber and fat.
- The study was done using R-studio.

Biomedical-Engineering Research Projects

Undergraduate Researcher*,* Summer 2016

- Analyzed the effect of brain network topologies on the synchronization of neuronal oscillations.
- Two approaches were adopted, a microscopic one, addressing the interaction between groups of neurons and following the dynamics of the FtizHugh-Nagumo model, and the mesoscopic one, addressing the interaction between patches in the cortex and following the Kuramoto model, capable to integrate the action of groups of neurons as a whole unit.
- Models were used for 64 and 128 neurons.
- Results were presented at the Wolfram Technology Conference 2016 at Urbana-Champaign.

Junior Research Project, January 2016-May 2016

- Explored potential associations between topological indices of brain networks and the occurrence of schizophrenia based on two scientific articles.
- Nominated to present research project in the Student Research Symposium at St. Thomas University and the South Florida Cell Biology Symposium hosted by the School of STEM at St. Thomas University.