MARINA ZAFIRIS

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EDUCATION

B.S. University of Houston- Downtown (UHD) Exp. Graduation: Dec 2020

Major: Data Science, Minors: Mathematics and Statistics
Domain Focus: Sustainability
Graduating Summa Cum Laude GPA: 3.86

RESEARCH EXPERIENCE

Research Interest: Statistical and Machine Learning, Computational Sustainability, Computer Vision, Geoprocessing, Big Spatial Data, Cloud Computing, Interdisciplinary Information Sciences

Lawrence Berkley National Lab, Virtual Tentative: Jan 2021
Post-Undergraduate Laboratory Intern, Building Technology & Urban Systems Division
Advisors: Mr. Anand Prakash & Mr. Armando Casillas

- "Data Driven Building Energy Management"
- Building energy data acquisition and cleaning
- Developing algorithms for data analysis and optimization
- Running simulations to model building energy consumption patterns
- Processing and sending control signals back to devices to improve their performance

Santa Fe Institute, Virtual May 2020 - Aug 2020
Undergraduate Complexity Researcher
Advisors: Dr. Michael Price & Dr. Hajime Shimao

- "Semantic Segmentation of Satellite Images: Analyzing Fire Scars in the Western Australian Desert"
- Streamline and automate fire scar identification using computer vision techniques on Landsat8 satellite imagery
- Construct data pre-processing pipeline
- Additional Information

Nuclear Regulatory Commission Grant Research, UHD Sept 2019 - Present
Undergraduate Researcher
Advisor: Dr. Katarina Jegdic

- "Employing Machine Learning in the Study of Differential Equations Related to Nuclear Engineering"
- Use neural networks for solution approximation in study of conservation laws that model multi-phase flows of vertical nuclear reactor pipe fluid

- Machine learning approximation methods yield more accurate and faster results than typical approximation methods
- Additional Information

SUSTAIN Scholars Research, UHD Jan 2020 - May 2020
Laboratory Intern, Systems Engineering in Sustainable Solutions
Advisor: Dr. Lisa Morano & Dr. Vassilios Tzouanas

- Mushroom Incubator Development for UHD's Center for Urban Agriculture & Sustainability
- Program a Raspberry Pi interface to be accessed and managed through a phone application
- Real time, sensor-to-interface data management
- Organize sensor data in a cloud database, to be extracted for data analysis and scientific visualization

Texas Workforce Commission Grant Research, UHD April 2019 - Sept 2019
Undergraduate Researcher

- "Utilizing Statistical and Machine Learning Models to Best Predict Graduate Level Admittance"
- Additional Information

HONORS AND AWARDS

2nd Place National Tapia Undergraduate Poster Award Sept 2020
Awarded by ACM

ACM Richard Tapia Conference Scholarship Aug 2020
Awarded by CMD-IT

Nuclear Regulatory Commission Academic Grant Aug 2019
Awarded by UHD Scholars Academy

PRESENTATIONS

Poster Presentation, "Semantic Segmentation of Satellite Images: Firescars in the Western Australian Desert," Women in Data Science Houston Conference, Oct 2020.

Poster Presentation, "Employing Machine Learning in the Study of Differential Equations Related to Nuclear Engineering," SACNAS – The National Diversity in STEM Conference, Oct 2020.

Poster Presentation, "Employing Machine Learning in the Study of Differential Equations Related to Nuclear Engineering," Great Minds in STEM Conference, Oct 2020.

Poster Presentation, "Employing Machine Learning in the Study of Differential Equations Related to Nuclear Engineering," ACM Richard Tapia Celebration of Diversity in Computing Conference, Sept 2020.

Poster Presentation, "Employing Machine Learning in the Study of Differential Equations Related to Nuclear Engineering," UHD Scholars Academy Student Research Conference, Apr 2020.

Poster Presentation, "Utilizing Statistical and Machine Learning Models to Best Predict Graduate Level Admittance," Rice University Ken Kennedy Institute Data Science Conference, Oct 2019.

Poster Display, "Utilizing Statistical and Machine Learning Models to Best Predict Graduate Level Admittance," Great Minds in STEM Conference, Sept 2019.

PROFESSIONAL AFFILIATIONS

UHD SUSTAIN Scholars Program, Jan 2020 - Aug 2020

Society for Advancement of Chicanos and Native Americans in Science, Sept 2019 - Present
- National Member

American Indian Science and Engineering Society, Sept 2019n- Present
- National Member

Association for Computing Machinery, Aug 2019 - Present
- National and UHD Chapter Member

UHD Scholars Academy, Aug 2019-Present

PROFESSIONAL TRAINING AND WORKSHOPS

Certificate in Machine Learning, Rice Ken Kennedy Institute, Aug 2020
Description: Fundamental of Machine Learning, Basic Methods, Deep Learning, and Advance Deep Learning and Reinforcement Learning

Data to Dream: Imagine New Worlds, Houston Data Visualization, July 2020
Description: Understand how data and information can be used to promote racial and socio-economic equity and justice in Houston

Data Jam! Theme: Climate, Houston Data Visualization, March 2020
Description: Data visualization of open-source Azavea Climate data

COMMUNITY SERVICE

Texans Against Gerrymandering
Using AI to Combat Unfair Political Maps, Virtual, Tentative: Jan 2021

A&M University Datathon
Assist and mentor the competitors with their Python code, College Station TX, Oct 2019

Energy Day Service Learning
Interacting and assisting kids with building robots and teaching them about circuits, Houston TX, Oct 2019

WORK EXPERIENCE

Center for Math and Statistics Peer Tutor, UHD Sept 2019 to Present

- Provide assistance to students in college level Mathematics and Statistics

Food-Service Worker, Anna's Gourmet Greek Food Truck Sept 2015 to April 2019

- Work in family's small business to help prepare and cook food, as well as handle transactions

COMPUTER SKILLS

Programming: Python, RStudio, Julia, SQL, Unix Shell Script

Applications and Platforms: QGIS, Git/Github, Anaconda, VSCode, Jupyter Notebook

LANGUAGES (ACTFL SCALING)

English: Native Language

Greek: Advanced Listener, Advanced Speaker, Novice Reading and Writing

Spanish: Intermediate Listener, Intermediate Speaker, Advanced Reading and Writing

Kanien'kéha:ka (Mohawk): Intermediate Listener, Novice Speaker, Reading and Writing