

# MARINA ZAFIRIS

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[Github](#)

## EDUCATION

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**B.S.** University of Houston- Downtown (UHD) Degree Earned: Dec 2020

Major: Data Science, Minors: Mathematics and Statistics  
Domain Focus: Sustainability  
Graduated Summa Cum Laude

GPA: 3.90

## RESEARCH EXPERIENCE

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Research Interest: Statistical and Machine Learning, Computational Sustainability, Computer Vision, Data Driven Computing, Geoprocessing, Big Spatial Data, Interdisciplinary Information Sciences in Energy, Environmentalism, and Social Good

**Lawrence Berkley National Lab**, CA; 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**, NM; 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

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**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

**Dean's List**

Awarded by UHD for Spring 2020, Fall 2019, Spring 2019

## PRESENTATIONS

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**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, Oct 2019.

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#### 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 2019 - Present  
• National Member

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

UHD Scholars Academy, Aug 2019-Present

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#### 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**

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### **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**

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### **Center for Math and Statistics Peer Tutor, UHD**

Sept 2019 - Present

- Provide assistance to students in college level Mathematics and Statistics

### **Food-Service Worker, Anna's Gourmet Greek Food Truck**

Sept 2015 - April 2019

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

## **RELEVANT COURSEWORK**

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**Data Science:** Statistical & Machine Learning, Data-Transformation & Curation, Data Science II, Data Science I, Ethics in Data Science, Senior Project in Data Science

**Computer Science:** Data Struc/Algorithms w/Python, Computing w/ Python

**Mathematics:** Advanced Linear Algebra & Optimization, Discrete Mathematical Structures,

**Statistics:** Applied Regression, Operations Research, Statistical Inference

**Sustainability:** Capstone in Sustainability, Fundamentals of Sustainability, Renewable Energy Systems, Seminar in Sustainability

## **COMPUTER SKILLS**

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

**Applications and Platforms:** QGIS, Git/Github, Anaconda

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