MARÍA DEL CARMEN RAMOS ÁLAMO

CONTACT

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📍 Bayamón, Puerto Rico

in maria-ramos-alamo/

EDUCATION

University of Puerto Rico, Mayagüez Campus ·
August 2024 - Current
Ph.D Bioengineering

University of Puerto Rico, Mayagüez Campus ·
August 2020 - June 2024
M.S. Bioengineering 2024
GPA: 3.62/4.0

University of Puerto Rico, Rio Piedras Campus ·
August 2013 - May 2020
B.S. Discrete Mathematics, Computer Science, Physics 2020
GPA: 3.62/4.0 (Summa Cum Laude)

EMPLOYMENT

University of Puerto Rico, Mayagüez Campus
Teacher Assistant · August 2023 - December 2023
Co-teach Advance Programming Course
C++, Visual Studio Code, Git/GitHub

Teacher Assistant · January 2023 - May 2023
Teach Introduction to Computer Programming I Course
Python, PyCharm

Teacher Assistant · August 2020 - December 2022
Teach Introduction to Computer Programming I Laboratory
Python, PyCharm

Camera Mundi Inc
Remote
TekTrainer · June 2020 - August 2020
Motivate Teachers to fulfill educational courses on integrating technology in their classrooms with Microsoft 365. Create, edit, produce and transmit presentations and videos using Microsoft Teams Live Events. Answer a phone and respond to emails to assist with any technical problems with the courses or their computers. Evaluate daily progress and inform the company of the statistical changes for each school in San Juan District (more than 100 schools/offices - over 3000 participants). Help train other peers on how to use some programs to transmit a Microsoft Teams Live Event, manage the Q&A, and obtain the different reports of attendees.

University of Puerto Rico, Río Piedras Campus
San Juan
Mathematics Tutor · August 2015 - May 2016
Assigned class: Pre Calculus 1, Pre Calculus 2
Additional classes when needed: Introduction to Mathematics, Calculus 1, Discrete Mathematics, University Physics

Self-Employed
Private Tutor · August 2014 - July 2020
School and College tutor.
- Mathematics and Physics courses (all levels)
Teach high school students during summers an introduction to their next class level.

SKILLS

LANGUAGES: Spanish, English, French, Portuguese, American Sign Language
PROGRAMMING LANGUAGES: Python, R, LaTeX, SageMath, Matlab, C++, SQL, Julia, HTML, BNGL, Swift, Arduino
PROGRAMS AND SOFTWARES: Microsoft Office, RStudio, PyCharm, Overleaf, DevC++, Qt, Xcode, RuleBender, BioNetFit, Zoom, Visual Studio Code
OTHERS: Research, Data Science, Data Analysis, Databases, Git / GitHub

STUDENT ORGANIZATIONS

Asociación de Estudiantes de Matemáticas ·
Mathematics Student's Association
2015 - May 2020
President [2015 - July 2019]
Vice-President [August 2019 - May 2020]

Include Girls
January 2015 - May 2020

Society of Physics Students (UPRRP Chapter)
2014 - December 2019
Vice-President [Agust 2019 - December 2019]
Public Relationist [August 2018 - October 2018]
Vice-President [August 2017 - August 2018]
Sub-Secretary [2016 - 2017]
Member [2014 - 2016]

Asociación de Estudiantes de Ciencia de Cómputos ·
Computer Science Student's Association
2015 - October 2018
Secretary [July 2017 - October 2018]
Member [2015 - 2017]

Amereican Meteorological Society (UPRRP Chapter)
May 2017 - March 2018
Secretary · May 2017 - Mar 2018

ONLINE COURSES

Google Career Certificates · Google Data Analytics
Foundations: Data, Data, Everywhere (September 2022)
Ask Questions to Make Data-Driven Decisions (September 2022)
Prepare Data for Exploration (September 2022)
Process Data from Dirty to Clean (January 2023)
Analyze Data to Answer Questions (January 2024)
Share Data Through the Art of Visualization (February 2024)
Data Analysis with R Programming (February 2024)
Google Data Analytics Capstone: Complete a Case Study (February 2024)

HardvardX - Harvard T.H Chan School of Public Health · Fundamentals of Neuroscience
The Electrical Properties of the Neuron (February 2020)
Neurons and Networks (August 2020)
The Brain (May 2021)

HardvardX - Harvard T.H Chan School of Public Health · Data Analysis for Life Sciences Series
Statistics and R (January 2016)
Introduction to Linear Models and Matrix Algebra (February 2016)
Statistical Inference and Modeling for High-throughput Experiments (April 2016)

VOLUNTEERING

Santa Catalina de Siena Parrish · Group: Manos de Esperanza
2022 - Current · Bayamon
Help organize, serve and delivery food to people with needs.

Santa Catalina de Siena Parrish · Catechist
August 2009 - December 2023 · Bayamon
Teach catechism to children and youngsters preparing them to receive different Sacraments.

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RESEARCH

Evolutive screening of candidates for new materials using genetic algorithms and deep learning
May 2022 - August 2022

Graduate Research at the Laboratory for Applied Remote Sensing Imaging and Photonics; UPRM Research & Development Center
Use combinatorial screening to generate all the possible binary, ternary or quaternary compounds for material discovery and later predict their properties. Then, compare the results obtained using a genetic algorithm capable of finding a higher percentage of compounds with specific properties than methods in state-of-the-art, such as combinatorial screening.

Comparison of Residual Neural Network Architectures for Prediction of Multiple Properties of Materials
January 2021 - May 2022

Graduate Research at the Laboratory for Applied Remote Sensing Imaging and Photonics; UPRM Research & Development Center
Study Residual Neural Networks Architectures that aim to predict a specific property of chemical compounds based on their composition and compare the results when modified to predict multiple properties simultaneously.

Comparison of Quantitative Phase Imaging Methods
August 2020 - June 2024

Graduate Research at the Laboratory for Applied Remote Sensing Imaging and Photonics; UPRM Research & Development Center
Compare different quantitative phase imaging methods with our implementation of a portable phase contrast microscopy using a LED Matrix Panel and a mobile phone.

An Exploration of Convolutional Neural Networks
August 2019 - May 2020

Undergraduate Research at the Department of Computer Science; University of Puerto Rico, Rio Piedras Campus.
Explore different configurations and functions to improve the accuracy of a 1-dimensional CNN architecture developed for mapping genetic variation in DNA to morphological change using the wing-color patterns of a group of butterflies (Heliconius spp.).

Creation of Synthetic Households for Public Health
Summer 2019

Summer Internship at the Institute for Mathematical Sciences, National University of Singapore.
Creation of synthetic households in Singapore for epidemic simulations based on the aggregated data obtained from the General Household Survey.

Rule-based Modeling Database
Summer 2018

Summer Internship at the Theoretical Biology and Biophysics Division, Los Alamos National Laboratories.
Create a database containing all the existing rule-based models in the literature. Also, update all the models in the current version of BioNet- Gen Language (BNGL), and use all data found to create benchmark problems for BioNetFit.

Some Reduced Linear Modular Systems and Their Structures
March 2018 - June 2019

Undergraduate Research at the Department of Computer Science; University of Puerto Rico, Rio Piedras Campus.
Studied dynamical systems over the integers modulo p and how they can be represented by matrices whose entries are elements from the integers modulo p.

Automatization for Preprocessing Laboratory Data
August 2016 - July 2017

Undergraduate Research at the Department of Computer Science; University of Puerto Rico, Rio Piedras Campus.
Examined the possibility of automatizing the preprocessing of clinical lab results.

Automatization for Preprocessing Laboratory Data
Summer 2016

Summer Internship at the Department of Biomedical Informatics; University of Pittsburgh.
Examined the possibility of automatizing the preprocessing of clinical lab results. The preprocessing of the continuous (numerical) data was successfully automized.

PUBLICATIONS

David Tatis Posada, María Ramos Álamo, Heidy Sierra, and Emmanuel Arzuaga. Evolutive screening of candidates for new materials using genetic algorithms and deep learning. Proceedings of the 21th LACCEI International Multi-Conference for Engineering, Education and Technology (LACCEI 2023): "Leadership in Education and Innovation in Engineering in the Framework of Global Transformations: Integration and Alliances for Integral Development." 2023.

William S. Hlavacek, Jennifer A. Csicsery-Ronay, Lewis R. Baker, María del Carmen Ramos Álamo, Alexander Ionkov, Eshan D. Mitra, Ryan Suderman, Keesha E. Erickson, Raquel Dias, Joshua Colvin, Brandon R. Thomas, and Richard G. Posner, A Step-by-Step Guide to Using BioNetFit, Modeling Biomolecular Site Dynamics. Methods in Molecular Biology, vol. 1945, pp. 391-419, 2019.