

# Mario Jerez

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## Education

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<b>Doctor of Philosophy in Computer Science</b> , University of Minnesota	Sept 2024 – Present
• GPA: 4.00/4.00	
<b>Bachelors of Arts</b> , Sarah Lawrence College	Sept 2018 – May 2021
• GPA: 3.96/4.00	
<b>International Baccalaureate Diploma Programme</b> , Keystone Academy in Beijing	Aug 2016 – May 2018

## Awards

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**Hispanic Scholarship Fund Scholar (2019)** – merit-based award

## Experience

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<b>Implementation Consultant (Developer)</b> , FAST Enterprises – San Juan, PR	Feb 2023 – Aug 2024
<ul style="list-style-type: none"><li>Created new Incentives Return for taxpayers in Puerto Rico with a small, bilingual team under a tight deadline</li><li>Worked closely with the Department of Treasury in Spanish to correctly validate information submitted by taxpayers while creating an excellent user experience in both English and Spanish</li><li>Transformed business requests into software changes by writing or modifying code in Visual Basic and editing configuration tables</li><li>Researched problems by querying taxpayer data using Microsoft SQL Server Management Studio</li><li>Resolved errors that occurred in the software used by government employees and in the website used by taxpayers, while working in the Production Support team</li><li>Delivered solutions by unit testing, writing test scenarios and working closely with testers, and migrating changes to the Testing, Staging, and eventually, Production environment.</li></ul>	
<b>Full Stack Product Developer</b> , Avolution Inc. – Remote	May 2022 – Sep 2022
<b>Software Consultant</b> , Avolution Inc. – Remote	Aug 2021 – May 2022
<ul style="list-style-type: none"><li>Delivered new software features to specified requirements using the .NET Framework</li><li>Found and fixed software defects</li><li>Provided level 3 support to customers in the Americas, combining knowledge accrued from consulting with software development knowledge</li><li>Designed and recorded the ABACUS REST API course for the Learning Management System</li><li>Delivered online trainings to clients on ABACUS scripting and the ABACUS REST API in English and Spanish</li><li>Developed requested scripts (in VB and C#) for clients who bought expert assistance hours, and worked closely with Enterprise Architects to deliver a product that met their needs</li><li>Developed a custom visualization tools such as stacked bar chart for customers to use around the world</li><li>Wrote articles on the Knowledge Portal with detailed instructions for clients on how to use the scripts and visualizations that I designed</li><li>Trained technical consultants in scripting and the REST API</li><li>Provided Customer Support in the Helpdesk and on video calls</li></ul>	

## Teaching Experience

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<b>Graduate Teaching Assistant</b> , University of Minnesota – Minneapolis, MN	Aug 2024 – Present
<ul style="list-style-type: none"><li>Help manage a class with 250 students and 15 undergraduate Teaching Assistants</li><li>Host weekly office hours to help students with their assignments and improve their understanding</li></ul>	

- Answer Undergraduate Teaching Assistants' questions regarding grading assignments
- Write example solutions for projects and rubrics for assignments
- Proofread exams and project descriptions before they are released to students

**Online Tutor**, GoPeer – Remote

Apr 2020 – Aug 2021

- Tutored students K-College in Computer Science (Python, Java, Javascript), Physics, Mathematics (General, Calculus, Linear Algebra), Spanish, Writing, and Reading in 45 to 90 minute lessons
- Helped students with homework, projects, and wrote personalized assignment to deepen their understanding
- Individually tutored over 50 students and hosted over 500 lessons with 100% Customer Satisfaction Rate (See Reviews)
- Featured as a Top Tutor on GoPeer social media and in article (See Article)

**Mathematics and Calculus Tutor**, Sarah Lawrence College – Bronxville, NY

Sept 2020 – May 2021

**Computer Science Tutor & Lab Assistant**, Sarah Lawrence College – Bronxville, NY

Sept 2020 – Dec 2020

- Tutored College Students in general Mathematics, Calculus I and II, Linear Algebra and Multivariable Calculus for the Math Resource Center
- Hosted regular Zoom sessions to help students understand math concepts and to help them progress in their homework assignments
- Assisted and answered questions in all labs for the Introduction to Computer Science course taught in Python
- Hosted regular tutoring sessions to help students with their programming assignments and final projects

**Teaching Fellow and Residential Assistant**, Keystone Academy – Beijing, China

Jul 2019 – Aug 2019

- Taught presentation skills in English to ESL High School students
- Coordinated games and activities for children in K-12
- Dorm proctored for the English Immersion Program

**Program Mentor**, Keystone Academy – Phnom Penh, Cambodia

May 2019 – June 2019

- Researched the issue of arsenic-contaminated groundwater in Cambodia and wrote a survey for High School students to learn about it
- Guided students in interviewing locals and conducting tests on water samples from various provinces
- Built an affordable water filtration system that utilized rusted nails to remove arsenic from groundwater

## Projects

**Luminescent Ant Foraging**

2024

- Developed a decentralized, multi-agent algorithm where agents use luminescence-based communication to find resources and take them to their nest
- Adapted the Glowworm Swarm Optimization algorithm, a variant of the Ant Colony Optimization algorithm, for finding the resources
- Implemented the algorithm with robots in a simulated environment
- Tools Used: PettingZoo, ROS, Gazebo, Python

## Technologies

**Languages:** Python, Java, Visual Basic, C#, SQL, JavaScript

**Frameworks and Libraries:** ROS, Gazebo, PettingZoo, Django, React, Pytest, .NET, TensorFlow, Keras, NumPy, Pandas, Matplotlib

**Tools:** Git, Visual Studio Code, Microsoft SQL Server Management Studio, Analytic Solver (Excel add-in)