Marcela Moura

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EDUCATION

Bachelor of Science in Data Science, Minor in Applied Physics   May 2026

New Jersey Institute of Technology   Newark, NJ

- Awards:
  - Dean's list all semesters
  - GirlHacks Hackathon– 1st place winner
- Affiliations:
  - Vice President for the Society of Physics Students

SKILLS

Programming Languages: **Advanced:** Python (Pandas, Scikit-learn, NumPy, Matplotlib)

Proficient: SQL (MySQL), JavaScript (React)

Tech Stack: VSCode, Docker, Git, Bash, Jupyter Notebook, Anaconda, Tableau

RESEARCH

Undergraduate Research Assistant   Sep 2024 - Present

Center for Solar Terrestrial Research, NJIT   Newark, NJ

- Developed an **XGBoost model** with **93% accuracy** to enhance space weather forecasting by analyzing space-ground conjunction events
- Optimized the model using the **OPTUNA** framework, achieving a **13% increase in precision** and improving wave-event detection performance
- Selected to present research findings at the **AGU Fall Conference 2025** in New Orleans, LA, showcasing results on the feature importance ranking and model performance

Grace Hopper Research Institute (GHRI) Artificial Intelligence Summer Fellow   Jun 2025 - Aug 2025

Institute for Space Weather Sciences, NJIT   Newark, NJ

- Awarded a $5,000 stipend to conduct a 10-week research project focusing on Earth's magnetosphere
- Engineered **data preprocessing** pipelines for satellite and ground-based datasets with over **1.5 million observations** using **Python**
- Developed **feature enhancements** and **exploratory analyses** using pandas, NumPy, scikit-learn, and Matplotlib to address data gaps and noise

PROFESSIONAL EXPERIENCE

Data Analyst Intern   Jun 2024 - Aug 2024

Prysma Technologies   Union, NJ

- Led data collection and analysis for AI chatbot development using **Microsoft Access** and **Excel** to support accurate, actionable insights
- Created **Tableau dashboards** to visualize trends in loan payments and support decision-making
- Assisted in **project management** tasks, including organizing project files and contributing to the hiring process for team efficiency

PROJECTS

ERICA – AI Tutor   Dec 2025 - Present

Graph-RAG system powering a source-grounded AI tutoring platform for students

- Designed and implemented a **Graph-RAG system** that constructs a **knowledge graph**, retrieves relevant nodes, and grounds **LLM-generated tutoring responses** from sourced data
- Containerized the application with **Docker** and **Dev Containers** for reproducible ML experimentation and deployment

Gaia – innergoddess.tech   Sep 2025 - Present

A greek goddess-themed, campus-specific mentorship app tailored for women

- **Scraped** and **parsed data** from New Jersey Institute of Technology's website using Python and BeautifulSoup
- Built a **Gemini chatbot** with dynamic goddess personas (Athena, Artemis, Aphrodite, Tyche, Gaia) that adapt to user needs
- Designed a sophisticated Greek goddess-themed front-end website using **React** and deployed on a **.tech domain**