Oscar Jaroker

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Education

Colgate University, BA in Applied Mathematics and Physics   Aug 2023 - May 2027

- GPA: 3.97 / 4.00 Overall; 4.00 / 4.00 Major
- **Coursework:** Data Analysis, Computational Statistics, Combinatorics, Real Analysis, Linear Algebra, Classical Mechanics, Nonlinear Dynamics & Chaos, Quantum Mechanics, Electronics, Object-Oriented Programming
- **Awards and Honors:** Edwin Foster Kingsbury Prize, awarded to physics students whose performance and promise is "most outstanding" (May 2024), Dean's Award w/ Distinction (All Semesters)

Experience

Electronics Technician, Geography Laboratory, Colgate University – New York   Sept 2025 – Present

- Integrating CH4 and CO2 sensors with Arduino microcontroller for *AQUA-Flux*, a low-cost autonomous floating chamber for long-term monitoring gasses in wetlands
- Programming Arduino microcontroller for actuator movement, data collection and reporting via I2C-protocol

Teaching Assistant, Art of Problem Solving – New Jersey   July 2025 – Aug 2025

- Prepared students for the Science Olympiad through hands-on demonstrations and experiments in optics, circuits, mechanics, robotics, electricity and magnetism
- Guided 18 students through complex concepts and problem-solving, fostering collaboration and critical thinking

Corporate Treasury Intern, Pfizer – New York   June 2024 – Aug 2024

- Conducted financial research of pharmaceutical industry by coding a drug-industry benchmarking program, accessing Bloomberg data through Python API, to compare key company metrics across peer groups
- Developed pricing simulator for interest-rate swaps using Bloomberg API and R to understand how interest rate movements might affect Pfizer's portfolio
- Communicated results through multiple PowerPoint presentations to Capital Markets, Capital Strategy, Risk Management groups to show how company metrics and potential movements could impact future strategy

Instructor, International Ivy Summer Enrichment Programs – New Jersey   June 2023 – Aug 2023

- Taught Arduino and Makey Makey courses by building off of the existing curriculum to provide half-day instruction to students ages 8-14, developing their collaboration, design, and programming skills
- Awarded bonus as a top instructor based on positive feedback from students and parents

Academic Projects & Activities

"Optimal Harvesting in Stochastic Predator-Prey Environment"   June 2025 - Present

- Applying stochastic control to find optimal harvesting in 2-species fishery following highly nonlinear dynamics
- Using MATLAB to implement numerical methods such as FB Sweep, Euler-Maruyama, Backward Euler

President of Colgate Engineering and Design Club   February 2025 - Present

- Founded organization to build interesting engineering innovation by recruiting interested members, working with Colgate Office of Student Involvement and Physics Department, and completing BAC & leadership training

RIT Physics Olympiad   2024 & 2025

- Won second place out of 23 teams in 2025 and received a cash prize

Skills

Programming: Python (Pandas, Matplotlib), Java, MATLAB, R (tidyr, ggplot2), C++, Mathematica

Language: Spanish (Limited Proficiency)