

# Eugenio D. Macias

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## EDUCATION

### Brown University,

Aug. 2022 – May 2026

MS Applied Mathematics (*Concurrent*) , BS Mathematics-Computer Science

**Providence, RI**

- **GPA:** 4.0
- **Relevant Coursework:** Probability Theory, Real Analysis, Complex Analysis, **ODEs, PDEs, AI, ML, DL**, Investments II, Mathematical Econometrics, Quantum Mechanics, Algorithmic Game Theory, Statistical Inference i-ii.
- **Clubs:** Quant Trading at Brown, PUTNAM Mathematics group, Chess Club, Brown Union of Global Students

United World College (\$40,000/year scholarship), **IB:** 42/45

**Bosnia & Herzegovina** | 2020 – 2022

## EXPERIENCE

### Citi, Quantitative Analyst Intern (*incoming*)

**New York City** | Jun. 2025 – Aug. 2025

- Selected for a competitive internship program focused on developing quantitative strategies in financial markets.

### DE Shaw & Co, Fellowship

**New York City** | Apr. 2024 – May 2024

- Collaborated in in-depth discussions on quantitative trading, exploring statistical and machine-learning techniques
- Explored innovative projects in software development for financial applications, emphasizing high-frequency trading systems
- Analyzed the integration of probabilistic models and ML frameworks to improve trading decision-making processes.

### Bridgewater Associates, Investment Immersion Program

**Westport, CT** | Feb. 2024 – Mar. 2024

- Engaged in case studies and workshops led by senior researchers, exploring financial models and investment strategies.
- Learned about alpha and beta engines, as well as **ML** algorithms for financial modeling and automatized investments

### Point 72 & Correlation One, Data Scholar

**Remote** | Apr. 2024

- Conducted data science case studies to forecast airline revenue using Python libraries like Pandas and Matplotlib
- Intensive training program focused on leveraging data science, alternative data sources, and AI/ML within the hedge fund industry

### Buddywise, Founder's Associate Intern

**Berlin, Germany** | May 2023 – Jul. 2023

- Streamlined dataset integration for ML and computer vision pipelines, reducing processing time by 30%.
- Secured \$50,000 in Mixpanel credits to analyze UI metrics, boosting KPI visibility by 40%.

## PROJECTS

### Research: *Fourier Analysis and Laplace's Equation*

- Wrote a 50-page research paper in Real Analysis and Linear Algebra: complex-real function theory, convergence criteria
- Explored the importance of Fourier Series to Laplace's 2-D Equation solution space with 4 Boundary Dirichlet conditions

### Personal Portfolio: (*HTML, CSS, JavaScript, GitHub Pages*)

- Designed and developed a personal portfolio website using **HTML**, **CSS** for styling, and **JavaScript** for special effects.
- Deployed the site using GitHub Pages for continuous updates and accessibility across devices.

### Go Hybrid Agent: (*PyTorch, NumPy, OpenSpiel*)

- Built an AI agent for Go using **neural networks** for policy-value estimation, integrated with Alpha-Beta and **Monte Carlo** Trees
- Achieved a 60% win rate against baseline models and validated performance through cross-validation.

### Blackjack ReinforcedAI: (*Python, NumPy, Gymnasium*)

- Developed an AI for Blackjack using Markov Decision Processes (**MDPs**) based on player totals, visible cards, and usable aces.
- Implemented **value-intervention** for policy optimization (43% win rate) and **Q-learning** for off-policy exploration (41% win rate).
- Conducted **Monte Carlo simulations** across (100,000 episodes) to evaluate policy performance and refine state-action transitions

## AWARDS

- **Citadel Invitational Terminal 2024:** Selected for a competitive trading hackathon by Citadel & Citadel Securities.
- **PUTNAM 2023:** Top 20% scorer in the leading university-level mathematics competition.
- **IYMC:** **Silver Medalist** in the mathematics open category 18+
- **STEM Olympiad:** **1st place** in Math-Geo-Tech (National, BiH); **13th** globally out of 4,000+ participants.
- **Shelby Davis Scholar:** **Full scholarship** award for undergraduate studies at Brown University
- **SBFS 2023:** Exploration award to learn from financial professionals working in NYC
- **GSSA 2024:** Exploration award in Berlin and Leipzig to study cultural dynamics of East & West Berlin

## SKILLS & INTERESTS

**Skills:** Python, Java, C++, TensorFlow, **PyTorch**, **NumPy**, **Pandas**, **Scikit-learn**, Docker, GitHub, STATA

**Languages:** Spanish (Native), **English** (Fluent), German (B1), French (B1).

**Interests:** Competitive Chess (**2000+ ELO**), Mathematical Topics, Classical Guitar (**National 2nd Place**), World Travel (30 countries)