

# Eugenio Macias

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## EDUCATION

**Brown University**, *B.S. Applied Mathematics–Computer Science, B.S. Statistics*

**Providence, RI | Class of 2026**

- *Recipient of full scholarship, GPA: 4.0*
- **Relevant Coursework:** Data Structures, Design of Algorithms, Linear Algebra, Statistics I-II, Differential Equations I-II, Computer Systems, Abstract Algebra, Econometrics I & II, Complex and Real Analysis, AI, Macroeconomics II, Topology
- **Clubs:** Quant Trading at Brown, Poker Club, LATAM Society, Brown Chess

**United World College (UWC)**, *International Baccalaureate*

**Bosnia & Herzegovina | Class of 2022**

- Shelby Davis Scholar: Awarded **\$40,000/year scholarship**

## EXPERIENCE

**Scale AI**, *Incoming Software Engineer*

**Remote | 09/2024-12/2024**

- Evaluate AI-generated code, develop robust test-cases, and develop new platforms for AI functionalities

**D. E. Shaw & Co.**, *Fellowship*

**New York City, NY | 04/2024-05/2024**

- Engaged 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

**Bridgewater Associates**, *Investment Immersion Program*

**Westport, CT | 02/2024-03/2024**

- Participated in markets sessions, and case-studies led by senior investment associates, engineers, and quantitative researchers
- Learned about *alpha* and *beta* engines, as well as ML algorithms for financial modelling and automatized investments

**Buddywise**, *Founder's Associate Intern*

**Berlin, Germany | 05/2023 – 07/2023**

- Oversaw researching and implementing datasets into the data pipeline for the ML-algorithms
- Secured a \$50,000 Mixpanel credits award to conduct comprehensive analysis of Buddywise UI metrics and KPI's

## PROJECTS

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

- Authored 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

**Time-Series Forecasting** (Python, *ongoing*)

- Implemented a *time series* predictor algorithm in Python utilizing *Bollinger-bands* and *Monte-Carlo* Simulations.
- Utilized changepoint detection, multiple linear regressions, *ARIMA* models, and *Matplotlib-Seaborn* for visualizations
- Employed the Etrade *API* for real-time data and parsed index pricing and variance statistics using *XML Etree* Libraries

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

- Designed and developed a personal portfolio website using HTML, CSS for styling, and JavaScript for special effects.
- Hosted the website on GitHub Pages for continuous deployment and accessibility to different devices

**Decision-Tree Algorithm** (*Java*)

- Implemented a ML *decision-tree* algorithm in Java that achieved up to **96% accuracy** in CSV large datasets
- Utilized tree structures and classification algorithms enabling decision-making based on input features and a *CSV parser*

**Game-AI** (*ReasonML*)

- Implemented a Connect-4-game calculator and module for MxN-board dimensions using matrix representations
- Assigned numerical values to a *Mini-Max* Algorithm allowing the AI to outperform 100% of human moves

**Graph-Optimizer Algorithm** (*Python*)

- Created a graph algorithm that optimizes edge-paths based on cost, distance, time- efficiency, and customizable parameters
- Employed graph structure algorithms like Dijkstra, BFS, and DFS. Tested with graphs with 500+ vertices and edges

## AWARDS

- **PUTNAM 2023:** Represented Brown in leading mathematics competition (**top 20% scorer**)
- **POINT72 Data Scholar:** 1/50 students selected to participate in the Data Scholar Program by Point72 & Correlation1
- **IYMC 2022:** Obtained the **Silver Medal** in the mathematics open category (18+)
- **STEM Olympiad 2022:** **1<sup>st</sup> place** in the National Exam (BiH), **13<sup>th</sup> place** in the Global Ranking (4600 students)
- **Brown Financial Services 2023:** Exploration award to learn from (VC, IB, PE) financial analysts working in NYC
- **GFA:** Secured **2<sup>nd</sup> & 3<sup>rd</sup> place** in the National Classical Guitar Competition in Mexico. GFA in USA.
- **AMP:** Brown Applied Music Program for advanced-level classical musicians. 3 final solo-recitals (**audience 150+**)

## SKILLS & INTERESTS

**Skills:** Proficient in Excel, PowerPoint, Word. **Spanish** (native), **English** (native), **German & French** (B1 proficient).

**Programming Tools:** Python, Java, C, C++, R, LaTeX, STATA, ReasonML, DrRacket, Docker, GitHub

**Specializations:** Python Data Science (*IBM*), Capital-Options (*Akuna Capital*)

**Interests:** Chess (+1940 ELO), Classical Guitar, Climate-Change Solutions, Travelling the World