Casey Arbelaez

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# Education

**Northwestern University** Evanston, IL

*Bachelor of Science in Computer Science* GPA: 3.75 *Anticipated Jun. 2027*

Relevant Courses: *Data Structures and Algorithms, Multi-variable Calculus, Economics and Finance for Engineers, Linear Algebra, Data Management and Information*

**Doral College** Doral, FL

*Associate in Arts - Summa Cum Laude Aug. 2020 – May 2023*

# Skills

**Languages**: Python, Excel, JavaScript, HTML/CSS, Matlab, SQL

**Frameworks**: React

**Developer Tools**: VS Code, PyCharm, Jupyter

**Interpersonal**: Creativity, Communication, Teamwork, Leadership, Problem-Solving, Collaborative, Detail oriented, Accountable, Organized, Curiosity, Active-Learner

# Experience

**Data Entry Assistant** Jun. 2022– June 2023

*Pixel Neon Studios Glenvar Heights, FL*

* Created a Financial Spreadsheet using Excel to map annual projected revenue growth
* Accomplished a 10% increase in internal productivity by implementing an Inventory Management System using Excel on 100+ different items

**Manufacturing Assistant** Jun. 2020 – Jan. 2022

*Pixel Neon Studios Miramar, FL*

* Communicated with 120+ clients and translated several emails to initiate sales and facilitate communication
* Planned and independently executed the electrical circuitry of 100+ Neon signs, improving revenue by 20%
* Worked in inventory management by tracking item quantities and reporting item re-stocks in order to prevent operation delays or manufacturing complications

# Projects

**Portfolio Optimization Program** *| Python, SciPy, Yahoo Finance, NumPy* Nov. 2023 - present

* Developed and integrated a robust stock portfolio optimization program based on Markowitz Optimization and leveraged statistical methods to allocate assets and achieve optimal risk-return trade-offs
* Employed advanced quantitative techniques by incorporating a Sequential Least Squares algorithm to fine-tune portfolio weights. This optimization approach ensured a precise adjustment of asset allocations, maximizing returns while minimizing risk in dynamic market conditions

**Digit-Recognizer with Machine Learning** *| Python, NumPy* Jun. 2023 - Oct. 2023

* Constructed a 2-layer Neural Network, from scratch, to recognize hand-written digits on a 28x28 pixel grid
* Trained the Neural Network with over 40,000 samples of training data, and achieved 90% accuracy with a 1,000-sample data set

**PageRank Algorithm** *| MATLAB* Sep. 2023 - Oct. 2023

* Programmed an iterative algorithm using linear algebra and MATLAB to determine the importance of each web page in a 1 million page internet
* Optimized the solution process by implementing memory-efficient data structures to decrease latency and improve program performance by 35%

# Honors and Awards

**QuestBridge National College Match** *| Awarded by QuestBridge* Dec. 2022

* Awarded a full-ride scholarship to Northwestern University worth over $350,000+ for high achieving students from underrepresented backgrounds (first-generation and low-income)

**National Hispanic Recognition Award** *| Awarded by College Board* Aug. 2022

* Received the National Hispanic Recognition Award, which identifies and honors Hispanic students who have a 3.5+ GPA and scored highly on the PSAT exam