# ARJUN SINGH

◇ Short Hills, NJ ◇ He/Him/His ◇ LinkedIn

## EDUCATION

**Washington University in St. Louis** <div align="right">Expected Graduation: May 2025</div>

BS in Computer Science and Mathematics, Minor in Finance

Cumulative GPA: 3.85, Major GPA: 3.93

Dean's List, SAT: 1560

## WORK EXPERIENCE

**Portfolio Management Intern**, *NISA Investment Advisors* <div align="right">June 2024 - Present, *St. Louis, MO*</div>

- Developed a Python and SQL script to process thousands of futures and options client holdings from Quantitative Investment Strategy indexes, resulting in a 25% increase in data efficiency and establishing a data pipeline for analysis
- Conducted option attribution analysis on a QIS index using Python and Excel to evaluate the performance of a tail-risk hedging strategy across various economic conditions, yielding insights for enhancing investment strategies
- Leveraged Gurobi and Python for portfolio optimization, enhancing credit portfolio efficiency and maximizing returns while effectively managing risk for over 5 client portfolios
- Performed exploratory data analysis on total return swap funding spreads and developed a predictive model using LSTM machine learning, resulting in a 15% increase in prediction accuracy

**Teaching Assistant**, *Intro. to Data Science* <div align="right">Aug 2023 - Present, *St. Louis, MO*</div>

- Led a team of 10 students on data science projects using Python, covering neural networks, deep learning models, feature selection, logistic regression, and probabilistic classification

**Management Consulting Intern**, *Avasant* <div align="right">May 2023 - August 2023, *Los Angeles, CA*</div>

- Analyzed the impact of AI/ML and blockchain technologies, leading to increased billing efficiencies, real-time analytics, cost reductions, and streamlined revenue cycle management (RCM) operations for over 12 provider companies
- Developed a proprietary RCM value chain format for Avasant consultants, resulting in a more streamlined and efficient client meeting process

**Research Assistant**, *Berezin Lab* <div align="right">September 2022 - November 2023, *St. Louis, MO*</div>

- Conducted 3-dimensional image processing of over 30 axons in mice, resulting in the identification of key anomalies
- Utilized Python to process, correct, and analyze microscope images in Fiji

## FINANCE & CODING PROJECTS:

**Microsoft Stock Analysis (link)** <div align="right">April 2023</div>

- Engineered an options pricing model using Black-Scholes and Cox-Ross-Rubinstein formulas, achieving implied volatility calculations within 3% of market values
- Implemented and optimized bisection algorithms in MATLAB to automate volatility estimations across multiple strike prices and expiration dates, accompanied by plotted implied volatility surfaces

**Equal-Weight S&P 500 Index Fund (link)** <div align="right">May - June 2023</div>

- Developed an equal-value index fund from market data using Python (Pandas, XlsxWriter) and IEX Cloud

## LEADERSHIP & ACTIVITIES

**Treasurer & Editor**, *Frontier's Magazine* <div align="right">September 2021 - Present, *St. Louis, MO*</div>

- Raised and managed over $3,000 for magazine printing, panels and other events
- Collaborated with a team of writers as an editor to publish over 20 articles on healthcare-related topics

**Recruitment Chair, Treasurer**, *WashU Powerlifting Team* <div align="right">September 2021 - Present, *St. Louis, MO*</div>

- Presented to over 100 students about the club and led the initiative to recruit around 20 members selectively
- Raised and managed over $5,000 for competitions and lifting gear

## TECHNICAL SKILLS & INTERESTS

**Skills:** MATLAB, Octave, Java, Python, R, SQL, C, C++, HTML/CSS, LaTeX, Bloomberg Terminal, Visual Studio Code, GitHub, Microsoft Office (Excel, Powerpoint, Word), English (native), Mandarin (fluent), Hindi (beginner)

**Courses:** Stochastic Processes, Machine Learning, Linear Statistical Models, Financial Math, Data Mining, Artificial Intelligence, Algorithms, Probability, Linear Algebra, Discrete Math, Data Structures, Capital Markets, Accounting

**Interests:** Poker, Chess, Powerlifting