# Atishay Narayanan

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## EDUCATION

**Princeton University** Princeton, NJ

*Bachelor of Arts in Mathematics, Minors in Computer Science and Classics* *May 2027*

- **GPA:** 3.74/4.00
- **Relevant Coursework:** Game Theory, Algorithms and Data Structures, Probability and Stochastic Systems, Computational Models of Cognition, Graph Theory, Fourier Analysis, Partial Differential Equations, Abstract Algebra, Complex Analysis, Multivariable Calculus, Linear Algebra
- **Awards:** Pathfinder Mathematics (1st Place), Samuel Bayard Dod Scholar, National Merit Scholar

## EXPERIENCE

**Quantum Machine Learning Researcher** May 2025 – July 2025

*SenSIP Lab, Arizona State University* *Tempe, AZ*

- Developing Quantum-Classical hybrid GPT models for image generation tasks using PyTorch and Pennylane
- Demonstrated feasibility of quantum self-attention for transformer models
- Created one of the first applications to integrate a Quantum Mixed-State Attention Network
- Observed a 10% increase in PSNR compared to classical models

**Teaching Assistant** September 2024 – Present

*Princeton University Computer Science Lab* *Princeton, NJ*

- Teach 250+ new computer science students algorithms and data structures concepts in Java
- Guide students through object-oriented design principles
- Assist students with debugging projects

**Investment Associate Intern** May 2024 – July 2024

*SPHERE Investments* *Miami, FL*

- Designed an exhaustive database of 1000+ potential limited partners in Excel for an asset management firm focused on healthcare real estate
- Surveyed international clinical services and formulated an extensive report on investments into patient care hotels
- Conducted due diligence with healthcare executives to determine whether investments would improve hospital resource allocation and patient outcomes

## PROJECTS

**Advantages of Confirmation Bias in Bayesian Inference** September 2025 – December 2025

- Designed and simulated Bayesian Agents with assymetric learning rates in Python to model confirmation bias (positive factual learning rate) in learning stationary and non-stationary Bernoulli distributions
- Evaluated agents on convergence speed and accuracy, via MSE, over 1000+ trials
- Demonstrated that a low-degrees of confirmation bias – roughly 10-25% – can improve short-term convergence but degrade long-term accuracy, concluding that the advantages of confirmation bias are time-scale dependent

**Momentum Trading** June 2024

- Engineered a mid-frequency momentum signal trading project in Python with 20+ years of data points for historical DJIA stock price data scraped from the internet
- Designed a back tester to analyze various performance metrics, including Sharpe ratios, drawdown, and turnover for multiple trading strategies on several signals

## SKILLS & INTERESTS

**Programming Languages:** Python, Java, JavaScript, LaTeX, HTML/CSS, SQL
**Libraries:** PyTorch, Pandas, NumPy, Scikit, Pennylane, Braket, Matplotlib
**Tools**: Git, AWS, Jupyter, VS Code, IntelliJ, PyCharm
**Languages:** English (Native Speaker), Hindi (Native Speaker), Spanish (Conversational)
**Interests:** Crossword Construction, Golf, Chess, Mechanical Keyboards, Football, Poker