

# Akhilesh Narayan

Chicago, IL | 773-808-4314 | [akhilesh@uchicago.edu](mailto:akhilesh@uchicago.edu) | [linkedin.com/in/akhilesh-narayan/](https://www.linkedin.com/in/akhilesh-narayan/)

## EDUCATION

### The University of Chicago

Chicago, IL

#### Master of Science in Financial Mathematics

Expected December 2025

- Courses: Probability & Stochastic Processes, Option Pricing, Portfolio Theory & Risk Management, Python

### Indian Institute of Technology Bombay

Mumbai, India

#### Bachelor of Technology in Mechanical Engineering (GPA: 3.8/4)

May 2024

- Minor in Data Science and Artificial Intelligence
- Courses: Probability and Statistics, Linear Algebra, Calculus, Regression Analysis, Machine Learning, Game Theory and Decision Analysis, Optimization Models, Financial Economics, Data Science

## SKILLS

**Computing:** Python, Jupyter, MATLAB, MS Excel

**Knowledge:** Financial Markets, Machine Learning, Option Theory, Data Analytics, Econometrics

**Python Libraries:** Pandas, NumPy, SciPy, Matplotlib, scikit-learn, TensorFlow, Keras, PyTorch, cvxpy

**Certifications:** Deep Learning Specialization (Coursera), Quantitative Trading Winter School by IIT Delhi and Optiver

## EXPERIENCE

### Texas A&M Engineering Experiment Station

(Remote) College Station, TX

#### Undergraduate Research Assistant

September 2022 - December 2023

- Enhanced machining process of fuel capsules by processing high-speed camera footage using Nvidia's Kaolin library and computer vision techniques, leading to increased efficiency
- Extracted and analyzed translation and rotation parameters of fast-moving shells from blurred images using TensorFlow-based deep learning algorithms
- Modified deep learning models by refining loss functions and introducing regularizer terms to incorporate continuity of subsequent frames, optimizing the machining process

### University of Toronto and SS&C Technologies

Toronto, Canada

#### Research Intern

May 2023 - July 2023

- Conducted extensive literature review of AI and Large Language Models in finance; utilized prompt engineering and GPT-4 API to create and optimize investment portfolios
- Enhanced AI-generated portfolios with Markowitz MVO and cardinality-constrained optimizations in Python using cvxpy library and CPLEX solver, outperforming the market in terms of returns and volatility
- Analyzed and compared performance of various portfolios generated based on metrics such as returns, volatility, Sharpe Ratio, VaR and maximum drawdown
- Discovered novel findings led to work being published in Operations Research Forum journal [DOI]

### Quolam Business Solutions

Mumbai, India

#### Developer Intern

October 2021 - December 2021

- Initiated project on automated healthcare insurance claim authorization; transitioned data from Google Sheets to provider's portal
- Developed Python bots for efficient claim management; increased processing speed by 50%, ensuring real-time data synchronization
- Integrated feature for on-the-fly PDF generation, reducing manual form-filling errors by 20%, streamlining patient report uploads

## EXTRACURRICULAR

### Indian Institute of Technology Bombay

Mumbai, India

- Represented team and country at Formula Student 2022 in Silverstone, UK as car driver and engineer for IIT Bombay Racing Team, showcasing leadership and engineering skills
- Finished 2nd place in Freshiesta Poker Tournament organized in IIT Bombay for all freshmen
- Played professional level soccer as part of IIT Bombay Football Team in MDFA Division 2 league
- Volunteered as student mentor mentoring underprivileged school students in an online Math Workshop

### UCMAS

Mumbai, India

- Completed all 8 levels of Abacus demonstrating advanced proficiency in mental arithmetic and numeracy

**Interests:** Poker, soccer, electronic keyboard, puzzles, scrabble, traveling and exploring new cultures