Aryamaan (AJ) Jena

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Education

- **University of Chicago** — Chicago, IL
  Master of Science in Financial Mathematics; Financial Data Science — *Sep 2021 – Dec 2022*
- **SP Jain School of Global Management** — Sydney, Australia
  Bachelor of Science in Data Science; Machine Learning — *Sep 2018 – Jun 2021*

Research Experience

- **Harvard Business School** — Boston, MA
  Research Associate; Profs. Victoria Ivashina & Josh Lerner, Finance and Entrepreneurship — *Jan 2023 - Jun 2024*
  - **Portfolio Optimization**: Designed Mean-Variance and Black Litterman Portfolio Optimization simulations in Python to estimate the Cost of Illiquidity on Expected Returns, and the Smoothing Parameter of Volatility of Alternative Assets; made various statistical analyses for return attribution and portfolio performance.
  - **Econometric Data Science**: Constructed a pipeline in Python to build a Big Dataset of all financial firms in the US; applied Synthetic Control Methods to forecast the performance of innovative firms in the absence of a merger.
- **Booth School of Business** — Chicago, IL
  Research Assistant; Prof. Dacheng Xiu, Econometrics and Statistics — *Jan 2022 - Jan 2023*
  - **Zillow**: Developed supervised machine learning regression models: linear, regularized, and non-parametric to predict real estate pricing error; detailed systematic factors of data contributing to the space of pricing error.
  - **LendingClub**: Developed supervised machine learning classification models: linear, regularized, and non-parametric to predict default rate; created Assignments and Lecture Content from material studied in the project, with expositions and explanations of various machine learning theory topics for MBA students.
- **Indian Statistical Institute** — Kolkata, India
  Summer Research Assistant; Prof. Tanujit Chakraborty, Operations Research — *May 2019 - Jul 2019*
  - **Machine Learning**: Readings in Ensemble & Hybridized Machine Learning.
- **Teaching**: BUSN 41813 - Decoding FinTech (Prof. Dacheng Xiu), BUSN 20820/41203 - Financial Econometrics (Prof. Jeffrey Russell)

Professional Experience

- **Cboe Global Markets** — Chicago, IL
  Derivatives Strategy Analyst Intern; Cboe Labs — *Jun 2022 – Dec 2022*
  - **VIX and iBoxx Indices**: Numerically developed the series level filtering algorihtm for VIX smoothing; automated the broad based index test for the iBoxx index using a self designed SEC EDGAR API in Python.
- **Pareto Frontier Capital** — Chicago, IL
  Quantitative Researcher Intern; Data Science — *Oct 2021 – Jan 2022*
  - **PCA**: Led the data science team developing supervised and unsupervised machine learning models for cryptocurrency trading signals; created a framework using Principal Component Analysis to improve trading signals.
- **Adaptive Investment Solutions** — Boston, MA
  Quantitative Analyst Intern; Quantitative Developnent — *Aug 2020 – Jan 2021*
  - **Pandas and NumPy**: Developed a Tail Risk Hedging model.

Skills

- **Programming**: Python, R, SQL, LaTeX **Data Science**: NumPy, Pandas, Sci-kit Learn, SciPy, Statsmodels
  Knowledge: Machine Learning, Predictive Modeling, Quantitative Research, Financial Data Science