Arya Buddha

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Education

Purdue University *GPA 3.61/4.0*
B.S. in Computer Science & B.S. in Mathematics (Minor in Finance) *Expected May 2027*
- Concentrations in **Machine Learning**, **Software Engineering**
- Relevant coursework: Probability Theory, Statistical Inference, Stochastic Processes, Time Series Analysis, Machine Learning, Data Structures & Algorithms, Databases, Optimization, Linear Algebra, Multivariable Calculus.

Experience

Primary Record *May 2024 – Aug 2024*
Data Science Intern *Fishers, IN*
- Engineered a streaming ETL pipeline ingesting **10M+ daily events** into a cloud warehouse (Snowflake), enabling sub-second SQL queries for marketing attribution.
- Deployed RESTful endpoints serving real-time predictive scores to **Power BI** dashboards consumed by senior leadership to optimize campaigns, driving a **5% lift** in conversion.
- Containerized micro-services with Docker and orchestrated CI/CD on AWS, maintaining a **99.9%** service-level availability.

PurdueTHINK Consulting *Jan 2024 – Present*
Lead Quantitative Analyst *West Lafayette, IN*
- Modeled patient-flow dynamics as a Poisson process and ran Monte Carlo simulations to optimize digital wayfinding; projections indicated a **38%** reduction in average wait times.
- Applied hypothesis testing on **50K+** visit records to identify statistically significant traffic bottlenecks, informing interface redesigns with measurable accessibility gains.
- Built interactive Tableau dashboards that auto-refresh from Snowflake, giving stakeholders real-time KPIs and driving data-driven signage deployment decisions.

Epitome Research and Innovations *Jan 2022 – Jan 2024*
Machine Learning Engineer *Remote*
- Led a team of **4** to architect an **unsupervised anomaly-detection** platform for the **U.S. Department of Defense**, processing **1TB+** of flight-path data daily.
- Leveraged Spark Streaming and AWS S3/Athena to build a real-time analytics lake, achieving **30%** faster detection of route anomalies.
- Implemented HDBSCAN clustering and temporal feature engineering in Python, producing an **ROC-AUC of 0.93** and reducing false positives by **25%**.

Projects

Equity Alpha Signal Generator (Personal) *Jul 2023*
- Scraped **15 years** of daily OHLCV and fundamental data for S&P 500 constituents; engineered **200+** technical and fundamental factors.
- Trained ensemble models (XGBoost, LSTM) to predict 5-day forward returns; achieved an **Information Ratio of 1.6** in walk-forward tests.
- Back-tested portfolio construction and risk controls using vectorized NumPy; strategy delivered **12% annualized alpha** after transaction costs.

HSE Apps |Founder/President | [Link](#) *Aug 2021 – Jun 2022*
- Directed a **10-member** team building ReactJS tools with **2000+** daily users; implemented A/B testing and analytics pipelines to guide product iterations.
- Established CI/CD workflows on Google Cloud Platform, containerizing services (ExpressJS + MongoDB)

Skills and Interests

Programming Languages: Python (NumPy, pandas, PyTorch), C/C++, Java, JavaScript/TypeScript, R, Go, SQL
Data & Analytics: Time Series Analysis, Machine Learning, Statistical Modeling, Apache Spark, Hadoop, Kafka, Snowflake, AWS, GCP, ETL/CI/CD
Software/Tools: Docker, Kubernetes, Linux, Jenkins, Nginx, Redis, ReactJS, Node.js/Express, Tableau, Power BI
Soft Skills: Analytical Thinking, Communication, Leadership, Time Management, Collaboration, Self-Motivation
Interests: Quantitative Finance, Portfolio Optimization, Texas Hold'em, Chess, Tennis, Snowboarding, Real Estate