Shreya Vontela

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Professional Experience

Discover Financial Services, *Lead Data Scientist* **Jan 2023 – May 2024***(WA, USA)*

Loan Portfolio Analysis and Monitor Hub

- Analytics lead for General & Specialized Servicing ; delivered in-depth portfolio analysis visualizations in Tableau.
- Instrumental in developing the Monitor Hub project, creating controls to identify and analyze fail points at both granular and enterprise levels, leading to improved risk mitigation and operational efficiency.
- Authored monthly delinquency reporting, with loss mitigation numbers, complying with regulatory standards.

Leadership and Data Stewardship

- Led data stewardship initiatives and created roadmaps, ensuring data quality and seamless vendor integration.
- Acted as analytics team liaison, ensuring alignment with external vendors (Dovenmuehle Mortgage Inc. & WGS) .

Aspen Capital, *Data Scientist* **June 2022 – Jan 2023***(OR, USA)*

- Designed a strategy to offer second mortgages and credit cards to existing borrower pools by leveraging TransUnion and CoreLogic datasets. *(Modeling Default probability and Lending rates)*

PennyMac, *VP of Data Science* **May 2021 – May 2022** *(CA, USA)*

Loan Status Disposition Model

- Built an end-to-end framework of Light GBM classification models using real time credit variables to predict the loan disposition (six possible outcomes) over next 24 months. (~$25M revenue in the GNMA EBO loan space)

Prepay Default Model

- Built a neural network on a large dataset (~1 TB) to predict the conditional probabilities of prepayment and various delinquencies to manage interest and credit risk of the mortgage portfolio.
- Performed extensive EDA to uncover how different loan specific and macroeconomic estimators (from Moody's) have a nonlinear relationship with the borrower prepayment behavior. (Ex. Unemployment, Hurricanes)

CalPERS, *Investment Associate Intern* **Sept 2020 – Nov 2020** *(CA, USA)*

- Built a *linear programming model* to design an index future roll strategy that minimizes the roll cost. *[Code]*
- Calculated incremental financing costs for stressed liquidity portfolio by comparing collateral REPO & OIS rates.

JPMorgan Chase & Co, *Quant Researcher (Credit Risk)* **April 2019 – March 2020** *(India)*

- Developed a *quadratic regression model* to capture the non-linearity between discount factor and discount rate.
- Clustered the loan portfolio into 13 segments by using *K means algorithm and EDA techniques.*

Goldman Sachs, *Asset Management Intern* **April 2018 – June 2018** *(India)*

- Interned as a pension fund advisor for a $2B AUM client in a multi-asset class macro investment strategy team
- Built *excel based tool* to spot investment opportunities across 26 country indices using earnings & sales values

Bank of America Merrill Lynch, *Developer, Best employee Award* **July 2015 – June 2017** *(India)*

- Developed a framework for real-time trade data settlement & reconciliation of global Equity & Forex derivatives
- Automated the reconciliation of end of day transactions of banks nostro accounts *(Saved 300+ man hours)*

Machine Learning Industry Projects

Academic/ Personal Projects/ Blogs

- Modeled the probability of default of *Lending Club loans* and calibrated the XGBoost model *[Code]*
- Built multivariate time series model using RNN (GRU layer & recurrent dropout) to predict Bitcoin prices*[Code]*
- Performed *PCA on 130 features & used XG Boost Classifier* to model trading for Jane St Kaggle Project *[Code]*
- Built a convex portfolio optimization model to perform asset allocation based on Sharpe ratio (*87% return*)
- Tourism Industry Trading Strategy - Built a neural network with adaptive LR to predict casino stock price *[Code]*

Education

University of California, Berkeley – Haas School of Business, *Master of Financial Engineering* **2020 – 2021**

Indian Institute of Management, India *MBA (Exchange at EMLYON Business School, France)* **2017 – 2019**

Birla Institute of Technology and Science (BITS), India, *Bachelor of Technology in Electronics Engineering* **2011 – 2015**

Skills

- **Certifications**:Deep Learning, TensorFlow(Coursera)
- Regression, Random Forest, XGBoost, CNN, RNN, NLP, Python, Scikit-learn, Tableau, Git, SQL and AWS SageMaker