

Suhrit Lavu

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EDUCATION

Texas A&M University | College Station, Texas

Expected Graduation: May 2025

B.S. - Computer Science | Minors: Statistics, Mathematics

Cumulative GPA: 4.0

Craig and Galen Brown Engineering Honors Program

Relevant Coursework: Linear Algebra, Data Structures and Algorithms, Discrete Mathematics, Differential Equations, Multivariable Calculus, Principles of Statistics, Mathematical Probability, Design and Analysis of Algorithms

EXPERIENCE

Rath Research | *Incoming Quantitative Trader*

Aug 2023

- Selected as a quantitative trader for the quantitative investing arm of the Reveille Fund (student-led investment fund)

Coordination Centric | *Data Science Intern*

May 2023 - Aug 2023

- Designed **SQL** queries to extract and aggregate data from patient database, enabling analysis of patient behavior
- Modeled patient adherence using **Markov chains** and **XGBoost**, achieving respective AUROC's of 0.94 and 0.95
- Developed a hypertensive event early warning system using an **LSTM** in **TensorFlow**, achieving 0.88 AUROC

Population Informatics Lab | *Undergraduate Research Assistant*

Sep 2022 - May 2023

- Built a data pipeline for patient time-series blood pressure data for variable sliding window lengths using **Pandas**
- Performed feature engineering and EDA, including backwards feature elimination, outlier detection, categorical encoding, correlation analysis, and missing value imputation to generate insights and prepare data for modeling
- Tuned **logistic regression**, **random forest**, & **XGBoost** models with k-fold CV, achieving 0.75 AUCPR/0.83 AUROC
- Developed a composite risk score equation through time to event analysis, improving AUCPR to 0.79/AUROC to 0.8
- Implemented a dual-stage attention based **RNN** in **PyTorch**, achieving 0.84 AUCPR and 0.91 AUROC

Computer Vision Lab | *Undergraduate Research Assistant*

Sep 2022 - May 2023

Physics Based Deep Learning | *March 2023 - May 2023*

- Implemented MoE-PINN and Relative Loss Balancing with Random Lookbacks in **TensorFlow** to approximate solution to the PDE modeling the motion of a bouncing particle

Furniture Geometry Generation | *Sep 2022 - March 2023*

- Scraped dataset of over 150,000 images of furniture using **Scrapy** for use in Generative Adversarial Network (GAN)
- Trained a CNN with **PyTorch** and **OpenCV** to detect frontal view of furniture using transfer learning on VGG16 network, achieving 98% accuracy
- Implemented DCGAN and WGAN-GP using PyTorch to generate images of chairs, achieving an FID score of 11.89

PROJECTS

Book Recommender System

- Trained a neural collaborative filtering (NCF) model using the NeuMF architecture, achieving 0.85 AUROC
- Built a hybrid book-to-book recommender by aggregating learned embeddings from NCF and **content-based filtering**
- Performed clustering on item embeddings using **K-Means** to enable efficient candidate generation

Music Topic Modeling

- Built a data pipeline to upload music data scraped via Genius API and **BeautifulSoup** to **PostgreSQL** database
- Performed topic modeling using Latent Dirichlet Allocation (LDA) in **Gensim**, achieving a coherence score of 0.34
- Visualized results of topic modeling with interactive charts in **Altair** after dimensionality reduction via **UMAP**

Stock Forecasting

- Modeled close price of 4 stocks using **ARIMA**, achieving RMSEs of 2.5/1.4/ 4.2/4.4 & MAPEs of 1.2%/1.3%/2%/3%
- Modeled volatility of returns across three stocks using the **GARCH** model
- Developed a dashboard using **Tableau** to visualize closing price and volatility predictions on testing data

SKILLS

Languages/Software: Python, C++, SQL, Java, Github, Jupyter Notebooks, Tableau, Linux, PyCharm, VS Code, Excel

Libraries: TensorFlow, Scikit-Learn, Pandas, PyTorch, Seaborn, Scrapy, statsmodels, NLTK, Altair, MLflow, SHAP