

# Vinyas Naidu Karri

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## EDUCATION

**Northeastern University, Boston, Massachusetts, USA**

**Expected: Dec 2025**

*Master of Science in Data Analytics Engineering (GPA - 4.0/4.0)*

**Course work** - Data Management for Analytics, Foundations for Data Analytics Engineering, Statistical Learning for Engineering, Computation and Visualization for Analytics & Neural Networks and Deep Learning

## WORK EXPERIENCE

**ZS Associates (Decision Analytics Associate) (Full-Time), Pune, India**

**July 2022 – Dec 2023**

- Collaborated with **AbbVie clients**, providing strategic planning and investment support through advanced data analytics and data science solutions and ad hoc reporting in oncology.
- **Increased Market Share by 2% Amidst Competitive Launch**: Led a predictive analysis for Brukinsa adoption across ~10,500 HCPs, increasing product share by 2%, while competitor shares declined amidst a new competitor launch
- **Identified and Prioritized High-Impact HCP Segments**: Analyzed HCP prescribing patterns and segmented ~20% as high-risk adopters, driving focused commercial efforts across ~2,000 high-priority accounts. Achieved the highest model recall through oversampling and hyperparameter tuning.
- **Analyzed 10 years of patient and HCP data using Optum and SHS datasets**, achieving 78% model accuracy and a pseudo R-squared of 0.33. Identified key drivers of JAKAFI persistency, including patient comorbidities, MF risk levels, and HCP involvement. Demonstrated that active dose management and therapy gaps increased persistency by 93%.
- **Applied logistic regression and bivariate analysis** to correlate persistency with factors like Charlson Comorbidity Index (CCI), therapy gaps, and HCPs in care groups or with tailored dose management were 20% more likely to maintain therapy.
- Developed a **Key Account Management (KAM)** strategy by iterating a target list across three versions, integrating data from eight sources to prioritize ~7,000 high-impact HCPs. Created a weighted framework based on prescribing behaviors, improving Jakafi claims visibility by 50% and coverage by 10% in TL 3.0.

**ZS Associates (Decision Analytics Associate) (Internship), Pune, India**

**Jan 2022 - June 2022**

- Developed a marketing mix model to assess the influence of professional and consumer promotional channels. Facilitated businesses in optimizing their investments by redistributing resources among different channels.
- **Developed Databases and Bayesian Models**: Built and managed databases on Amazon Redshift to store and process promotional data across multiple channels. Applied Generalized Linear Models (GLM) and Bayes Regression models tailored to specific products, ensuring effective analysis and insights.

## PROJECT WORK

**Machine Learning Algorithm Development (Developed Algorithms from scratch) (GitHub - [Link](#))**

- Implemented **Linear Regression, Logistic Regression, and Naive Bayes classifiers** using Python, coding the mathematical foundations of each model
- Tuned hyperparameters like **learning rate, regularization ( $\lambda$ ), and batch sizes**, achieving optimized results
- Improved accuracy, precision, and recall by removing outliers, experimenting with gradient descent variations (SGD, batch GD), and incorporating techniques like Laplace smoothing in Naive Bayes.

**Human Activity Recognition using CNN and LSTM (Video Data): (GitHub - [Link](#))**

- Developed human activity recognition system using ConvLSTM and LRCN, achieving 87% test accuracy
- Processed 5,000+ video frames using OpenCV for frame extraction, resizing to 64x64, and normalization.
- Optimized a model with 1.2M parameters using dropout (0.4), max pooling, and early stopping to prevent overfitting.
- Tested on 10+ YouTube videos, achieving 90% accuracy in real-world activity recognition

**Skin Cancer Detection (Melanoma Classification using Skin Images)**

- Developed a skin cancer detection model using CNNs and transfer learning, achieving 98% accuracy
- Processed 33,126 dermoscopic images with resizing, normalization, and data augmentation to address class imbalance.
- Trained EfficientNetB0 and DenseNet121 models with Adam optimizer, achieving a recall of 61% and precision of 39%.
- DenseNet121 outperformed the baseline CNN, demonstrating improved performance despite class imbalance challenges.

**Credit Card fraud Detection: (GitHub- [Link](#))**

**Time Series Analysis to Detect Heavy Drinking Episodes Using Smartphone Accelerometer Data: (GitHub- [Link](#))**

**Student Mental Health Analytics using SQL (MySQL), NoSQL (MongoDB), Python (GitHub- [Link](#))**

**Data Visualization and Analysis for British Airways Reviews (Interactive Tableau dashboard) (GitHub - [Link](#))**

## SKILLS

**Scripting Language / Libraries:** Python, R, SQL, Pandas, NumPy, Seaborn, Matplotlib, Scikit-learn, Tensorflow, PyTorch,

**Tools & Concepts:** Excel, DBMS, Tableau, Flourish Studio, Snowflake, Power BI, PySpark, PowerPoint, Dashboard, Reporting, Statistics, Data Science, Machine learning, Predictive Modeling, Git, R Shiny, Deep learning & Neural Networks, supervised / unsupervised learning, NLP, LLMs, Hadoop, Hive, Spark, A/B testing, Statistical Modelling, Alteryx, Gen AI

## ADDITIONAL INFORMATION

**Eligibility:** Eligible to work in US for Internships and Full-time employment for up to 8+36 months without sponsorship