

Vinyas Naidu Karri

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EDUCATION

Northeastern University, Boston, Massachusetts, USA
Master of Science in Data Analytics Engineering

Expected: Dec 2025

National Institute of Technology, Warangal, India
Bachelor of Engineering in Mechanical Engineering

Aug 2018 - Apr 2022

SKILLS

Scripting Language / Libraries: Python, R, SQL, Pandas, NumPy, Seaborn, Matplotlib, Scikit-learn, TensorFlow, PyTorch, ggplot2, exploratory data analysis, AWS (EC2, Athena, S3), Google Data Studio

Concepts: Statistics, Data Science, Machine learning, Predictive Modeling, Deep learning & Neural Networks, LLMs, NLP, Data Engineering, Feature Engineering, Time Series Analysis, Data Visualization, Data modeling, mutual information, KL divergence

Tools: DBMS, Tableau, SAS, Visual Basic, Power BI, Spark, Advanced Excel, PowerPoint, Dashboard, Reporting, Databricks, Kubernetes

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 in oncology.
- Led end-to-end healthcare data science projects, utilizing machine learning techniques (e.g., hyperparameter tuning, one-hot encoding) to optimize healthcare professional (HCP) targeting. Enhanced algorithm precision and recall using Positive Unlabeled learning, significantly impacting patient management strategies. Enhanced recall and precision scores through the Positive Unlabeled learning technique and identified the next potential targets.
- Managed the team in an end-to-end project (HCP Adoption Analysis), Collating three data sources into a master dataset. Balanced a highly imbalanced dataset using SMOTE and other techniques, and refined results through hyperparameter tuning. Additionally, explored PU learning as a secondary approach for analysis.
- Conducted advanced data analysis and machine learning modeling to assess treatment landscape and drug persistency, directly influencing clinical decision-making and patient care strategies. Utilized bivariate analysis to explore the association between patient and HCP characteristics and persistency. Applied machine learning models to quantify the relationship between predictor variables and persistency impact.
- Implemented Key Account Management (KAM) strategy by creating a target list through three iterations, incorporating data from 8 sources. Developed a comprehensive framework, assigning weights based on the importance of HCPs derived from their prescribing behavior across various data sources.

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.
- Managed extensive HCP-level data involving multiple promotional channels across three distinct products.
- Applied Generalized Linear Models (GLM) and Bayes Regression models tailored to specific products, ensuring effective analysis and insights.

PROJECTS

Exploring Urban Spatial Order Through Clustering Techniques:

- Developed and implemented clustering techniques to analyze urban spatial order in a global study of 100 cities, creating the orientation-order indicator ϕ to quantify urban network orientations and reveal predominant grid-like structures in North American cities.
- Employed Python and advanced data analytics to identify significant correlations between network orientation entropy and city transportation dynamics, with results underscoring Chicago's unique spatial configuration compared to other global cities. (GitHub- [Link](#))

Time-Series Analysis to Detect Heavy Drinking Episodes Using Smartphone Accelerometer Data:

- Analyzed time-series accelerometer data from smartphones to identify movement patterns indicative of heavy drinking episodes, employing meticulous data cleaning and preparation to ensure accurate analysis.
- Applied permutation entropy and complexity metrics to differentiate between sober and intoxicated states, revealing sensitive movement axes affected by alcohol consumption and leading to the development of a privacy-first tool for monitoring drinking habits. (GitHub- [Link](#))

Machine Learning Algorithm Development (Coded from scratch):

- Developed and implemented machine learning algorithms from scratch, including Naive Bayes, Linear & Logistic Regression, leveraging statistical principles and linear algebra for accurate model construction. (GitHub- [Link](#))