KETULKUMAR POLARA

+1(773) 349-6913 ◇ Miami, FL
kpola009@fiu.edu ◇ LinkedIn ◇ GitHub ◇ Website

EDUCATION

Master's of Science in Information Technology, Florida International University — April 2023
Course Specialization: Data Mining, Deep Learning, Software Engineering — GPA: **3.82**/4.0

Bachelor's of Science in Information Technology, Florida International University — Dec 2020
Course Specialization: Databases, System Administration, Web Development, Cybersecurity — GPA: **3.32**/4.0
Minor: in Entrepreneurship

SKILLS

Programming Languages: Python, Java, SQL
Cloud: AWS (S3, EC2, SageMaker), Azure (Data Lake, Data factory)
Databases: SQL Server, MySQL
Data Visualization: Matplotlib, Plotly, Seaborn
Statistics/Machine Learning/Deep Learning: A/B Testing, Linear/Logistic Regression, SVM, kNN, Decision Tree, XGBoost, Clustering (KMeans), etc. (Scikit-learn, Pandas, NumPy, Scipy), ANN, CNN, Transformers, Autoencoders, (TensorFlow, Keras, Pytorch), Predictive Modeling, NLP, and Computer Vision
Others: Git, Docker, Excel (V-Lookup, Pivot Tables, Formulas, Charts), Streamlit, Windows, Linux, UNIX
Exposure: Flask, R, KNIME, Hadoop, Spark

CERTIFICATIONS

Azure AI Fundamentals, Microsoft
IBM Data Science Professional, IBM
Big Data Specialization, University of San Diego
Deep Learning Specialization, deeplearning.ai
Advanced Data Science Specialization, IBM

EXPERIENCE

Machine Learning Researcher — Aug 2021 - Current
Energy Systems Research Lab (FIU) — *Miami, FL*

- Designed and developed Time-series database (InfluxDB) to capture data from 200 data points using RTI Data distributions service (Similar to Apache Kafka) for smart grid testbed.
- Using AWS SageMaker, S3, and SageMaker endpoint, trained and deployed Autoencoder and Isolation Forest Machine Learning model in python for anomaly detection in smart grid testbed.
- Implemented Federated Learning Framework Flower with ANN and CNN to detect Denial of Service attacks on IoT devices.
- Implemented Forecasting models for Load and Solar Power using LSTM and Transformer Model.

Data Engineer, Intern — Mar 2020 - Dec 2020
Apexx Strategies — *Reston, Virginia*

- Performed Data Collection (SQL), Data Cleaning (Python), and Data Visualization.
- Develop deep understanding of the data sources, implement data standards, and maintain data quality.
- Developed a pipeline to perform full loading of data from OLTP source to Azure Data Lake in CSV format using Azure Data Factory.

PROJECTS

Title: Attack Detection in IEC 61850 Protocol

- Performed intensive literature review to understand IEC 61850 protocol and prior work in Machine Learning.
- Performed data collection, data cleaning, feature engineering, feature creation and used Principal Component Analysis algorithm (PCA) for dimension reduction.
- Implemented and optimized ANN to increase model performance based on evaluation metric Recall, Precision and F1-score.

Title: Customer Default Prediction

- Handled Imbalanced target variable and skewed features using statistical techniques like Stratified K-Folds cross-validation and Yeo-Johnson Transformation.
- Implemented machine learning algorithms like Logistic Regression and Random Forest.
- Leveraged Grid Search for hyperparameter optimization. Obtained AUC score of 85 percent.

LEADERSHIP AND ACTIVITIES

President — *Jan 2022 - Current*
Artificial Intelligence Coding Club, FIU

- Hosted Events, Workshops, and competitions for democratizing AI into all domains.

Webmaster , IEEE Miami Section — *Aug 2021 - Current*