

# KETULKUMAR POLARA

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## EDUCATION

<b>Master's of Science in Information Technology</b> , Florida International University	April 2023
Course Specialization: Data Mining, Deep Learning, Software Engineering	GPA: <b>3.82</b> /4.0
<b>Bachelor's of Science in Information Technology</b> , Florida International University	Dec 2020
Course Specialization: Databases, System Administration, Web Development, Cybersecurity	GPA: <b>3.32</b> /4.0
<b>Minor:</b> 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

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

## EXPERIENCE

<b>Machine Learning Researcher</b> Energy Systems Research Lab (FIU)	Aug 2021 - Current <i>Miami, FL</i>
<ul style="list-style-type: none"><li>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.</li><li>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.</li><li>Implemented Federated Learning Framework Flower with ANN and CNN to detect Denial of Service attacks on IoT devices.</li><li>Implemented Forecasting models for Load and Solar Power using LSTM and Transformer Model.</li></ul>	
<b>Data Engineer, Intern</b> Apexx Strategies	Mar 2020 - Dec 2020 <i>Reston, Virginia</i>
<ul style="list-style-type: none"><li>Performed Data Collection (SQL), Data Cleaning (Python), and Data Visualization.</li><li>Develop deep understanding of the data sources, implement data standards, and maintain data quality.</li><li>Developed a pipeline to perform full loading of data from OLTP source to Azure Data Lake in CSV format using Azure Data Factory.</li></ul>	

## PROJECTS

<b>Title: Attack Detection in IEC 61850 Protocol</b>
<ul style="list-style-type: none"><li>Performed intensive literature review to understand IEC 61850 protocol and prior work in Machine Learning.</li><li>Performed data collection, data cleaning, feature engineering, feature creation and used Principal Component Analysis algorithm (PCA) for dimension reduction.</li><li>Implemented and optimized ANN to increase model performance based on evaluation metric Recall, Precision and F1-score.</li></ul>
<b>Title: Customer Default Prediction</b>
<ul style="list-style-type: none"><li>Handled Imbalanced target variable and skewed features using statistical techniques like Stratified K-Folds cross-validation and Yeo-Johnson Transformation.</li><li>Implemented machine learning algorithms like Logistic Regression and Random Forest.</li><li>Leveraged Grid Search for hyperparameter optimization. Obtained AUC score of 85 percent.</li></ul>

## LEADERSHIP AND ACTIVITIES

<b>President</b> Artificial Intelligence Coding Club, FIU	Jan 2022 - Current
<ul style="list-style-type: none"><li>Hosted Events, Workshops, and competitions for democratizing AI into all domains.</li></ul>	
<b>Webmaster</b> , IEEE Miami Section	Aug 2021 - Current