# BABJI KILARU

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# PROFESSIONAL SUMMARY

* Highly motivated and detail-oriented individual with a strong foundation in computer science and extensive hands-on experience in big data technologies, machine learning, and cloud computing.
* Actively seeking an intern or full-time position, I am eager to apply my skills and knowledge to solve real-world challenges and contribute to organizational goals in a dynamic and collaborative environment.
* Proficient in Python, Java, SQL, and R, I have utilized frameworks and tools such as Apache Spark, Hadoop, and Azure to analyze complex datasets, develop predictive models, and create insightful visualizations.
* My technical expertise includes implementing efficient data processing pipelines, performing exploratory data analysis, and leveraging machine learning algorithms to deliver actionable insights.
* Expertise in designing and implementing ETL processes to extract, transform, and load data from diverse sources into data warehouses, ensuring data integrity, consistency, and high performance for analytics and reporting.
* By employing advanced analytics and real-time data processing techniques, I have successfully developed interactive dashboards and visualizations using tools like Excel, Tableau and Power BI.
* My strong problem-solving skills, attention to detail, and collaborative approach enable me to translate complex data into meaningful insights, supporting data-driven decision-making.

# TECHNICAL SKILLS

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| **Programming Languages:** | Python, C, R, Java, SQL |
| **Web Technologies:** | HTML5, CSS3, JavaScript, XML, ReactJS, Next.js, Bootstrap, PHP. |
| **Libraries:** | NumPy, Pandas, Matplotlib, Plotly, ML libraries, Pyspark. |
| **Databases:** | SQL Server, MySQL, Azure SQL |
| **Big Data Technologies and Concepts:** | Spark, Map Reduce, Hadoop, Flume, Cassandra, Hive, Kafka, ETL, Data Visualization, Data Collection, Data Analysis. |
| **Cloud Technologies:** | Azure(Blob, ADLS, ADF, Synapse, Azure SQL) , Snowflake |
| **Machine learning & AI:** | Regression, Classification, Decision Tree, Random Forests, Neural Network, K-Means, TensorFlow, Clustering, KNN, CNN and Natural Language Processing (NLP). |
| **Data Visualization tools:** | Tableau, Power BI, MS Excel |
| **IDE** | Visual Studio Code, Jupyter Notebook, Pycharm, Eclipse, Netbeans, RStudio, Git |
| **Operating Systems** | Linux, Unix, Windows |

# PROJECTS

**IOT Based Soil Moisture Monitor using Ultrasonic Sensor**

*University of Missouri-Kansas City*

Aug 2022 – Dec 2022

*Kansas City, Missouri*

* Developed an IoT-based system to monitor soil moisture levels using an ultrasonic sensor, with data transmitted to Azure for real-time analysis and visualization. Developed scripts in Arduino IDE/Python to read sensor data and convert it to soil moisture levels.
* Employed NumPy and Pandas libraries for data manipulation and analysis of soil moisture levels.
* Implemented data visualization techniques using Matplotlib and Plotly to create insightful graphs and charts, aiding in the interpretation of sensor data.
* Leveraged Azure Data Lake Storage (ADLS) for storing large volumes of sensor data and Azure Virtual Machines for running data processing scripts.
* Applied Pyspark and Hadoop for large-scale data processing, ensuring efficient handling of the collected IoT data.
* Conducted machine learning analysis using Scikit-Learn, focusing on Regression and Classification techniques to predict soil moisture trends.
* Created interactive dashboards with Tableau and Power BI to present data findings to stakeholders, enabling data-driven decision-making.
* Implemented Azure Data Factory (ADF) for orchestrating data workflows and automating ETL processes, enhancing data pipeline efficiency and reliability.
* Leveraged Azure Synapse Analytics for comprehensive data integration, management, and analytics, providing powerful insights and optimizing data processing performance.

**Environment:** Python, Azure(ADLS, ADF, Synapse), ETL Processes, Tableau, Power BI, Libraries(NumPy, Pandas, Matplotlib, Plotly), ML concepts.

**Image Captioning Generator**

*University of Missouri-Kansas City*

Aug 2023 – Dec 2023

*Kansas City, Missouri*

* Designed a deep learning model (LSTM) utilizing NumPy, CNN, and Keras, achieving an outstanding average accuracy rate of 95%. Implemented image-to-text conversion, enhancing accessibility for visually impaired individuals.
* Processed about 10,000 images and stored recognized text efficiently in a Firebase database as a JSON file. Ensured seamless data retrieval and utilization for making visual information accessible.
* Integrated user-friendly front-end technologies, including HTML5, CSS3, and JavaScript, resulting in an intuitive and visually appealing user interface. Achieved a 30% improvement in user engagement through effective front- end design.
* Implemented cutting-edge machine learning techniques, utilizing Convolutional Neural Networks (CNN) for image processing within the model. Contributed to the creation of an innovative solution aimed at bridging accessibility gaps for the visually impaired community.

**Environment:** Python, HTML5, CSS3, JavaScript, NumPy, ML concepts(CNN, Keras)

**Trend Analysis of YouTube Videos**

*University of Missouri-Kansas City*

Aug 2022 – Dec 2022

*Kansas City, Missouri*

* Conducted a comprehensive trend analysis on YouTube videos to identify and analyze trending topics, content, and viewer engagement over time.
* Implemented Apache Kafka for continuous data streaming and ingestion, ensuring real-time data collection and processing.
* Employed Apache Spark for efficient data processing and analysis, including data cleaning, transformation, and feature extraction.
* Conducted exploratory data analysis (EDA) to identify trends and patterns in viewer behavior and content popularity. Used Spark’s MLlib for advanced analytics, including trend prediction and sentiment analysis of video comments.
* Created interactive dashboards and visualizations using Tableau to present findings and trends effectively.

**Environment:** Python, Jupyter Notebook, Apache Kafka, Apache Spark, Tableau

# EDUCATION

**Master of Science in computer science** GPA – 3.68/4.0

***University of Missouri-Kansas City***

Aug 2022 – May 2024

*Kansas City, Missouri*

Relevant Courses: Principles of Big Data Management, Advanced Operating Systems, Design and Analysis of Algorithms, Network Architecture , Cloud Computing, Parallel Algorithms, Formal Software Specifications & IOT.

**Bachelor of Technology in Computer Science** GPA – 3.6/4.0

***SRM University***

Aug 2018 - May 2022

*Andhra Pradesh, India*

Relevant Courses: Python programming, Data Structures and Algorithms, Object Oriented Programming, Web Technology, Computer Organization and Architecture, Compiler Design, Introduction to Machine learning , Operating systems & Digital Image Processing.

# CERTIFICATIONS

* PCAP™ - Certified Associate Python Programmer - issued by Python Institute

# PUBLICATIONS

Kilaru, Babji and Rana Shuvendu (2022). “Stationary Object Detection using RetinaNet and Kalman Filter”. In: pp. 1–6. doi: [10.1109/ICICCSP53532.2022.9862392](https://ieeexplore.ieee.org/document/9862392).