

**M Chaitanya [Data Scientist]**  
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## **PROFESSIONAL SUMMARY**

- Proactive **data scientist** with extensive experience in developing and implementing **machine learning ML Models** across diverse industries including Banking, Finance, Retail, Risk, and Manufacturing.
- Collaborated closely with inter disciplinary teams to design and deploy predictive models, focusing on failure prediction and root cause analysis (RCA).
- Proficient in utilizing advanced machine learning techniques such as **SVM, XGBoost, Random Forest, Decision Tree, Logistic Regression, Linear Regression and Neural Networks** to deliver tailored solutions to customer needs.
- Demonstrated expertise in data preprocessing and analysis using **Pandas, Keras, SciPy, NumPy, Matplotlib, and Seaborn** to ensure robust and scalable machine learning solutions.
- Skilled in programming languages **Python** with hands-on experience in integrated development environments like **Jupyter Notebook** and **PyCharm**.
- I specialized in **Natural Language Processing (NLP)**, with a focus on **sentiment analysis, text mining, and language modeling (LLM)**, **OpenAIs LLM, GPT**.
- Proficient in deep learning frameworks including **Tensor Flow**, and **Keras** for building and deploying complex neural network models.
- Experienced in cloud platforms is **AWS** for scalable and efficient data storage, processing, and deployment.
- Developed and deployed a range of **predictive models** and **Exploratory Data Analysis (EDA)** addressing various business challenges such as customer delinquency, employee attrition, mortgage loan loss prediction, and credit risk assessment.
- Experienced in dimensionality reduction techniques like **Principal Component Analysis (PCA)** for variable selection and feature extraction.
- Experienced in anomaly detection using **Isolation Forest, One-Class SVM**, and clustering algorithms like **K-Means and DBSCAN**.
- Good Knowledge of Algorithms like **Support Vector Machines(SVM),K-Nearest Neighbors (K-NN), Naïve Bayes, Principal Component Analysis (PCA), Auto encoders, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Long Short-Term Memory(LSTM), Gated Recurrent Units(GRU), Generative Adversarial Networks(GANs), Transformers, BERT, XGBoost, AdaBoost, Gradient Boosting Machines(GBM), Randomized SearchCV, Grid SearchCV, Bayesian Optimization.**

## PROFESSIONAL EXPERIENCE:

- ✓ Worked with **Juntran technology Pvt Ltd**, Bangalore as **Data Scientist** from July 2022 to April 2023
- ✓ Support Engineer at **Kent ITS**, providing technical support and ensuring seamless operations since October 2024.

## Technical Skills

### SKILLS:

Data Cleaning, Data Wrangling, Exploratory Data Analysis (EDA), Hypothesis Testing, Time Series Analysis, Natural Language Processing (NLP), Data Mining, Predictive Modeling, Text Analytics, Sentiment Analysis, Anomaly Detection, Ensemble Methods, Cross-Validation, Hyper parameter Tuning, Deployment Strategies, Reinforcement Learning, Neural Network Architectures.

### Tools and Libraries:

Tensor Flow, PyTorch, Seaborn, Plotly, Scrapy, BeautifulSoup, NLTK, Spacy, Feature Tools, Langchain, OpenAI's LLM, GPT integrations.

### ML Algorithms:

Support Vector Machines (SVM), K-Nearest Neighbors (K-NN), Naive Bayes, Principal Component Analysis (PCA), Auto encoders, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM), Gated Recurrent Units (GRU), Transformers, BERT, XGBoost, AdaBoost, Gradient Boosting Machines (GBM), Randomized SearchCV, Grid SearchCV, Bayesian Optimization

## Project 1: Loan Prediction Model Based on Customer Behavior

Duration : (July 2022 to Dec 2022)  
Domain : Loan and Insurance  
Company : Juntran Technology Pvt Ltd, Bangalore.

### Description:

The Loan Prediction Model project at Juntran Technology aims to develop a predictive model that evaluates and predicts loan approval or rejection based on customer behavior and historical data. The

Objective is to enhance the credit risk assessment process, optimize loan approval decisions, and mitigate potential financial risks associated with loan defaults.

### **Implementation:**

Implemented a Loan Prediction Model leveraging machine learning algorithms to assess credit risk and predict loan approval or rejection based on customer behavior and historical data. Conducted data preprocessing, feature engineering, and model development using SVM, XGBoost, Random Forest, Logistic Regression, and Neural Networks. Optimized model performance through hyper parameter tuning and cross-validation. Evaluated and validated the model using accuracy, precision, recall, F1-score, and ROC-AUC curve metrics. Deployed the model into a production environment, integrating it with the existing loan approval system, and implemented monitoring tools to track performance over time. Collaborated with across functional teams to gather requirements, iterate model improvements, and communicate findings to stakeholders.

### **Environment:**

Python for programming, Pandas, NumPy, Matplotlib, and Seaborn for data processing and analysis, Scikit-learn, Tensor Flow, and Keras for machine learning, Git and GitHub for version control, Jupyter Notebook and PyCharm as Integrated Development Environments(IDEs), AWS, SVM, XGBoost

### **Roles and Responsibilities:**

- Data Collection and Preprocessing: Gathered and cleaned historical loan application data, including customer information, financial metrics, credit history, and loan status.
- Conducted exploratory data analysis (EDA) to understand data distributions, identify patterns, and detect outliers.
- Feature Engineering: Extracted relevant features from the dataset, such as customer demo graphics, employment history, income levels, credit scores, and loan terms.
- Created new features to capture the relationship between variables and enhance the predictive power of the model.
- Utilized machine learning algorithms, including SVM, XGBoost, Random Forest, Logistic Regression, and Neural Networks, to develop predictive models.
- Conducted hyper parameter tuning and cross-validation to optimize model performance and generalization.
- Evaluated model performance using metrics such as accuracy, precision, recall, F1-score, and ROC-AUC curve.
- Conducted rigorous validation tests to ensure the model's reliability, robustness, and scalability.
- Deployed the trained machine learning model into a production environment, integrating it with the existing loan approval system.
- Implemented monitoring tools to track model performance and identify any drift or degradation over time.
- Analyzed and interpreted large datasets to extract meaningful insights and identify key patterns related to loan approval and customer behavior.

- Developed and fine-tuned machine learning models to predict loan approval decisions accurately and efficiently.
- Collaborated with cross-functional teams, including data engineers, business analysts, and stake holders, to understand requirements, gather feedback, and iterate on model improvements.
- Presented findings, insights, and recommendations to senior management and key stakeholders to drive informed decision-making.

## **Project2: Chatbot integration for Real time applications**

Duration : (Dec2022toApr2023)  
 Domain : AI Chatbot LLM  
 Company : Juntran technology Pvt Ltd, Bangalore.

### **Description:**

Developed a Chatbot to address basic customer queries, provide customer support, and offer product recommendations. Aimed to enhance client efficiency, save time, and increase sales and service productivity.

### **Environment:**

Python, Document Processing: **Lang Chain, FAISS (Vector Database), OpenAIs LLM, FastAPI, Gradio, Hugging Face (for NLP tasks), FastAPI (for API development).**

**Version Control:** Git, GitHub, Swagger UI (integrated with Fast API for API documentation and testing), Scikit- learn (for machine learning utilities), NLTK (for text processing and NLP tasks), Spacy (for advanced NLP and entity recognition), PyTorch (for deep learning capabilities).

### **Roles and Responsibilities:**

- Gathered and organized customer queries and their corresponding solutions cover a broad spectrum of potential questions. Utilized Lang Chain to process and embed all relevant documents.
- Stored the entire embedded vector data into the FAISS Vector data base for efficient similarity search.
- Leveraged OpenAI's large language models to facilitate intelligent responses.
- Stored embeddings of customer interactions to personalize and improve the chatbot's performance over time.
- Built a robust API for the Chatbot model using FastAPI.
- Implemented proper logging, exception handling, and modular coding structure to ensure reliability and maintainability.
- Created a demo UI for the Chatbot using Gradio to show case its functionality and user interaction capabilities.

- Leveraged pre-trained language models to fine-tune on domain-specific data, enabling the chatbot to understand and respond to industry-specific queries more effectively.
- Implemented context-aware responses to maintain conversational context and provide more personalized and relevant answers to user queries.
- Incorporated a feedback mechanism to continuously learn from user interactions and improve the chatbot's performance over time.
- Enabled the chatbot to understand and respond to queries in multiple languages, enhancing its accessibility and user reach.
- Integrated real-time analytics to monitor user interactions, track performance metrics, and gain insights into user behavior and preferences.

### **EDUCATION:**

Post graduated in **MTech (VLSI&ESD)**-2019, from **GMR Institute of technology**, JNTU Kakinada Autonomous, Rajam.