

Ramakrishna Reddy Vennam

Data Scientist

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Professional Summary

Results-driven Data Scientist with **4 years** of experience developing scalable **ML pipelines**, deploying production-grade **AI models**, and delivering actionable insights. Proven expertise in **NLP**, fraud detection, **MLOps**, and deploying **LLMs** using **RAG** pipelines, **AutoGen** agents, and Azure AI Search. Skilled in cloud-native development with **Python**, **SQL**, **Flask**, and platforms like **AWS** and **Azure**.

Education

University of South Florida, FL, USA, **Master's in Computer Science.**

May 2025

Work Experience

Charles Schwab, FL | Data Scientist.

Jan 2025 - Current

- Increased credit risk classification accuracy by **25%** by deploying fraud detection models using **KNN** and **Gradient Boosting**.
- Improved segmentation accuracy through **NLP pipelines** analyzing transactional narratives and customer behavior.
- Processed **3M+ records** using **Python**, **SQL**, **Pandas**, and **Hadoop** for high-performance ETL and validation.
- Built and deployed secure RESTful APIs using Flask and SQLAlchemy on **AWS** and **Azure** cloud platforms.
- Integrated **LLaMA-based large language models** and **Azure OpenAI LLMs** with **RAG** architecture and **Azure AI Search** for contextual analysis.
- Developed intelligent agents with **AutoGen** to automate financial domain queries. Automated **200+** financial queries/week using AutoGen-based intelligent agents.
- Enhanced real-time decision-making with **Power BI** dashboards, boosting operational efficiency by **30%**. Led **CI/CD pipeline** implementation using **Git** and **Azure DevOps**.

Accenture, India | Data Scientist.

May 2020 - Jul 2023

- Developed and deployed advanced classification models—such as **Decision Trees**, **Random Forests**, and **SVM**—to support targeted marketing efforts, resulting in a **10%** increase in average customer **LTV**.
- Reduced preprocessing time by **40%** with custom **PyTorch Data Loaders** and optimized NLP pipelines
- Built, trained, and evaluated machine learning models using **Scikit-learn**, **accelerating experimentation cycles** and shortening development timelines.
- Processed unstructured text with **tokenization**, **lemmatization**, and **filtering** for robust training data.
- Developed **MLOps** frameworks using FastAPI, Docker, and **CI/CD** via **GitHub** Actions and **Azure DevOps**. Built scalable data workflows using **Azure Data Factory**, **Data Lake**, **Spark**, and **Hadoop**.
- Designed and delivered interactive Tableau dashboards to visualize critical health metrics in real time, supporting leadership with actionable insights and improving strategic decision-making by **25%**.
- Deployed ML solutions via **Azure Function/Web Apps** integrated with Azure AI Search.

Projects

Financial Insight Engine using LLMs (LLaMA) | Charles Schwab

Jan 2025 - Present

- Built an AI-powered NLP solution leveraging LLaMA-based large language models to extract and summarize insights from unstructured financial documents in real-time.
- Applied prompt engineering and integrated with Flask APIs and AWS RDS, embedding outputs directly into Power BI dashboards for dynamic business intelligence.
- Achieved a 40% reduction in analysis time, accelerating decision-making and improving financial reporting workflows. Collaborated with analysts to refine domain-specific prompts and ensure compliance with financial terminology.
- Skills/Keywords:** LLMs, NLP, Prompt Engineering, Flask, AWS, RDS, Power BI, Real-Time Inference, Document Intelligence

Customer Segmentation for Marketing Optimization | Accenture

May 2020 - Jul 2023

- Developed machine learning models (SVM, Decision Trees) for behavioral customer segmentation, improving campaign conversion and targeting precision.
- Created end-to-end pipelines using SQL, Pandas, and Tableau for visual reporting; improved customer LTV by 10%.

- Overcame data heterogeneity issues with structured preprocessing and enhanced cluster accuracy from 70% to 80%.
- **Skills/Keywords:** Customer Segmentation, Clustering Models, Behavioral Analytics, SQL, Pandas, Tableau, ML Pipelines

MLOps Pipeline for Production Deployment | Accenture

May 2020 – Jul 2023

- Designed and deployed an end-to-end MLOps framework using FastAPI, Docker, and GitHub Actions for CI/CD automation of ML models.
- Integrated with Azure Data Factory and Azure Data Lake to manage and orchestrate data workflows across environments.
- Reduced ML model deployment time by 60%, from several weeks to under 2 weeks, enhancing reliability and release velocity.
- **Skills/Keywords:** MLOps, CI/CD, FastAPI, Docker, GitHub Actions, Azure Data Factory, Data Lake, Model Monitoring, Containerization12

Technical Skills

- **Programming Languages:** Python, SQL, R, Scala, C++
- **Python Libraries:** Pandas, Numpy, Scikit-learn, Py-Torch, Tensorflow, Keras, Matplotlib, Seaborn, Django, Flask, Flask SQLAlchemy
- **Machine Learning & Data Analysis Skills:** Deep Learning, Decision Trees (CART), Ridge Lasso Regression, Res Net, Naïve Bayes, KNN, SVM, Boosting Random Forest, Classification, Clustering, Transformers, RAG, LLMs (LLaMA, Azure OpenAI), Data Manipulation, Data Visualization, Data Analysis
- **MLOps:** CI/CD, Model Deployment, Monitoring, AutoGen Agents, Document Intelligence
- **Database:** MySQL, MongoDB, PostgreSQL, NoSQL
- **Cloud:** Amazon Web Services (IAM, EC2, RDS), GCP (Big Query), MS Azure (Azure data factory, Azure Data Lake)
- **Tools:** FastAPI, Docker, Git, Azure DevOps, Hadoop, Spark, Power BI, Tableau, Jupyter, RStudio
- **Methodologies:** Waterfall, SDLC, SCRUM, Agile
- **Soft Skills:** Analytical Thinking, Curiosity & Continuous Learning, Problem-Solving Ability, Adaptability, Time Management

Certifications

- Artificial Intelligence Foundations: Machine Learning
- Microsoft Certified: Azure Fundamentals
- Data Science and Machine Learning Bootcamp with Python
- Workshop in Machine Learning – Pantech E-Learning