MANOGNA VENKATA SUDHA ANIRUDH MAGANTI

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PROFESSIONAL SUMMARY

AI/ML Engineer with extensive experience in delivering data-driven solutions across e-commerce, Automotive and finance. I am skilled in designing scalable machine learning pipelines on cloud platforms like AWS and GCP and deploying NLP models for business impact. Successfully implemented recommendation systems and predictive models, enhancing decision-making and operational efficiency. Eager to leverage expertise in machine learning and data science to drive innovation and optimize processes in a dynamic environment.

SKILL SET

Data Sources: SSMS, BigTable, Cloud Firestore, MongoDB, Cassandra, MySQL, HBase, Amazon Redshift, Snowflake, Neo4J

Statistical Methods: Hypothesis Testing, ANOVA, PCA, Time Series, Correlation, Multivariate Analysis, Bayes Theorem

AI/ Machine Learning: Linear Regression, Logistic Regression, Naive Bayes, Decision Trees, Random Forest, SVM, K-Means, KNN, Chat GPT, Generative AI, Gradient Boosting Trees, Ada Boosting, PCA, LDA, NLP

Python Libraries: Numpy, Matplotlib, NLTK, Statmodels, Scikit-learn, SOAP, Scipy

Deep Learning: Artificial Neural Networks, CNN, RNN, Deep Learning on AWS, Keras API

Data Visualization: Tableau, Python (Matplotlib, Seaborn), R (ggplot2), Power BI, QlikView, D3.js

Languages: Python (NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn), R, SQL, PL/SQL, MATLAB, Spark, Java, C#

Operating Systems: UNIX, Shell Scripting (via PuTTY client), Linux, Windows, Mac OS

Tools and Technologies: TensorFlow, Keras, AWS ML, NLTK, SpaCy, Impala, Datadog, DataProc, Gensim, MS Office Suite, GitHub, AWS, Apache Airflow, GCP, Azure, Spark, BigQuery, Firebase, Prometheus, PyTorch, Scikit-learn

EXPERIENCE

ADP

AI/ML Engineer. **Dec 2023 – Aug 2024**

- Developed and deployed machine learning models for workforce management solutions, analyzing employee engagement, retention, and performance trends. Leveraged predictive modelling techniques, achieving a 20% improvement in accuracy for employee churn predictions.
- Implemented NLP models to enhance ADP's virtual assistant for HR and payroll queries, utilizing entity recognition, intent classification, and sentiment analysis to improve client query resolution time by 30%. Deployed models on AWS Lambda integrated with Datadog for real-time performance monitoring.
- Optimized model accuracy and reduced latency by 15% for high-volume HR queries through advanced techniques and hyperparameter tuning in GANs and NLP models, ensuring peak performance and reliability.
- Designed and managed real-time ETL pipelines using Apache Spark and Kafka to process transactional HR data, enabling immediate insights on employee performance metrics and payroll processing for large enterprise clients.
- Built a recommender system to suggest personalized training modules for ADP's clients based on employee roles, skill gaps, and past learning behaviours, contributing to a 25% increase in engagement with training programs.
- Automated reporting with NLG: Implemented Natural Language Generation for automated payroll and HR summaries, reducing report generation time by 50% and providing clients with actionable insights.
- Developed explainable AI models using SHAP to ensure transparency in payroll and HR-related decisions. Presented model insights to stakeholders, meeting ADP's standards for compliance with ethical AI practices in employment analytics.
- Implemented ARIMA and Prophet models to forecast payroll volumes and processing times, optimizing resource allocation and reducing payroll lag times by 15%.
- Designed anomaly detection models (isolation forests, autoencoders) to flag payroll irregularities, improving fraud detection accuracy to 95% and reducing investigation time by 40%
- Implemented CI/CD pipelines for machine learning models using Jenkins and Git, enabling faster, more reliable deployments with version control and rollback capabilities. This process reduced deployment time by 40% and enhanced the efficiency of model updates.
- Worked with engineering, data, and HR teams to refine data pipelines, ensuring data quality and integrity. Actively participated in Agile sprints, enhancing model deployment timelines and efficiency.

Taylor Corporation

AL/ML Engineer **Feb 2023 - Nov 2023**

- Developed end-to-end ML and BI solutions, including data acquisition, cleaning, model development, validation, and visualization for customer intelligence, resulting in enhanced decision-making capabilities for marketing strategies
- Managed large-scale data (trillions) using big data tools like Hadoop and PySpark to drive insights for product teams and stakeholders, leading to improved product development and strategic planning
- Designed and maintained a content-based recommender system and employed NLP techniques (sentiment analysis, topic modeling) with libraries like NLTK, SpaCy, and Gensim, which increased user engagement and personalized content delivery
- Utilized MLflow/Kubeflow for managing the ML lifecycle and built Flask APIs adhering to RESTful principles, resulting in streamlined deployment processes and improved API performance

- Automated AWS environments with Lambda functions and integrated Adobe Analytics ETL jobs into Snowflake, enhancing data processing efficiency and reducing operational costs
- Played a key role in development of a real-time chatbot using Azure Bot Service, integrating natural language understanding (NLU) capabilities with Azure Cognitive Services for intent recognition and context-aware responses.
- Integrated Retrieval-Augmented Generation (RAG) model into customer support chatbot, improving response accuracy by 30% and reducing query resolution time with real-time, contextually relevant answers.
- Developed Power BI reports to monitor the performance of deployed ML models and used Airflow DAGs for batch processing of data pipelines.
- Employed SAS for data extraction (Oracle, Teradata) and applied feature engineering, PCA, and hyperparameter tuning to enhance model accuracy.
- Developed ML models (Logistic Regression, KNN, Gradient Boosting) and used ensemble methods for improving model performance.
- Set up AWS and Microsoft Azure with Databricks, creating Databricks Workspace for Business Analytics and managing clusters, which improved data processing efficiency
- Tackled imbalanced datasets using sampling techniques like SMOTE and deployed models on AWS.
- Utilized Python, NumPy, Pandas, Matplotlib, and Scikit-learn for data analysis, feature extraction, and machine learning workflows, leading to more efficient data processing and insightful analysis
- Implemented diverse ML algorithms, including Decision Trees, Random Forests, XGBoost, and Support Vector Machines, which improved predictive accuracy and model robustness

Hyundai Motor India Engineering Pty Ltd

Data Scientist, Jul 2019– Dec 2022

- Developed a multivariate time-series forecasting model using Python and SQL to predict regional vehicle demand, improving production planning accuracy by 13% and reducing inventory shortages.
- Applied regression-based cost optimization and clustering analysis on operational data via SSMS, identifying savings opportunities that led to a 12% reduction in parts and service overspend.
- Built and deployed an automated analytics pipeline using SSMS, Python (Pandas, scheduling scripts), and Power BI, streamlining KPI reporting and saving 10+ hours/week in manual effort.
- Collaborated with R&D, supply chain, and marketing to define KPIs and built dynamic Power BI dashboards with advanced DAX and predictive trendlines, enabling proactive business decisions.
- Performed statistical audits and data consistency checks on ADAS sensor pipelines using Python (NumPy, Pandas) and SSMS, improving feature integrity by 30% and boosting downstream ML model performance in object detection systems.
- Conducted RFM segmentation and behavioral clustering of customer data using SSMS and Python (scikit-learn), delivering a market insight report that improved targeted service retention campaigns by 5%.

PROJECTS AND ACADEMIC ACHIEVEMENTS

Metaphor Detection (NLP): A metaphor detection system built on top of Distil BERT to detect metaphors in text, achieved state-of-the art results with NLU (Natural Language Understanding) loss 0.045.

Crop row and Leaf Segmentation (Deep Learning): Built U-Net models achieving 85% accuracy in crop row detection and 97% in leaf segmentation, enabling precise yield assessment and optimized planting.

Credit card Risk Estimation (Data mining): To find the past record data to develop a model for estimating fraud risk and period of consumer.

Credit Card Financial Dashboard (Power BI and SQL Server): Designed a financial analytics dashboard by integrating credit card data from SSMS with Power BI. Created custom DAX measures to track revenue, delinquency, and customer trends, delivering real-time insights for weekly performance monitoring.

Bayesian Health Insurance Cost Prediction: Developed a Bayesian model using MCMC for predicting health insurance costs; achieved R-squared of 0.89 and RMSE of 0.46 using Python and R.

HR Attrition Dashboard (Power BI and Tableau): Designed interactive dashboards to analyze employee attrition trends. Used DAX and analytics to reveal key factors like work-life balance and job satisfaction.

Sales Dashboard(Power BI): Built a Power BI dashboard for insights into sales, profits, and customer behavior. Applied data modeling and DAX to support data-driven business decisions.

EDUCATION

Purdue University, *Master of Science* Jan 2023 – Dec 2024 | USA

- **Major : Computational Data Science (Computer Science, Mathematics)**
- **GPA: 3.5/4.0, Dean's Scholarship Recipient**

Gayatri Vidya Parishad College of Engineering, *Bachelor of Technology* Jun 2015 – May 2019 | India

- **Major : Mechanical Engineering; CGPA: 8.63/10.00, Full-ride scholarship**