RAJ KUMAR NELLURI

Computer Science Graduate | Data Analytics & Cloud Enthusiast
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PROFESSIONAL OVERVIEW

Data Engineer with a passion for data and a deep desire to learn new technologies, possessing a strong foundation in computer science and cloud platforms. Skilled in Python, SQL, AWS, Tableau, AEP, AJO and Power BI, with hands-on experience in machine learning, deep learning, and data visualization. Completed impactful projects in AI-based face generation, cryptocurrency forecasting, and insurance fraud detection, demonstrating expertise in building end-to-end solutions. Strong analytical, problem-solving, and communication skills with proven adaptability and teamwork. Seeking opportunities to apply technical expertise and data-driven insights in a dynamic professional environment.

EDUCATION

Master of Science in Computer Science Engineering
Pace University, New York City, NY | 2025

Bachelor of Technology in CSE (Artificial Intelligence) Amrita
Vishwa Vidyapeetham, Bengaluru, India | 2023

SKILLS

Python (NumPy, Pandas, Scikit-learn)	Tableau, Power BI, Matplotlib, Seaborn
SQL, MySQL, AWS (EC2, S3, IAM, RDS)	Adobe Cloud Experience(AEP, AJO)
Machine Learning (Supervised/Unsupervised)	ETL, Data Preprocessing, Feature Engineering
Deep Learning (TensorFlow, Keras)	Excel, Statistical Analysis, Communication
Unit Testing, Integration Testing, Data Transformation	Data Extraction, Data Manipulation

CERTIFICATES

- AWS Certified Cloud Practitioner: Amazon Web Services – AWS (2025)
- Adobe Journey Optimizer Foundation Course – Adobe (2025)
- Complete Python Developer in 2023: Zero to Mastery – Udemy (2023)
- Support Vector Machine Classification in Python – Coursera (2020)
- Unsupervised Machine Learning for Customer Market Segmentation – Coursera (2020)
- Principal Component Analysis with NumPy – Coursera Project Network (2020)
- Logistic Regression with NumPy and Python – Coursera Project Network (2020)

PROJECTS

Customer 360 Data Integration & Real-Time Profile Activation using Adobe Experience Platform (AEP) | Pace University, 2025

Implemented an end-to-end Customer 360 data pipeline using Adobe Experience Platform to unify customer interactions from CRM, website analytics, mobile app, and POS systems. Designed XDM schemas, configured identity stitching, and enabled Real-Time Customer Profiles for activation. Built ingestion pipelines using batch sources, streaming sources, and Data Prep transformations. Activated audiences to downstream destinations and analyzed customer behavior using Customer Journey Analytics (CJA).

Role: AEP Data Engineer – Responsible for data ingestion, schema design, identity resolution, and profile activation - Designed XDM Profile and ExperienceEvent schemas to standardize multi-source customer data across CRM, web, POS, and mobile systems.

- Implemented data ingestion pipelines and data transformation systems using batch connectors and streaming APIs to support business data demands.

- Configured Adobe Identity Service using Email, ECID, and Phone namespaces to improve identity stitching accuracy and reduce duplication.
- Enabled Real-Time Customer Profile and validated merge policies to ensure consistent 360-degree unified profiles.
- Built audience segments based on behavioral, demographic, and engagement attributes for targeted personalization.
- Activated audiences to destinations including Adobe Target, Meta Ads, and Email marketing systems for real-time activation.
- Created analytical dashboards in CJA to visualize event-level insights, conversion paths, and segment performance.
- Collaborated with the analytics team to design reliable data solutions and ensure engineering best practices were defined and adhered to.

Real-Time Personalized Journey Orchestration using Adobe Journey Optimizer (AJO) | Pace University, 2025

Developed personalized cross-channel customer journeys using Adobe Journey Optimizer, driven by real-time behavioral triggers from AEP. Built multi-step workflows including branching logic, wait times, and dynamic personalization using Offer Decisioning. Configured audience eligibility, created email/push templates, and monitored journey performance with AJO insights to improve engagement and retention.

Role: AJO Journey Developer – Responsible for journey design, messaging, and real-time orchestration

- Created real-time customer journeys triggered by AEP Experience Events (cart abandonment, sign-up, first visit, inactivity).
- Configured branching rules, conditional checks, wait steps, and scheduling logic to personalize journey flow.
- Built and personalized email, push, and in-app message templates using profile attributes and Offer Decisioning.
- Integrated AJO with AEP audience segments for dynamic eligibility and real-time journey activation.
- Implemented frequency caps, suppression logic, and send-time optimization to enhance user experience and message consistency.
- Managed offer rules, decision scopes, and constraints to deliver relevant content based on user behavior and preferences.
- Monitored journey performance using AJO insights (delivery rate, opens, clicks, dropout points) and optimized workflows accordingly.
- Collaborated with peers on journey testing, event configuration, template design, debugging, and iterative optimization.

Fraud Detection System for Insurance Claims using AWS | Pace University, 2024

Developed a cloud-native fraud detection platform to analyze and classify insurance claims in real time. Leveraged AWS services (S3, Lambda, RDS, SageMaker, Glue, Kinesis) to build a scalable data pipeline for ingestion, preprocessing, and model deployment. Implemented machine learning classifiers (Random Forest, Gradient Boosting) for anomaly detection, achieving ~90% accuracy. The system integrated real-time monitoring and alerting, reducing false positives and optimizing claim validation efficiency.

Role: Co-Developer – Responsible for ML model development, AWS cloud integration, and system validation

- Designed a fraud detection pipeline leveraging AWS services including S3 (data storage), Lambda (serverless processing),RDS (database), and SageMaker (model training & deployment).
- Developed and trained classification models (Random Forest, Gradient Boosting) in Python to detect anomalous claimpatterns and minimize false positives.
- Designed scalable ETL processes and wrote Python scripts for data extraction, manipulation, and production from database tables.
- Built and incorporated automated unit tests and participated in integration testing efforts to ensure system reliability and code quality
- Integrated real-time data streaming with AWS Kinesis, enabling continuous fraud monitoring and alerts.
- Evaluated system performance achieving ~90% fraud detection accuracy, improving claim validation efficiency and reducingmanual review efforts.
- Collaborated with teammates on debugging, workload division, and performance optimization, while ensuring scalability andcloud security best practices.

Generation of Synthesised Human Face using Neural Radiance Fields (NeRF) | Amrita Vishwa Vidyapeetham, 2023

Implemented an AI-driven pipeline to generate photorealistic 3D human faces from short video clips. Applied Deformable Neural Radiance Fields (NeRFs) to capture non-rigid facial dynamics and improve rendering accuracy. Built the training framework using JAX/Flax and TensorFlow, and integrated preprocessing tools (COLMAP, OpenCV, Mediapipe) for data

preparation. Achieved high-fidelity novel view synthesis validated by PSNR metrics, outperforming baseline NeRF models in both training speed and inference quality.

Role: Team Member – Responsible for model development, experimentation, and evaluation
- Contributed to implementing Deformable NeRFs for capturing non-rigid facial dynamics; developed the training pipeline using JAX/Flax and TensorFlow.
- Built Python modules for data preprocessing (COLMAP, OpenCV, Mediapipe), MLP-based deformation fields, and rendering + depth outputs.
- Conducted experiments with PSNR metrics to benchmark accuracy against baseline NeRF; optimized training for faster convergence and reduced memory usage.
- Assisted in integrating model outputs into a real-time synthesis pipeline and validated results across multiple shortspanvideos.
- Collaborated with peers by dividing modules (data processing, training, evaluation, visualization) and participated indebugging sessions, weekly reviews, and research discussions with faculty guide.

Cryptocurrency Price Prediction using On-Chain Data & Deep Learning | Amrita Vishwa Vidyapeetham, 2023

Designed and deployed a deep learning system to forecast Bitcoin price trends using on-chain blockchain data and market indicators. Implemented multiple models (LSTM, CNN, RNN, SAM-LSTM with CPD) to handle sequential volatility and detect emerging market patterns. Integrated feature engineering, data visualization, and benchmarking with regression models (Linear, Lasso, Ridge, XGBoost, Voting Regressors). Achieved up to 0.99 R^2 accuracy with XGBoost and deployed a Flaskbased web app for real-time forecasting with authentication and visualization.

Role: Co-Developer – Jointly responsible for model building, coding, evaluation, and deployment
- Designed and implemented multiple ML/DL models (LSTM, CNN, RNN, SAM-LSTM with CPD) to capture volatility in BTCprice prediction; led the implementation of SAM-LSTM + CPD for trend detection.
- Shared coding responsibilities for data preprocessing, feature selection, and visualization using Python, NumPy, Pandas, andMatplotlib; built model training workflows with TensorFlow and Scikit-learn.
- Benchmarked models (Linear, Lasso, Ridge, XGBoost, Voting Regressor) using MAE, RMSE, and R^2, achieving up to 0.99 R^2accuracy with XGBoost.
- Co-developed a Flask-based web application with user authentication and a 7-day crypto price forecasting feature, ensuringend-to-end usability.
- Coordinated with teammate to divide tasks across data handling, ML modeling, and backend integration; jointly conducteddebugging, validation, and performance testing.