PRASHANNA RAJ PANDIT

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Summary

Machine Learning and Data Science professional with 2+ years of hands-on experience building, evaluating, and deploying data-driven models across computer vision, NLP, and time-series domains. Strong background in statistical modeling, feature engineering, and MLOps, with proven ability to design end-to-end ML pipelines using Python, SQL, Docker, GitHub Actions, and cloud platforms. Experienced in translating complex data into actionable insights and production-ready solutions.

Skills

Languages: Python, R, C++, SQL

Frameworks: Flask, TensorFlow, Keras, Optuna, REST API, OpenPose

Libraries: Pandas, NumPy, Scikit-learn, SciPy, Matplotlib, OpenCV

Tools & Platforms: Git, GitHub, Docker, GitHub Actions, AWS (S3, EC2), Airflow, MLflow, Tableau, Bash, Linux

Concepts: Data Cleaning, Data Pipelines, Time-Series Forecasting , Machine Learning, Deep Learning, Statistical Modeling, Feature Engineering, Data Visualization, Model Optimization, MLOps, SDLC, CI/CD, ML-Pipelines, Model Deployment

Experience

Research Assistant **Jan 2025 – Present**
Southern Illinois University Edwardsville *Edwardsville, IL, USA*

- Extracted 2D keypoints from 206 video datasets using OpenPose and processed JSON data with Pandas, NumPy, and OpenCV via Bash scripts to compute gait kinematic features (stride length, cadence, joint angles), demonstrating strong Python proficiency and data handling of large datasets.
- Preprocessed gait time-series data via cubic spline interpolation, Savitzky-Golay smoothing, gait phase detection, and turn removal; engineered a multimodal dataset for deep neural networks, built automated data pipelines, and visualized results using Matplotlib and Seaborn to enhance experimental efficiency.
- Developed a logistic regression baseline achieving 72% accuracy and a deep learning model (80K parameters) achieving 88% accuracy on gait classification for Autism detection, demonstrating strong proficiency in statistical and machine learning models implementation..

Software Engineer **Jan 2023 – Jul 2024**
Vrit Technologies *Kathmandu, Nepal*

- Built and deployed a Flask-based web application with RESTful APIs, leveraging SQL-backed structured data models and JSON-based data exchange to support analytics, reporting, and backend business logic; improved system performance and SEO metrics by 20%.
- Designed and maintained data workflows using SQL queries for data retrieval, transformation, and validation, enabling reliable storage, querying, and integration of application data across services.
- Implemented CI/CD pipelines using GitHub Actions and Docker in a Linux environment, automating testing and deployment and reducing manual release effort by 40%, while collaborating with the team using Git and Bash scripting.

Projects

Predictive Analytics on Iranian Telecom Data | *R, Machine Learning, Tableau, GitHub Actions* **Academic Project**

- Forecasted telecom network usage using Poisson, Negative Binomial, Ridge, and Lasso regression models, addressing overdispersion and multicollinearity. Reduced RMSE by 34% through optimized modeling and feature engineering.
- Classified customer complaints with Logistic Regression with SMOTE, improving AUC from 0.8206 to 0.924 and accuracy to 87.5%.
- Visualized customer churn, usage frequency, tariff plans, and key performance indicators (KPIs) in Tableau.

MedNLPify | *Deep Learning, NLP, Flask, Chrome Extension, Docker* **Academic Project**

- Built a deep learning NLP model using Tribrid architecture (token, character, and positional embeddings) to classify 200,000+ PubMed RCT sentences, boosting accuracy from 72.5% to **85.6%** through architecture tuning.
- Developed a full end-to-end pipeline - preprocessing, model training, and inference API - using Flask and Docker, enabling scalable and portable deployment.
- Implemented CI/CD with GitHub Actions (reducing manual build time by **45%**) and deployed a Chrome extension delivering real-time medical text classification.

Education

Master of Science in Computer Science **Aug 2024 – May 2026**
Southern Illinois University Edwardsville *Edwardsville, IL, USA — GPA: 3.9 / 4*

Bachelor in Electronics, Communication and Information Engineering **Nov 2018 – Mar 2023**
Tribhuvan University, Institute of Engineering (Pulchowk Campus) *Lalitpur, Nepal — GPA: 3.75 / 4*

Publications & Awards

Best Paper Award – ICT-CEEL 2023 (International Conference on Technologies for Computer, Electrical, Electronics & Communication): Awarded for the paper *"Automation of Driving License Test using Computer Vision and Image Processing"*, an AI-based system achieving 95% mAP for automated driving-test evaluation. View on ResearchGate