Shijal Sharma Poudel

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Research Interests

Leveraging Data for AI, optimization modeling, human-centered system design, behavioral analytics, Data Analysis, machine learning , data-driven decision systems.

Education

Tribhuvan University, Nepal *Bachelor of Science in Computer Application* *2019 – 2023*

- GPA: 3.20/4.00
- **Relevant Coursework:** Machine Learning, Algorithms Complexity, Data Structures, Database Management Systems, Artificial Intelligence, Probability Statistics, Web Technologies
- **Capstone Project:** Credit Card Fraud Detection using Random Forest — awarded Best Final Year Project

Experience

Data Engineer *Kathmandu, Nepal*
Fusemachines *Aug 2022 – Present*

- **Cloud Migration & Cost Optimization:** Played a pivotal role in the migration of data pipelines from Azure Synapse to Databricks, implementing the Medallion Architecture (bronze, silver, gold). Reduced monthly cloud costs by 90% and peak costs by 85%. Simplified business logic, automated pipeline triggers using Terraform, and consolidated Synapse notebooks in Databricks into reusable intermediate tables. Documented all changes and streamlined reporting metrics.
- **ETL Framework Development:** Extracted and ingested data from APIs, Google Sheets, MongoDB, and HubSpot. Created automated data pipelines using Airbyte and Glue Jobs for data transformation and metric generation, integrating AWS S3 with Athena and Superset for seamless data visualization.
- **Instructor & Mentor:** Conducted training sessions on SQL, Apache Spark, Azure technologies, Apache Kafka, and MongoDB. Mentored new data engineering trainees in advanced data engineering topics and practical implementation techniques.

Teaching Experience

Teaching Assistant – Asian School of Management and Technology, Nepal *Jan 2021 – Apr 2021*

- Assisted in teaching undergraduate courses on Algorithms and Database Management Systems.
- Led lab sessions and tutoring, providing hands-on guidance in problem-solving and SQL programming.
- Helped design assignments and assess coding submissions, contributing to a collaborative learning environment.

Projects & Research Experience

Risk Detection Framework for Advanced Nuclear Reactors *2024 – Present*

- Built a risk detection framework to analyze geopolitical news, policy updates, and industry data related to nuclear fuel supply chains.
- Applied web scraping, clustering (unsupervised ML), and automation to classify risks and update visualizations daily.
- Technologies: Python, Selenium, Clustering (K-Means/DBSCAN), Data Visualization

Credit Card Fraud Detection using Random Forest *2023*

- Developed a Random Forest classifier to identify fraudulent credit card transactions with improved accuracy and interpretability.
- Conducted data cleaning, preprocessing, feature selection, and model evaluation using cross-validation.

- Technologies: Python (Scikit-learn), Pandas, Matplotlib

Internal Analytics System – Fusemachines *2022 – 2023*

- Designed a scalable ELT framework for CRM, API, and NoSQL data sources using Airbyte, AWS Glue, and S3.
- Integrated data into Athena + Apache Superset to build dashboards for real-time business intelligence.
- Technologies: Python, Airbyte, AWS (S3, Glue, Athena), Superset

Full Stack E-commerce and Booking System *2022*

- Developed a web application combining an e-commerce platform and a booking interface with integrated payment processing.
- Built both frontend and backend, enabling dynamic routing, secure API calls, and MongoDB integration.
- Technologies: React, Node.js, Express.js, MongoDB, REST APIs

Achievements and Awards

- **Winner – AI Hackathon:** Recognized for developing "Fuse Compliance Monitor", an NLP-based chatbot for compliance monitoring.
- **Mentor and Instructor:** Delivered hands-on training on Apache Airflow, SQL, Apache Spark, and Azure to data engineering trainees.
- **Merit-Based Scholarship:** Awarded academic scholarship during undergraduate studies based on GPA performance.
- **Best Final Year Project:** Honored for building a machine learning model for credit card fraud detection using the Random Forest algorithm.
- **Student Excellence Recognition:** Recognized by faculty for outstanding academic performance and contribution to research and mentorship in data science initiatives.
- **Community Leadership Award:** Acknowledged for organizing tech meetups and leading workshops on data engineering tools and platforms.
- **Outstanding Intern Award:** Commended by Fusemachines for innovation and performance during the Machine Learning internship.

Skills

Programming Languages: SQL(3 +years), Python (2+years),

Database and Tools: PostgreSQL, SQLServer, MSSQL, MySQL, Git, Postman, Github

Cloud Technologies: AWS(S3, AWS Glue, Athena, MWAA)

Orchestration Tools: Apache Airflow

Frameworks: pyspark, pandas, matplotlib, numpy, scikit-learn, OpenCV

Languages: Nepali, Hindi and English