

SAPNA BANIYA

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PROFESSIONAL SUMMARY

Master's student in Data Science and Technical Support Assistant & Research Assistant at the University of New Haven with 3+ years of software development experience. Published researcher in AI/ML for IoT security with strong skills in Python, SQL, data analysis, machine learning, and visualization. Seeking Data Analyst / Data Scientist / ML Internship roles.

EDUCATION

Master of Science, Data Science | Tagliatela College of Engineering, University of New Haven

Jan 2025 – Dec 2026

- Dean's List, Dean's Scholarship – Within Top 1%
- Relevant Coursework: Machine Learning, Deep Learning, Big Data, NLP, Data Visualization, Artificial Intelligence, Distributed Systems

Bachelor's degree | La Grande International College, Pokhara University

- **Achievements:** Merit Scholarship, Dean's List – Within Top 1%

PROFESSIONAL EXPERIENCE

University of New Haven - Research Assistant

2025 – Present | West Haven, CT

- Published a research paper on AI-based IDS for IoT in IEEE Xplore.
- Built ML pipelines to evaluate LSTM, DNN, and Naive Bayes models.
- Performed EDA and preprocessing on IoT attack datasets using Python and Pandas.
- Developed and fine-tuned Large Language Models (LLMs) for current research.

University of New Haven - Technical Support Assistant

2025 – Present | West Haven, CT

- Resolved technical issues and provided hardware/software troubleshooting for university students and faculty.
- Managed technical resources and documented workflows to ensure efficient campus operations.

Nakshatra Techno Hub - Mid-Level Software Developer

Mar 2024 - Dec 2024 | Nepal

- Built ETL pipelines; cut processing time by 30%; Designed relational databases and dashboards; increased insight adoption by 15%
- Processed large datasets with Python and SQL for business analytics.

Wow Finstack Nepal - Software Developer

Oct 2022 - Aug 2023 | Nepal

- Created analytics dashboard tracking system metrics
- Optimized backend, reducing latency 40%.

Orgware Construct - Associate Software Developer

Sep 2021 - Sep 2022 | Nepal

- Built workflow tools and reporting features with performance gains of 40%.

PROJECTS

Self-Driving Taxi using Reinforcement Learning | Python

- Implemented Policy Iteration, Value Iteration, and Q-Learning for autonomous navigation
- Compared convergence, reward curves, and efficiency using visual simulations and plots

AI-based Intrusion Detection Model Evaluation

- Compared LSTM, Naive Bayes, and DNN on UNSW-NB15, BoT-IoT, IoT-23 datasets using Python pipeline

EDA: Doctors Distribution by Country

- Performed EDA using Pandas & Matplotlib to analyze global healthcare workforce trends

TECHNICAL SKILLS

Languages: Python, SQL, R, JavaScript, Golang

Data & ML: Pandas, NumPy, Scikit-learn, PySpark, Matplotlib, Seaborn, Power BI, Tableau

Concepts: Machine Learning, Deep Learning, Reinforcement Learning, NLP, EDA, Feature Engineering, Model Evaluation, Statistics

Tools: Git, AWS, Flask, REST APIs, Linux

PUBLICATIONS:

Baniya, S., et al., A Review of Existing AI-Based IDSs for IoT Networks: Challenges, Datasets, and Improvements (2025)

- Systematic review and analysis of datasets, ML/DL models, and performance benchmarks