

Sudeep Sigdel

Backend Developer | BSc. CSIT Student

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Profile

Final-year BSc. CSIT student at Tribhuvan University who builds production-grade backend systems and ML-powered applications end to end — from a live NEPSE stock-signal service (FastAPI + XGBoost) to a security scanner and a hackathon-built disaster-relief platform. Strong across the full backend stack: REST APIs, WebSockets, authentication, containerization, and database design.

Education

BSc. Computer Science and Information Technology (CSIT) — Expected 2027

Tribhuvan University, Nepal

Relevant coursework: Data Structures & Algorithms, Database Management Systems, Operating Systems, OOP, Software Engineering

Technical Skills

Backend: FastAPI, REST APIs, WebSockets, JWT, OAuth2, RBAC

Databases: PostgreSQL, SQLAlchemy, Alembic, MySQL

Machine Learning: XGBoost, scikit-learn, pandas, NumPy, SHAP, walk-forward validation

Languages: Python, C, C++, C#, Java (fundamentals)

Tools: Git, Docker, Postman, Linux, uvicorn

Concepts: API Security, Database Design, DSA, OOP, Signal Processing, Backtesting

Projects

NEPSE Stock Signal System — Final Year Project

Python · XGBoost · FastAPI · pandas · scikit-learn · Docker · React | fyp.sudeepsigdel.com.np

- Built an **end-to-end machine learning system** for NEPSE stock signals — data ingestion, feature engineering, model training (separate XGBoost BUY/SELL classifiers), and deployment via FastAPI, covering 100 tracked symbols.
- Engineered **24 technical indicators** (RSI, MACD, Bollinger Bands, OBV, momentum features) to predict 10-day forward returns.
- Designed a **9-fold walk-forward validation framework** with a 20-day embargo to prevent data leakage, evaluating realistic out-of-sample performance across 2018–2026.
- Tuned confidence thresholds (0.50–0.70) to isolate high-conviction signals — at the top threshold, achieved a **1.48 profit factor** (vs. 0.76 for a signal-only baseline) and a **0.61 annualized Sharpe ratio** across 3,664 backtested trades.
- Shipped a production **FastAPI + React service** with JWT/Google OAuth accounts, persisted watchlists and portfolios, a rule-based exit engine (stop-loss, time-based, signal decay) covered by 18 unit tests, and Docker + GitHub Actions CI/CD deployment to Azure.

CrisisCare — Disaster Relief Coordination Platform (Backend)

FastAPI · PostgreSQL · WebSockets · JWT · built in a 36-hour hackathon | crisis-care-vxqw.vercel.app

- Designed and implemented the **backend architecture** for a real-time disaster relief coordination platform connecting citizens, volunteers, and administrators — built solo in 36 hours.
- Built a secure **JWT-based authentication system with RBAC** and scalable REST APIs (PostgreSQL + SQLAlchemy) supporting requests, resource allocation, and coordination workflows.

WebGuard — Web Vulnerability Scanner

FastAPI · SQLAlchemy · PostgreSQL

- Built a scanner that **crawls a target site** and tests discovered forms and URL parameters for SQL injection, reflected XSS, and missing CSRF protections.
- Combined **error-based, boolean-blind, and time-based SQLi detection** with authenticated-session crawling, persisting scans and findings to PostgreSQL.