SHAUNAK RANE

AI/ML Undergraduate | Data Science, Machine Learning & Backend Engineering
+91 93202 21211 | shaunakrane914@gmail.com | Dombivli, Maharashtra
github.com/Shaunakrane914 | sr914.netlify.app

PROFILE

AI/ML undergraduate with two Univitt Technologies internships spanning software engineering, data science, and machine learning. Experienced with Python, PyTorch Geometric, FastAPI, Docker, causal validation, and production-minded testing.

EDUCATION

Universal AI University | B.Tech, Artificial Intelligence & Machine Learning | Expected 2028
Karjat, Maharashtra

EXPERIENCE

AI Intern | Univitt Technologies | Jul 2026 - Present

- Developed a physics-grounded condition-monitoring platform for centrifugal compressors across 3 plants and more than 4,000 daily historian records.
- Reproduced 3,879 historical degradation-index (DFI) rows to <1e-10 absolute difference and added causal maintenance-event logic with 17/17 regression checks passing.
- Audited 400+ process and mechanical variables, evaluated statistical and ML forecasts, and used Docker for reproducible backend workflows; retained only outputs that passed promotion gates.

Software Intern | Univitt Technologies | Apr 2025 - Jul 2025

- Built a food-optimization and cost-management program for a Sodexo canteen using FastAPI and SQL.
- Implemented menu generation, bill-of-materials calculations, inventory and cost workflows, meal-attendance forecasting, and operator-facing views.

PROJECTS

TopoFlow GNN | Python, PyTorch Geometric, FastAPI | GitHub

- Benchmarked GraphSAGE against Kozeny-Carman physics across 1,231 pore-network samples from 5 formations, using pore-size heterogeneity to select the modeling regime.
- Reduced MSE by 46.2% on Savonnieres and 28.4% on Estaillades while retaining physics baselines for the other 3 formations.
- Implemented pore-network processing, model training, FastAPI inference, and scientific visualizations with PyTorch Geometric.

Project Aegis | FastAPI, Gemini API, Supabase, WebSockets | GitHub

- Built backend orchestration for a threat-intelligence prototype with schema-constrained Gemini outputs, API-key isolation, fallback routing, REST observability, and WebSocket telemetry.

Gridium Protocol | Python, FastAPI, React Three Fiber, Web3 | GitHub

- In a 3-person team, implemented the Python AI engine, backend integration, and 3D visualization for a 15-node simulated microgrid with DDPG control.

ENGINEERING PRACTICE

- Reproducibility: versioned experiments, Docker workflows, regression checks, causal rolling-origin evaluation, and documented promotion gates.
- Collaboration: defined API boundaries across AI, backend, and 3D components in a 3-person team and maintained setup, architecture, and research documentation.

TECHNICAL SKILLS

Languages: Python, TypeScript/JavaScript, C, SQL
ML & Data: PyTorch, PyTorch Geometric, scikit-learn, pandas, NumPy, statsmodels
Backend & Web: FastAPI, Flask, React, REST APIs, WebSockets, PostgreSQL, MySQL, Supabase
Engineering: Docker, Git/GitHub, pytest, API validation, causal time-series evaluation, data visualization