

Asmit Rai

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SUMMARY

Computer Science Engineering student with a 9.58 CGPA and hands-on experience building Python-based machine learning and software engineering systems. Experienced in scikit-learn, statistical model evaluation, ML failure analysis, FastAPI, and end-to-end predictive systems. Focused on building reliable, applied AI/ML systems.

EDUCATION

SRM Institute of Science and Technology (SRM KTR) Chennai, Tamil Nadu
B.Tech — Computer Science and Engineering (Core) | Expected Graduation: May 2028 | CGPA: 9.58

JVM Shyamli — 10+2 (Higher Secondary) Ranchi, Jharkhand
10th Grade: 92% | 12th Grade: 78.2%

EXPERIENCE

Jharkhand Education Project Council (JEPC), Ranchi Jun. 2026 – Jul. 2026
Intern — e-Vidya Vahini (eVV) Development Team

- Supported software development and functional testing for the enterprise e-Vidya Vahini platform by collaborating with the JEPC development team.
- Executed functional checks and software verification across platform changes to support test readiness and system reliability.
- Assisted with hosting operations and data backup workflows to support service continuity and data recoverability.

PROJECTS

ModelXray — ML Model Failure Discovery & Regression Platform
Python, FastAPI, Scikit-learn, SciPy, Next.js, TypeScript

- Engineered a black-box ML failure-discovery engine with **5 hypothesis-search strategies**, budgeted experiment selection, BH-FDR correction, holdout validation, and confidence-interval-based evidence.
- Evaluated across **30-seed MXBench runs**, achieving **0.90 discovery** on covariate-shift/correlated failures, **0.00 fabrication-only FDR**, and **1.00 counterexample replay validity**; added failure clustering and model-version regression.

RepoLens — Repository Intelligence Platform
Next.js, TypeScript, FastAPI, Python, Tree-sitter, NetworkX

- Engineered a static repository-analysis pipeline for Python, JavaScript, TypeScript/TSX, and Java, reconstructing dependency relationships and project architecture without executing repository code.
- Built graph-based analysis for dependency relationships, cycles, strongly connected components, and module importance, with interactive architecture/dependency visualization.
- Stress-tested the analyzer on large open-source repositories, processing **31K+ source files** and **32K+ graph nodes**, while implementing safeguards for archive size, extraction limits, and computational bottlenecks.

Financial Risk Prediction Engine
Random Forest, FastAPI, Next.js, MySQL

- Achieved **~82% prediction accuracy** for pre-delinquency loan-default prediction using borrower and repayment-risk features through a Random Forest pipeline.
- Engineered FastAPI model serving and integrated Next.js + MySQL to deliver an end-to-end risk-scoring workflow.

CERTIFICATIONS

Oracle Cloud Infrastructure (OCI) 2025 AI Foundations Associate (1Z0-1122-25) Oct. 2025
Score: 93% (Pass)

NPTEL (IIT Kharagpur) — Programming in Java Jul. 2025 – Oct. 2025
Consolidated score: 79%

SKILLS

AI / Machine Learning: scikit-learn, Random Forest, Statistical Validation, Predictive Modeling, Risk Modeling

Programming: Python, Java, C++, C, JavaScript, TypeScript, SQL

Frameworks / Engineering: FastAPI, Next.js, React, Spring Boot, Node.js, Tree-sitter, NetworkX

Databases: MySQL, PostgreSQL

Tools: Git, GitHub, Docker, Linux