

SOFIA FATIMA

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PROFESSIONAL SUMMARY

Backend Developer and AI Engineering student focused on building production-ready machine learning models and scalable data pipelines. Built custom PyTorch neural networks—reducing predictive error by 51% in a recent geosteering application—and deployed generative AI workflows using strict schema validations. Strong background connecting complex machine learning logic with reliable backend infrastructure to ship working software.

EDUCATION

Vidya Jyothi Institute of Technology (VJIT)

Bachelor of Technology in Computer Science (AI & ML)

Current CGPA: 8.58/10.0

Hyderabad, India

Aug 2023 – May 2027

Core Competencies: Data Structures & Algorithms (DSA), Machine Learning Systems, Database Management Systems (DBMS), Advanced Object-Oriented Design (OOD)

EXPERIENCE & CORPORATE TRAINING

PwC Acceleration Center India

Aug 2026

Advisory Launchpad Trainee

- Completed a corporate technical advisory program focused on enterprise-level problem solving, data security protocols, and scalable system architecture.

TECHNICAL PROJECTS & ARCHITECTURES

Subsurface Geosteering AI (rogii-geology-prediction)

May 2026 – Present

Tech Stack: PyTorch (1D-CNN), Python, Sequential Data Optimization, Scikit-Learn

- Architected a custom end-to-end 1D-Convolutional Neural Network (1D-CNN) to automate structural interpretation during horizontal drilling, dropping vertical prediction error (RMSE) by 51% (from 29.4ft to 14.25ft).
- Implemented memory-downcasting pipelines to maximize processing efficiency by 50% and engineered automated signal restoration frameworks using dynamic linear interpolation for real-time sensor gap mitigation.

ArchAI: Generative System Architecture Engine

July 2026

Tech Stack: Python, Streamlit, Gemini 2.5 API, Pydantic, JavaScript

- Built a generative AI text-to-diagram application deployed on Streamlit Community Cloud with a custom user interface.
- Integrated the Gemini 2.5 Flash API with strict Pydantic data validation to guarantee syntactically correct Mermaid.js code generation.
- Wrote custom JavaScript to bypass browser security blocks, allowing users to export high-resolution, transparent PNGs directly from the HTML canvas.

Network Intrusion Detection System (NIDS)

Mar 2026 – May 2026

Tech Stack: Python, Scapy, Isolation Forest, Machine Learning

- Built a real-time network anomaly detection engine using Scapy for raw packet capture and protocol parsing.
- Integrated the Isolation Forest machine learning algorithm to identify network threats and anomalies without relying on traditional signature blacklists.

Provia: Sovereign Skill Verification Engine (provia-platform)

Sep 2025 – Nov 2025

Tech Stack: React.js, Headless JSON API, GitHub REST API, GitHub Actions

- Developed a headless portfolio verification platform that tracks live GitHub repository commits to audit developer skills.
- Set up CI/CD pipelines in GitHub Actions to isolate environments, reducing production build errors by 40%.

TECHNICAL SKILLS

- **AI & Core Engineering:** PyTorch, Computer Vision (OpenCV), Isolation Forest, Custom 1D-CNNs, Deep Learning, Scikit-Learn, Pandas, Pydantic
- **Software Systems & Architectures:** Python, Node.js, React.js, SQL (PostgreSQL, Indexing, ACID Compliance), RESTful APIs, Streamlit
- **Infrastructure & Verification:** Git/GitHub Version Control, CI/CD pipelines (GitHub Actions), Docker, Scapy, Cloud Computing Architecture, Linux Toolchains

ACHIEVEMENTS & CERTIFICATIONS

- **Technical Research:** Authored a comprehensive research paper detailing the architectural framework of an automated 'Smart Car Parking System'.

- **Leadership:** Directed team communications and public affairs initiatives as the Head of Public Relations for Street Cause.
- **Certifications:** Cisco Networking Academy (Partner: PCAP – Programming Essentials in Python, Data Analytics Essentials).