

LAKKSHYA JHA

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SUMMARY

Engineering student with hands-on product and technical experience building data-driven, decision-oriented systems, including a risk-scoring framework that classifies model outputs into accept/review/reject tiers using confidence, margin, and uncertainty metrics. Contributor to open-source ground-segment tooling (LibreCube/Yamcs). Skilled at translating ambiguous requirements into shipped features used by 3,000+ end users, working across engineering, design, and operations. Track record of ownership through leading cross-functional initiatives and large-scale technical events.

EDUCATION

Thapar Institute of Engineering and Technology
Bachelor of Engineering in Computer Engineering
Relevant Coursework: Data Structures, Algorithms, OOP, OS, DBMS, Computer Networks

Aug 2024 – May 2028
Patiala, Punjab

EXPERIENCE

Software Engineering Intern | COE-FS, Thapar University
Patiala, Punjab

Mar 2026 – Present

- Partnered with research stakeholders to scope and ship a frontend for a research platform serving 100+ active users, translating user feedback into prioritized feature and usability improvements.
- Integrated RESTful APIs with robust asynchronous data handling and collaborated cross-functionally on deployment (Docker, Nginx), balancing engineering trade-offs against release timelines.

Software Engineering Intern | CTD, Thapar University
Patiala, Punjab

Jan 2026 – Mar 2026

- Owned end-to-end delivery of a full-stack attendance management platform adopted by 3,000+ students and trainers, from requirements gathering through launch (Next.js, TypeScript, PostgreSQL/Prisma).
- Designed a fraud-prevention control for attendance verification using time-bound 6-digit codes (20-second expiry) and rate-limiting (5 attempts/min per student), directly reducing a known abuse vector (proxy attendance).
- Defined role-based access policies (Admin, Trainer, Student) with JWT authentication and email verification, and specified 15+ RESTful API endpoints with analytics dashboards (Recharts) for stakeholder visibility.

PROJECTS

Prajñā — Responsible AI Risk-Decisioning Framework
Python, PyTorch, ONNX, Streamlit, Pytest, Embedding-Based Matching

- Designed a three-tier decision framework (Accept / Review / Reject) to evaluate the trustworthiness of AI predictions using confidence, margin, and entropy-based uncertainty; validated it on image classification before extending it into a production-style face recognition system.
- Evolved the framework into a two-stage hierarchical pipeline routing queries between a fast, low-cost model and a high-fidelity model, mirroring a tiered risk-review process used to balance speed against accuracy in high-volume decisioning.
- Defined a composite confidence score (quality, similarity margin, identity ambiguity) to set explicit accept / reject / escalate-for-review thresholds, directly analogous to fraud and credit risk decisioning; validated via 6 calibration experiments and 32 unit tests, and surfaced results through a 5-tab analytics dashboard (Streamlit, Plotly) with a multilingual explanation layer for stakeholder review.

LibreCube (Open Source) — Mission Control Telemetry Tooling
Python, ElementTree, xlwt, Docker, Yamcs

- Built `convert_xtce.py` for LibreCube's ground-segment stack, parsing XTCE telemetry schemas (ElementTree) and dynamically exporting them into a Yamcs-compliant legacy .xls mission database (xlwt), autonomously organizing telemetry into structured sheets (Parameters, Commands, Arguments, Containers) plus a generated General configuration sheet.
- Validated production-readiness by mounting the output into a local Yamcs Docker container and querying its HTTP API, confirming all 35 parameters, 3 containers, and 3 commands loaded without errors; merge request reviewed and merged into the prototype repository.

Tunnet — AI-Powered Music Analysis Engine
Python, scikit-learn, FastAPI, NLP

- Designed an end-to-end ML pipeline (scikit-learn) clustering tracks by acoustic features and NLP-based lyric sentiment into a hybrid scoring model, and scoped a FastAPI backend with asynchronous background processing to handle large user libraries while keeping status-check responses fast.

POSITIONS OF RESPONSIBILITY

Innovator | Centre of Excellence in Data Science & AI (COE-DS&AI), TIET

Aug 2025 – Present

- Led organization of the official pre-event for the India Impact AI Summit 2026, owning logistics and outreach; coordinated AI-focused workshops for 50+ attendees per session.

Senior Coordinator | Centre for Training and Development (CTD), TIET

Oct 2024 – Present

- Promoted to Senior Coordinator (Aug 2025) for consistent leadership; helped organize CTD's first flagship 3-day professional development event and represented CTD on Open Day.

TECHNICAL & ANALYTICAL SKILLS

Languages: Python, C, C++, JavaScript, TypeScript
Data / ML & Decision Systems: NumPy, Pandas, scikit-learn, risk scoring, threshold calibration
Systems & Tooling: XML/XTCE parsing, Docker, Yamcs, Git, open-source contribution workflow
Product & Analysis: Requirements scoping, stakeholder comms, dashboarding (Recharts, Plotly), Figma, Git
Soft Skills: Leadership, Event Management, Research, Cross-Functional Collaboration