Pavan K. Sharma

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Summary

I am a Computer Science undergraduate who builds things end to end and cares about the full picture — not just whether the code runs, but whether it is reliable, maintainable, and actually useful to the people depending on it. My work sits at the intersection of **software engineering and data**: I design backend systems with clean architecture and write analytical pipelines that turn raw data into decisions. I have shipped production software, published ML research, and built tools used by real users. I work well in collaborative teams, communicate technical findings clearly to non-technical stakeholders, and pick up new technologies by applying them to real problems rather than studying them in isolation.

Education

B.Tech in Computer Science 2023 – Present
Chandigarh University, Punjab, India
- Coursework: Data Structures & Algorithms, Machine Learning, Probability & Statistics, Database Systems, Operating Systems, Computer Networks, OOP, Distributed Systems

Technical Skills

Languages: Python, Java, JavaScript, C++, SQL, C#
Backend & Architecture: FastAPI, REST APIs, SQLAlchemy, JWT Auth, RBAC, OOP, SOLID Principles, Layered Architecture
Data & ML: Pandas, NumPy, scikit-learn, EDA, Statistical Analysis, Feature Engineering, NLP, Data Pipelines, ETL/ELT
Cloud & DevOps: AWS (Lambda, S3, EC2), Azure (ADF, Synapse, ADLS Gen2), Docker, CI/CD (GitHub Actions), Linux/Unix, Shell Scripting, Git
Databases: PostgreSQL, MySQL, MSSQL, MongoDB, Query Optimisation, Indexing, Data Modelling

Experience

Hireonix AI — ***LinkedIn*** Remote, India
Software Engineer Intern *Present*
- Built and maintained **Python backend services and data pipelines** — designed the service layer so each component had a single responsibility and could be tested in isolation, which paid off when debugging concurrent access issues that would have been invisible in a monolithic design.
- Ran **data analysis on platform usage** to surface patterns in user behaviour — formulated hypotheses, validated them against the data, and translated findings into a product recommendation that the team acted on. The analysis was only as useful as the decision it enabled.
- Built and maintained **CI/CD pipelines on GitHub Actions** with automated testing gates — treated deployment automation not as a convenience but as a quality discipline. Maintained internal documentation that reduced onboarding time for new team members.

Wictronix — ***LinkedIn*** Mohali, India (Hybrid)
Software Engineer Intern *May – July 2024*
- Delivered four client-facing web products under real timelines — learned that understanding what a client actually needs (which is sometimes different from what they ask for) is as important as building it correctly. Caught and fixed a silent drop-off issue through user data analysis before it reached the client review.

Projects

Finance Analytics Backend — ***GitHub***
Python, FastAPI, PostgreSQL, SQLAlchemy, Docker, JWT, GitHub Actions
- Designed a **production-grade financial backend** with strict layered architecture — API, service, and data layers each with a single responsibility, so no route contained business logic and every component could be tested independently. Used `Numeric(12,2)` precision types for monetary values, composite SQL indexes on `(owner_id, date)` for analytical query performance, and per-user TTL caching to absorb read spikes.
- Enforced RBAC at the data layer — privilege escalation blocked regardless of request body — and wrote **52 automated tests** covering concurrent access, ownership isolation, and auth flows. Containerised with **Docker**, deployed via **CI/CD pipeline** that blocks broken code from reaching main.

Web Traffic Trend Analyzer — ***Live***
Python, Pandas, SQL, Matplotlib, Streamlit
- Built an **end-to-end data analysis tool** over 100K+ records — asked what the data could tell us beyond the obvious metrics, and surfaced a 32% traffic spike tied to specific content windows that had gone unnoticed. Built a **Streamlit dashboard** to communicate findings to non-technical stakeholders; the output was designed to be actionable, not just accurate.

Fake News Detection — ***Published, MMCITRE 2024***
Python, scikit-learn, Pandas, NLP, TF-IDF, Logistic Regression
- Designed a full **ML pipeline** over a 40K+ article dataset — data cleaning, **feature engineering (TF-IDF)**, classifier training, and rigorous evaluation (cross-validation, precision/recall, confusion matrix). Achieved 94.2% accuracy. Documented model limitations honestly before publishing as a **peer-reviewed research paper** — the discipline of stating what your model cannot do is as important as what it can.

Achievements & Certifications

- **AWS Certification** — LinkedIn Learning (Verified) | **Letter of Recommendation** — Project Aptify
- **Core Team Member — IEEE CUSB** | **E-Suraksha National Hackathon** (Round 1 Qualified)