Pranab Rai

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Education

CHRIST (Deemed to be University) — Bangalore, Karnataka
Master of Computer Applications | 8.8 CGPA(till date) — *July 2024–Present*

CHRIST (Deemed to be University) — Bangalore, Karnataka
Bachelor of Science - Physics, Chemistry, and Mathematics | 8.7 CGPA — *August 2021 – June 2024*

Projects

Student Attendance Monitoring System | *Python, OpenCV, YOLOv8, DeepFace, MySQL* Source Code

- Engineered a real-time attendance monitoring and emotion tracking system using computer vision to automatically detect, recognize, and track students in a classroom with high accuracy.
- Automated attendance logging and student engagement analysis by integrating DeepFace to track 7 core emotional states, storing real-time results in a MySQL database.
- Fine-tuned a YOLOv8 model on a custom dataset of 20 students, leveraging transfer learning from a ResNet base to boost recognition accuracy.

Credit Risk Analytics & Portfolio Management System | *Python, MySQL, FastAPI, JavaScript* Source Code

- Engineered an end-to-end credit risk analytics platform processing 22,903 transactions across 1,000 customers, achieving a 75.9% on-time payment rate through advanced SQL-based risk stratification.
- Built a RESTful API with 6 operational endpoints using FastAPI, serving real-time KPIs and reducing manual reporting time by 80% through automated data pipelines and Excel integration.
- Developed an interactive web dashboard with 4 dynamic visualizations (Chart.js) displaying portfolio metrics and payment trends, enabling data-driven decision-making for credit operations.
- Implemented 5 advanced SQL queries utilizing CTEs, window functions, and multi-table joins to identify high-risk customers, analyze payment behavior patterns, and optimize collection strategies.

SpaceX Falcon 9 Landing Prediction | *Python, SQL, Scikit-Learn, Dash, Pandas* Source Code

- Developed an end-to-end machine learning pipeline to predict Falcon 9 rocket landing outcomes with 83.33% accuracy by training and optimizing Logistic Regression, SVM, Decision Tree, and KNN models optimized via GridSearchCV.
- Engineered an interactive dashboard using Plotly Dash to visualize launch records, enabling dynamic filtering by launch site and payload mass to uncover correlations between specific mission parameters and landing success.
- Performed extensive exploratory data analysis (EDA) using SQL queries and Python visualization libraries to evaluate historical trends.

Clinical Decision Support System | *Python, Streamlit, Scikit-Learn, SHAP, LIME* Source Code

- Developed an interactive Clinical Decision Support System using Streamlit, integrating Stroke Data and 22M+ drug interactions to visualize patient risk factors and outcomes.
- Engineered high-performance predictive models (Random Forest, XGBoost) achieving 93% accuracy in risk stratification, utilizing SHAP and LIME for model interpretability.
- Implemented an automated ETL pipeline and NLP-driven text analysis to process medical transcriptions and identify adverse drug interactions, enhancing clinical workflow efficiency.

Experience

Data & Platform Engineer — July 2024 – Present
Government of Karnataka Beneficiary Platform — *Bangalore, India*

- Built a data-driven admin dashboard tracking 5+ key operational KPIs from **300+ submissions across 8 districts**, improving visibility into district-level performance.
- Designed data pipelines to clean, validate, and aggregate survey data, enabling faster reporting and automated CSV/Excel outputs for officials.
- Architected a secure and scalable backend using **Node.js**, **Express.js**, and **MongoDB**, featuring 2-tier role-based access system (Admin, Public) with **JWT** authentication to handle sensitive government data.
- Developed a responsive, bilingual (**English/Kannada**) frontend with **Next.js**, including an admin dashboard for data visualization for 5+ key performance indicators from survey data and a **CSV export** feature to drive data-informed policy decisions.
- **Technologies:** Python, Excel, Next.js, Node.js, MongoDB.

Achievements

- Secured 1st place out of 50+ teams in SHELLS 2025, a national-level technical competition hosted by Kristu Jayanti College, Bangalore.
- Secured 1st place in Tek'Olma 2024, an inter-collegiate science fest hosted by St. Joseph's University, Bangalore

Leadership Experience

- Served as a Committee Head in Gateways 2025, organizing a national-level fest where 6 countries participated.
- Managed Events and Technical team (35+ students) as a Core Member for Revelations 2025, contributing to a fest with 350+ participants.
- Core Member for Xebit 2024 and lead the Logistics team having more than 25 students.

Technical Skills

Core Analytics: SQL (CTEs, Window Functions, Joins), Python, Excel, Google Sheets
Visualization: Matplotlib, Seaborn, Tableau, Plotly Dash
Programming: Python (Pandas, NumPy), JavaScript
Databases: MySQL, PostgreSQL, MongoDB
Tools & Platforms: Git, AWS, FastAPI

Certifications

- **IBM Data Science Professional Certificate** | *Coursera/IBM*
- **Data Scientist** | *DataCamp*
- **Associate Data Engineer** | *DataCamp*
- **AWS Academy Graduate - Cloud Foundations** | *Amazon*
- **SQL Fundamentals** | *DataCamp*