



# SAKSHAM PARIHAR

Final Year Undergraduate

Electrical Engineering

Indian Institute of Technology Kanpur

sakshamp026

psaksham22@iitk.ac.in

Saksham Parihar

(+91)-7905767992

Year	Degree	Institute	CPI/%
2022-Present	B.Tech, Electrical Engineering	Indian Institute of Technology, Kanpur	8.51/10.0
2022	CBSE(XII)	M.V. Convent Inter College, Prayagraj	92.4%
2020	ICSE(X)	St. Joseph's College, Prayagraj	96.8 %

## WORK EXPERIENCE

### Standard Chartered

Bengaluru, India

Credit Risk & Portfolio Management Analyst Intern May '25 - Jul '25

- Automated the **Quarterly Credit Risk Monitoring Reports** (including the **IFRS9** and **IRB model dashboards**) by integrating **EAD**, **LGD**, and **PD** metrics across model families and cohorts, streamlining regulatory reporting workflows.
- Supported the **validation** of credit risk models by applying **Binomial Tests**, **Discriminatory Power Tests**, and performance benchmarking against **Observed Default Rates (ODR)** and **External Ratings**, aligned with **Basel III** and **IFRS9** compliance requirements.
- Migrated legacy **SAS-based risk model scripts** to optimized **Python codebases**, improving **data pipeline efficiency**, reducing **runtime latency**, enhancing **model scalability** and **auditability** through **data mining** and performance tuning.
- Developed a local **RAG pipeline** using **LangChain**, **FAISS**, **MiniLM embeddings**, and **LLaMA 3** via **Ollama** to enable semantic search and context-aware querying over multiple PDFs
- Enabled AI-assisted access to internal documents while ensuring **data confidentiality** and **regulatory compliance** by avoiding cloud models and deploying all components locally.

### Spotonix Inc.

San Francisco, CA, USA

GenAI Development Intern

May '24 - Jul '24

- Analyzed **Natural Language Queries** on **Business Intelligence** data using **Large Language Models (LLMs)**.
- Explored and compared **multiple prompting frameworks**, mainly testing the **DSPy Framework**, identifying the best **prompting strategies** for business use cases.
- Employed **OpenAI API**, **Instructor Package**, and **DSPy** to benchmark LLMs, with extension to LLaMA2 and Gemini.
- Used the **TPCDS benchmark dataset** containing **natural language and SQL queries** to evaluate model performance.
- Supported the **GenAI team** with **data-backed insights** on switching to **DSPy Framework** for scalable LLM applications.

## SKILLS

- Languages:** C, C++, Python, Java, R, Bash, Prolog, Haskell
- Libraries:** Numpy, Scikit-learn, Tensorflow, Pytorch, Keras, Matplotlib, Pandas, OpenCV, PsychoPy, DSPy Framework
- Web :** HTML, CSS, ReactJS, Spring Boot
- Utilities :** Git, Pin, MySQL, flex, Bison, AWS, PuTTY, Jira

## MISCELLANEOUS

- Among the **top 70** candidates qualifying for round 2 in the **Bruce Henderson Ideathon 2024** conducted by **BCG**
- Only** team to qualify **Adobe GenAI Hackathon** from **IITK**

## POSITIONS OF RESPONSIBILITY

- Company Coordinator**, Students Placement Office, IITK
- Secretary**, Brain and Cognitive Science Club, IITK
- Student Guide**, Institute Counseling Service, IIT Kanpur

## RELEVANT COURSES

Embedded and Cyber Physical Systems*	Data Structures & Algorithms	Linear Algebra	Probability & Statistics*
Software Development & Operations	Ordinary Differential Equations*	Control Systems	Game Theory
Principles of Communication	Introduction to Machine Learning*	Communication Systems*	Data Mining
Data Science and Machine Intelligence*	Single Variable Calculus	Multivariable Calculus	Fundamentals of Computing*

## PROJECTS

### ChaloKart

Jan '25 - Apr '25

Course Project, Software Development and Operations

[Github]

- Developed a cross-platform mobile app using **Flutter** for **real-time booking** and tracking of campus golf carts.
- Integrated **Firestore Authentication** and **Role-Based Access Control (RBAC)** for secure multi-user access.
- Implemented **GPS-based Live Tracking** and **ETA Calculation** via **Google Maps SDK** for users and drivers.
- Enabled seamless **in-app digital payments** using **Razorpay API**, along with a **feedback and rating system**.
- Designed a **scalable and modular system** architecture with ride pooling, scheduling, and an admin analytics dashboard.

### Sentiment Analysis on Movie Reviews

Jan'25 - Apr'25

Course Project, Data Science and Machine Intelligence

[Github]

- Built a sentiment classification system using **Bidirectional LSTM** and **Word2Vec embeddings** to analyze **50k reviews**.
- Applied custom **NLP preprocessing** by using **tokenization**, **lemmatization**, and **padding** and converted the reviews text into **100-dimensional** semantic vectors.
- Designed a **deep learning** architecture with **masking**, **dropout layers**, and **ReLU-activated dense layers** to optimize the model learning process and prevent overfitting.
- Achieved **89.8% test accuracy** with a strong **F1-Score of 0.896**, outperforming traditional models like **SVM**, **Naive Bayes**, and approaching **BERT-level performance**.
- Implemented **early stopping** and **model checkpointing** with the **Adam optimizer** and **binary cross-entropy loss**.

### Smart Attendance Tracker

Jan'25 - Apr'25

Course Project (EE381), Electronics Lab

[Github]

- Developed a portable **biometric attendance system** using **ESP32** microprocessor and **fingerprint authentication**.
- Integrated real-time **cloud-based logging** by sending **JSON payloads** to **Google Sheets** via **Google Apps Script** and **HTTP POST requests**.
- Enabled smartphone-powered operation via **OTG**, removing the need for external power sources thereby increasing portability.

### Introduction to Quantitative Trading

Jan'23 - Feb'23

Finance & Analytics Club, IIT Kanpur

- Applied **Augmented Dickey-Fuller tests (ADF)** to analyze **stationarity and mean-reversion** properties of **equity time series price return data** across multiple tickers.
- Engineered and backtested a rule-based **quantitative trading strategy** incorporating **dynamic trailing stop-loss logic** for optimizing **entry and exit points** and risk-adjusted returns.

## EXTRA-CURRICULARS

- Won the **BRONZE medal** in Mens' Football in **Udghosh'24**, the Annual Sports Fest of IIT Kanpur.
- Centre Forward** of the **Institute Football team, IITK**, for **2 Inter-IIT Sports Meets, 2023 and 2024**
- Won **2 consecutive GOLD medals** in **INFERNO 23'** and **INFERNO 22'** in **Mens' Football**

\*: RECEIVED HIGHEST GRADE POINT