Shardul Kolekar | **210110063**
Metallurgical Engineering and Materials Science | **B.Tech.**
Indian Institute of Technology Bombay | **Gender: Male**
DOB: 03/07/2002

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	7.59

Pursuing **Minor Degree** in **Artificial Intelligence & Data Science** from **C-MInDS** Department, **IIT Bombay**

WORK EXPERIENCE

SPROUTSAI | AI Engineer Intern | *Received full-time offer from CEO* [JUN '25 – AUG '25]

- Built an audio-based cheating detection tool for online interviews using **cosine similarity** & audio-embeddings from **WavLM model**
- Engineered an efficient **FastAPI microservice**, containerized with **Docker**, and deployed on **Google Cloud GPU** for inferencing
- Implemented a scalable pipeline with **RabbitMQ** message broker for interview processing using **FFmpeg** & for ML inference
- Achieved **90%** reduction in **GPU** costs through cost-effective architecture and **80%** faster processing via **internal batching**

MAGYK.AI | Software Engineer Intern| *Received LoR from CTO* [MAY '24 – JUL '24]

- Engineered a Gen-AI driven video generation tool utilizing **OpenAI** & **Elevenlabs** API, cutting video production time by **90%**
- Developed robust pipeline in **TypeScript**, integrating APIs for audio, subtitle, and image generation to generate AI videos
- Applied **FFmpeg** for efficient video rendering, ensuring smooth integration of multimedia elements and high-quality output
- Deployed the solution as a **Discord bot**, enabling users to customize the settings and generate or remix videos interactively

KEY PROJECTS

RANKING ALGORITHM USING GRADIENT DESCENT | Course Project IE506 [MAY '25 – JUL '25]

Guide: Prof. P Balamurugan | Dept. of IEOR, IIT Bombay

- Researched & implemented **Microsoft's Ranknet** (2005 research paper), a **neural network**-based algorithm for ranking documents
- Achieved a **0.52 NDCG** score by optimizing with **L2 regularization**, varying architectures and fine-tuning hyperparameter
- Implemented **NDCGβ**-based **custom loss function** directly optimizing final ranking metric, improving **NDCG** score to **0.56**

AGENTIC PLACEMENT INSIGHTS PORTAL| Self Project [JUL '25 – AUG '25]

- Scraped **1000+** jobs from IITB's placement portal using **Selenium** & used **Gemini** to convert unstructured to structured data
- Built **LangChain**-based **agentic chatbot** enabling **Text-to-SQL** queries & **RAG-based** information retrieval on placement data
- Built an interactive **Streamlit** web interface, linked with **Supabase PostgreSQL**, and deployed backend microservice on **Render**
- Deployed the portal for IIT Bombay students, with **200+** students actively using the tool, demonstrating real-world impact

HYBRID CUSTOMER CHURN PREDICTION ALGORITHM | Course Project IE506 [JAN '24 – FEB '24]

Guide: Prof. P Balamurugan | Dept. of IEOR, IIT Bombay

- Performed detailed exploratory **data analysis** on the **Telecom-Customer-Churn** dataset to extract insights driving churn rate
- Implemented **Logit Leaf model**- a hybrid of **Decision tree** & **Logistic Regression**, resulting in AUC score of **0.79** and TDL of **2.8**
- Extended Logit Leaf by integrating **SVM** in place of **Logistic Regression** attaining AUC of **0.68** and TDL of **2.6** for churn classification

ALGORITHMIC TRADING| ITSP | Institute Technical Council [MAY '23 – JUL '23]

- Built an automated trading system with **Angel Broking Smart API**, enabling real-time data processing and trade execution
- Analyzed candlestick patterns, intraday and swing trading techniques using technical indicators like **Bollinger Bands** & **RSI**
- Backtested **trend-following** and **mean-reversion** trading strategies and implemented **hedging** techniques for risk management

POSITION OF RESPONSIBILITY

Junior ML Engineer | Rakshak, IIT Bombay [JAN '23 – JAN '24]

Rakshak is an IIT Bombay student technical team which aims to develop UAVs for search & rescue operations

- Fine-tuned **YOLOv8** model for aerial detection of cars, humans, and buildings using customized **DOTA** and **xView** datasets
- Applied **YOLOv8** and **Segment Anything Model** for letter and shape recognition with segmentation on **SUAS** aerial dataset
- Generated synthetic data with **OpenCV** techniques, achieving **Mean Average Precision** of **0.88** across **30** object categories

TECHNICAL SKILLS

Language & Framework	C++, Python, JavaScript, TypeScript, SQL, LangChain, FastAPI, PyTorch, TensorFlow, Streamlit
Tools & Technologies	MongoDB, PostgreSQL, RabbitMQ, Docker, Git, Github, GCP, GCS, Postman, FFmpeg, Render

EXTRA-CURRICULARS

Finance & Competitions	▪ Completed 2-month-long **Finlatics** Financial Market Analyst Program. Gained skills in fundamental analysis ▪ Secured **3rd** prize in **Strategy Wars** by Finance Club, competing in portfolio allocation with risk minimization ▪ One of the top teams in **Tower Research's** Data Science Challenge, earning an exclusive team session invite
Startup	▪ Worked in professor's lab for a semester on a **startup idea**, developing engineered wood from textile waste
Sports & Languages	▪ Represented Hostel-3 in **Crossy** General Championships and participated in **Cricket** & **Football** Hostel league ▪ Secured **2nd** place in FIFA Esports & part of **winning cricket team** at MEMS Sports Week by MMA council ▪ Rated **1200+** in rapid chess on **Chess.com** (Peak rating of **1509**) ▪ Learning **Japanese** for fun on **Duolingo**
Misc	▪ Participated in a team of 4 in a **2-month-long RC-plane** competition conducted by Aeromodelling club