KUMAR AMAN

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Education

Indian Institute of Technology, Roorkee   **Nov. 2021 – May 2025**
Bachelor of Technology in Mechanical and Industrial Engineering — CGPA: 8.56/10   *Roorkee, Uttarakhand*

Experience

Soul AI   **Jun 2024 – Aug 2024**
Data Science Intern
- Designed the **PDF2Chat** feature in AI Bot, enabling conversational interaction with GHG emission accounting files
- Integrated **Conversational Buffer Memory** to improve context retention and accuracy in handling follow-up queries
- Integrated **ChromaDB** with **jina-embeddings-v3**, significantly reducing latency and improving text retrieval efficiency
- Tested chatbot features in a successful pilot run to validate performance and usability across diverse accounting files

Carbon6   **Oct 2024 – Dec 2024**
Software Engineering Intern
- Collaborated in a **6-member** team to build a hybrid chat app with AI assistant & real-person escalation, enhancing UX
- Enabled real-time communication with WebSockets for low-latency user interactions and instant updates in conversations
- Improved WebSocket performance using **Redis Pub-Sub** and integrated Postgres for efficient chat message organization
- Built backend services for data persistence and retrieval using **PostgreSQL** & **Prisma** for scalable database operations
- Worked in a **Turborepo** build system, using **Next.js** & **Node.js** for conversational logic and shadcn components for UI

Projects

WeldRight Competition | IIT Bombay Techfest   **July 2024 - Aug 2024**
- Applied multi-stage classifier using decision tree and gradient boosting to predict welding defects with **0.92 F1 Score**
- Identified optimal ranges for the parameters such as job temperature, humidity, voltage, and current to minimize defects
- Built live **PowerBI Dashboard** to showcase welder team performance and defect proportions, enhancing quality control

Smart Hiring Assistant | Languify Hackathon   **Mar 2024 - Apr 2024**
- Developed an end-to-end interview prep App that interacts, asks CV-based questions and generates elaborate feedback
- Designed the backend of App using **FastAPI**, allowing a student to upload resumes and record answers as audio inputs
- Leveraged **LangChain** framework to build retrieval and conversation chains to interact, store, and update information

E-commerce Recommender System | Dats Science Group, IIT Roorkee   **Dec 2023 - Jan 2024**
- Developed **recommender system** using grocery retail database, recommending product catalog based on user activity
- Implemented **K-Means** Clustering based on Elbow Method for providing personalized recommendations to similar users
- Generated recommendations using **association rule learning** derived from **lift score** for product pairs in all 19 clusters
- Built an NLP product search engine using cosine similarity with lemmatized count vectors, achieving **0.82 F1 Score**

Credit Card Default Prediction | Society of Business, IIT Roorkee   **May 2023 - Jun 2024**
- Developed credit risk models using demographic, payment history, and billing data to predict customer default likelihood
- Improved model sensitivity and specificity on default rates by comprehensive **EDA** & **SMOTE** on 30K+ customer data
- Enhanced predictive accuracy to **87.1%** and AUC to **0.874** through meticulous hyperparameter tuning cross-validation

Technical Skills

Languages: Python, C, C++, JavaScript(ES6+), SQL, NoSQL, Latex
Developer Tools: VS Code, Jupyter Notebook, AWS, Docker,Tableau, Power BI
Technologies/Frameworks: Git/GitHub, Excel, FastAPI, Google Workspace, MS Office, RESTful APIs , Scikit-Learn, Pandas, NumPy, Matplotlib, Seaborn

Academic Achievements

Secured **AIR 4936** in JEE Advanced 2021 and achieved **99.49** percentile in JEE Mains 2021 among 1.2 million+ students
Secured **Gold Medal** in *InstaPrep-Smart Interview App* challenge conducted by **Languify** in **TechShilla 2.0** held at IITR
Secured **5th** Rank in *WeldRight Competition*, conducted by **Godrej & Boyce** at **TechFest 2022**, IIT Bombay