

MUSKAN ARA

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PROFESSIONAL SUMMARY

Aspiring Data Scientist with expertise in **Machine Learning, Deep Learning, Generative AI, and Agentic AI**. Published **two research papers at SocProS 2025, IIT Roorkee** focused on **cost-sensitive AI and medical AI applications**. Currently pursuing **M.Sc. in Data Science**, with a keen interest in building impactful AI-driven solutions.

EXPERIENCE

Machine Learning Intern, PW Skills

04/02/2025

- Actively contributing to the development of a Book Recommendation System Web App, focusing on Book similarity analysis & User rating prediction.
- Applying machine learning techniques (Python) to enhance recommendation accuracy and user engagement.
- Involved in product development and Proofs of Concept (PoCs) to evaluate the feasibility and effectiveness of different recommendation strategies.

PROJECTS

Smart OCR & Audio Processing App

Functionality: Real-time Text Extraction and Audio Transcription

Contributions:

- Engineered an application for real-time **text extraction and audio transcription**.
- Leveraged Tesseract **OCR, Whisper ASR, and Mistral AI** for core processing.
- Incorporated OpenAI's LLM for contextual understanding.
- Created an interactive user interface using **Streamlit**.
- Achieved **93%** OCR accuracy and improved transcription quality.
- Automated document processing workflows.

Automated Job Search & Resume Matching System

Functionality: AI-powered Job Search Automation and Candidate-Job Matching

Contributions:

- Conceived and built an AI-driven tool for automated job searching.
- Merged **SerpAPI** to fetch real-time job listings.
- Utilized **FAISS and ChromaDB** for job-resume matching, achieving a **32%** improvement in candidate-job alignment.
- Enabled AI-generated interview questions using **Llama 3.3**.
- Designed a **Gradio UI** for real-time job recommendations.

Autonomous AI Research & Writing System

Functionality: AI-powered Research Assistance and Content Generation

Contributions:

- Engineered an AI research assistant using **CrewAI** for multi-agent orchestration.

- Created AI agents for research synthesis, content structuring, and editorial refinement.
- Integrated GPT-4 for natural language generation, **Serper API** for real-time search, and **Wikipedia API** for factual enrichment.
- Crafted a streamlined workflow using **sequential and parallel processing**.
- Deployed an intuitive **Streamlit UI** for seamless user interaction.
- Enabled automated research and high-quality content generation.

TECHNICAL SKILLS

Programming Database Skills: Python, SQL, MongoDB

Core AI/ML Expertise: Machine Learning, Deep Learning, Generative AI, Agentic AI

Key Frameworks & Libraries:

- PyTorch, Scikit-learn, TensorFlow
- Hugging Face Transformers, OpenAI API, LangChain, LlamaIndex
- NLTK, Gensim, Pandas, NumPy, Matplotlib

Generative AI:

- LLMs, Diffusion Models, Prompt Engineering, RAG, Fine-Tuning, Content Optimization
- Vector Databases: FAISS, Pinecone, ChromaDB

MLOps & Deployment Awareness:

- Docker, FastAPI, Streamlit, Flask
- Git, DVC, Kubernetes, CI/CD

Cloud Platforms (Familiarity): AWS, GCP, Azure, Google Vertex AI, AWS Bedrock

EDUCATION

Master of Science in Data Science , Chandigarh University	<i>2023 - 2025</i>
Coursework: Machine Learning, Deep Learning, Generative AI, Data Analytics	
B.Tech Electronics and Communication , Magadh University	2017 - 2021

PUBLICATIONS

Reducing Operational Costs with Cost-Sensitive XGBoost-Based Failure Prediction
Accepted at **SocProS 2025, IIT Roorkee**

AI-Driven Pneumonia Diagnosis Using Custom CNNs
Accepted at **SocProS 2025, IIT Roorkee**