

BIBHANSHU RAJ

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Work Experience

SmartLink Holdings

Machine Learning Engineer Intern

May 2024 – July 2024

Goa, India

- Developed a data-driven warehouse inventory system using **Python** and **PostgreSQL**, automating inventory tracking and reducing parts logging time by **40%** compared to the manual processes.
- Implemented and validated a computer vision pipeline using **OpenCV** and deep learning techniques on live camera feeds, improving defect detection accuracy and enhancing automated quality assurance workflows.

Technical Skills

Programming Languages: Python, C/C++, SQL

ML Frameworks & Libraries: Supervised and Unsupervised Learning, LangChain, Tensorflow, Langchain, OpenAI API, Retrieval-Augmented Generation(RAG), RAGAS, NeMo Guardrails, Transformers

Data & MLOps: PostgreSQL, Docker Git, GitHub, Flask, Jupyter, GitHub

Projects

AI-Powered Evaluation Bot

Python | OpenAI API

- Attained **95% grading accuracy** across **200+** student submissions by engineering an AI evaluation bot using Python and the OpenAI API to assess code logic, syntax, and efficiency.
- Automated over **85%** of evaluation steps, reducing manual grading time by **60%** during the coding mid-semester exam test setup.
- Created an intelligent feedback tool in Python that analyzed student submissions, highlighted logical errors, and provided tailored improvement tips—accelerating learning and reducing manual review time.

Multi-Document RAG Chatbot with Claim Validation

LangChain | GPT-3.5 | Python

- Engineered a retrieval-augmented generation (RAG) chatbot using **LangChain** and **GPT-3.5**, enabling contextual Q&A over **500+ academic documents** with **95% accuracy** in source-grounded answers.
- Enabled dynamic, multi-turn conversations with a claim validation engine that retrieves, verifies, and synthesizes information across documents, improving conversation flow and user satisfaction by an estimated **40%**.
- Designed and implemented logic for handling diverse queries, restructuring **80%** of indirect queries into actionable ones and maintaining user trust with reliable fallback responses.

LLM Powered Student Learning Agent

Python | Langchain

- Engineered an AI-driven chatbot with **Python**, **Langchain** and **RAG** architecture to provide users with precise, context-aware answers sourced directly from research papers, improving information retrieval and understanding.
- Implemented **NVIDIA NeMo Guardrails** for strict topic compliance and applied custom **RAGAS** metrics to evaluate factual accuracy, relevance, and explanatory depth of AI-generated answers.

Education

BITS Pilani

Bachelor of Computer Science and Information Technology

Expected Graduation: May 2026

Pilani, India

- Relevant Courses: Artificial Intelligence, Operating Systems, Foundation of Data Science, Computer Architecture, Data Structures and Algorithms, Database Systems