

RAJARSHI ROY

Barrackpore, India

+91 8420999023 royrajarshi0123@gmail.com [Linkedin/rajarshi-roy-learner](#) [github.com/Rajarshi12321](#)
[rajarshi12321.github.io/rajarshi_portfolio/](#)

Education

Kalyani Government Engineering College

B.Tech in Computer Science and Engineering

Aug. 2021 – Jul. 2025 (Expected)

8.9 CGPA (up to 5th semester)

Personal Projects

Game Recommender App **Video Explanation**

May. 2024

- Engineered a scalable game recommendation system powered by **Google Gemini**, recommending about **180 games** to users.
- Features included seamless scalability, **natural language query handling**, user-friendly chatbot interface using **Streamlit**, and continuous improvement through **user feedback integration**.
- Implemented **logging** and **monitoring** with **Langsmith**, helping in monitoring and optimizing code logic to reduce prompt token from **11,000 to 6,000**.
- Deployed using **GitHub Actions** for **CI/CD**, **AWS ECR** for **Docker** container registry, **AWS EC2** for hosting, and **Terraform** for infrastructure as code.

Langchain_QA

Mar. 2024 – Apr. 2024

- Optimized question answering by integrating the **RAG model** with **Langchain's** document division and **Gemini's vector embeddings**, **FAISS** enhanced query efficiency by swiftly storing and retrieving similar vectors. **Chainlit** developed for the user interface.
- Leveraged **Gemini** as the base LLM to empower RAG, while **Langchain's prompt** templates ensured precise responses.
- GitHub Actions** automated **CI/CD**, **Docker** enabled consistent containerization, and **AWS** provided scalable deployment infrastructure.

AI research assistant **Video Explanation**

Mar. 2024

- Developed an AI Research Assistant repository utilizing Gen AI and RAG model, powered by **Google Gemini**.
- Facilitated question answering about research papers by enabling uploads through **Streamlit**, cleaning, and indexing documents with **Llama-Index** using **Gemini Embedding Model**.

My Sweet Home **Video Explanation**

Jul 2023 – Nov 2023

- Predicted** house prices and **recommended** similar housing properties using content-based filtering.
- House Price Prediction:** Achieved **90%** accuracy for properties for **sale** and **70%** accuracy for **rental** properties.
- Property Recommendation:** Generated a list of **6 most similar properties** matching given criteria and displayed the **average percentage of cosine-similarity** for those properties.

Technical Stack

- Python Packages and Frameworks:** Scikit-Learn, TensorFlow, Keras, NumPy, Pandas.
- Web Development:** HTML, CSS, Flask, Django, JavaScript, Chainlit, Streamlit.
- Programming Languages:** Python, JavaScript, SQL, NoSQL, HTML, CSS.
- Databases:** MySQL, MongoDB, PostgreSQL, Pinecone, FAISS.
- MLOps Tools:** DVC, MLflow, CI/CD, GitHub Actions.
- Cloud Deployment and Containers:** AWS ECR, AWS EC2, Vercel, Git, Docker.
- Gen AI Framework and Models:** LlamaIndex, Langchain, Langsmith, Google Gemini.

Achievements

Winner of Smart India Hackathon 2022

Aug 2022

Certifications

Machine Learning Specialization Course

Mar. 2023

Deep Learning Specialization Course

Mar. 2023

Mathematics for Machine Learning

Mar. 2023