RAJARSHI ROY

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🌐 rajarshi12321.github.io/rajarshi_portfolio/ ↗

Education

Kalyani Government Engineering College   **Aug. 2021 – Jul. 2025 (Expected)**
B.Tech in Computer Science and Engineering   *8.9 CGPA (up to 5th semester)*

Experience

Artificial Intelligence Institute of South Carolina   **May 2024 - Present**
AI Research Intern   *Kolkata, India (Remote)*
- Under Mentorship of Prof. (Dr.) Amitava Das.
- Working and testing capabilities of Large Language Models their ability to retain proper context alignment while generating response.
- Appointed as **Defactify-4.0** Workshop **Web Chair** at **AAAI'25**, helping organize the shared tasks in **Codalab** and guiding participants.

Personal Projects

Game Recommender App ↗ **Video Explaination** ↗   **May. 2024**
- Engineered a scalable game recommendation system powered by Generative AI model, **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.

My Sweet Home ↗ **Video Explaination** ↗   **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 by the use of simple machine learning concept, **average percentage of cosine-similarity** for those properties.

Technical Stack

- **Python Packages and Frameworks**: Scikit-Learn, TensorFlow, Keras, NumPy, Pandas, PyTorch, FastAPI, OpenCV, Matplotlib, Seaborn, XGBoost, LightGBM, Statsmodels, Plotly, BeautifulSoup, Scrapy.
- **Web Development**: HTML, CSS, Flask, Django, JavaScript, Chainlit, Streamlit, REST APIs.
- **Programming Languages**: Python, JavaScript, SQL, HTML, CSS, R, Bash/Shell.
- **Databases**: MySQL, MongoDB, PostgreSQL, Pinecone, FAISS, SQLite.
- **MLOps Tools**: DVC, MLflow, CI/CD, GitHub Actions, Docker Compose, SageMaker.
- **Cloud Deployment and Containers**: AWS ECR, AWS EC2, Vercel, Git, Docker, Terraform.
- **Gen AI Framework and Models**: LlamaIndex, Langchain, Langsmith, Google Gemini, Hugging Face.

Positions of Responsibility

Web Chair of Defactify-4.0 at AAAI'25 ↗   **Nov 2022 - Present**
- Appointed as **Defactify-4.0** Workshop **Web Chair** at **AAAI'25**, responsible for organizing and managing shared tasks on **Codalab**, ensuring smooth workflow and accessibility. Provided guidance and support to participants throughout the competition.

Achievements

Winner of Smart India Hackathon 2022 ↗   **Aug 2022**
- We, the team BRAINCELLS had the opportunity to participate in the **grand finale** of **Smart India Hackathon 2022** and after working for 36 hours straight with our team members and mentors, we were able to make a desirable solution for the problem statement: "Suggest an innovative approach to serve the educational needs of the weaker section of the society during this challenging situation of COVID-19". We presented our solution in the form of apps and website.