# AYUSH RUPAPARA

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## EDUCATION

| Year | Degree/Examination | Institute | CGPA/ % |
|------|--------------------|-----------|---------|
| 2021- 2025 | BTech Mathematics & Data Science | Maulana Azad National Institute of Technology (NIT-Bhopal) | 8.19 |
| 2020 | HSC (class XII) | The Imperial Science School | 81.57% |
| 2018 | SSC (class X) | The Imperial Science School | 94.67% |

## PROJECTS

**Image Caption Generator** [ TensorFlow, CNN, LSTM, Streamlit ]

- Created an Encoder-Decoder model that generates one-line descriptive captions for images by merging features from a pre-trained VGG16 model and sequence features from an LSTM network.
- Fine-tuned hyperparameters and utilized transfer learning, achieving a BLEU-1 score of 0.536.
- Built and deployed a user-friendly web application using Streamlit for real-time caption generation.

**Reliable RAG-Based Q&A System** [ RAG, Langchain, Vector Database, LLM ]

- Developed reliable RAG-based question-answering agent using LangGraph, LLaMA 3, and Chroma.
- Implemented various techniques for dynamic routing, fallback management, and hallucination detection.
- Integrated Tavily search API for Web search, FastEmbed for embedding, and stateful cyclic workflow and conditional edges to optimize decision-making in answer generation.

**Customer Churn Prediction** [ CatBoost, XgBoost, Docker, FastAPI ]

- Build a machine learning pipeline to predict customer churn with precision of 0.83 and manage categorical features.
- Used SHAP for interpretability, transparent prediction and addressing unbalanced data with stratified splitting.
- Built a Streamlit interface, integrated FastAPI for deployment, and automated setup with Docker for consistency.

## SKILLS

| | |
|---|---|
| **Programming Language** | Python, C, C++, R, SQL, HTML, CSS |
| **Frameworks/Tools** | TensorFlow, Scikit-Learn, Tableau, Pytorch, Github, Keras, Pandas, Numpy, Langchain |
| **Technical Proficiencies** | Data Structure & Algorithm, DBMS, Machine Learning, Object Oriented Programming, Neural Network, Operating System, Data Analysis |

## ACCOMPLISHMENT

- **Expert** at Kaggle platform and a Student Ambassador at Streamlit.
- Achieved **Rank 66** out of 75,000+ participants in the Amazon ML Challenge where we developed entity extractor from eCommerce images.
- Secured **Rank 10** in SSC Gujarat Board Exam out of 11+ Lakh students & AIR **13907** in JEE mains Exam.
- Solved **450+** Data Structure and Algorithms Problems on Leetcode, CodeForces, and other Platforms.

## EXPERIENCE

**Amazon Summer School** | Machine Learning Apprenticeship { July 2024 }                                      Remote

- Gained mentorship and guidance regarding machine learning-related concepts, deep neural networks, supervised & unsupervised learning, sequential learning, and LLMs through 16 interactive sessions.

## POSITION OF RESPONSIBILITY

**Member** of Programming Club Zenith { April 2022- present }