





ANIMESH BASAK

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 GitHub  Leetcode  Gfg

Education

National Institute of Technology Arunachal Pradesh

Bachelor of Technology in Computer Science, CGPA: 8.07/10 (as of Dec 2024)

October 2021 – Present

Itanagar, Arunachal Pradesh

Kendriya Vidyalaya No.2 Itanagar

Senior Secondary Education, Percentage: 91.8% (National Top 10%, School Rank 1)

August 2018 – May 2020

Itanagar, Arunachal Pradesh

Key Courses Taken

- Generative AI
- Large Language Models
- Natural Language Processing
- Deep Learning
- Reinforcement Learning

Experience

IIT Roorkee

Google Research RL Intern

January 2024 – June 2024

Roorkee, Uttarakhand

- Developed a **deep reinforcement learning (RL)** model to enabling a car to autonomously perform **lane-changing maneuvers** in the Carla simulation platform. Trained the model over **5000+ simulation steps**, achieving a lane-changing success rate of **85%+** and reducing maneuver completion time by **15-20%** compared to baseline models.
- Enhanced the RL framework by upgrading the model from DDPG (Deep Deterministic Policy Gradient) to **TD3 (Twin Delayed Deep Deterministic Policy Gradient)**. This boosted training stability by **25%**, increased reward scores by **10%**, and reduced training time by **15%**. **Certificate Link**

Indian Oil Corporation Limited

Machine Learning Intern

January 2024 – February 2024

Digboi, Assam

- Designed a real-time **sign language recognition system** using Python and **LSTM-based deep learning models** achieving **99%** accuracy. Source Code: **GitHub**.
- Optimized continuous webcam video feeds with a MediaPipe model for key point extraction, achieving a **25% increase in processing speed** compared to TensorFlow-based methods. **View Certificate**.

IIT Guwahati

Machine Learning Intern

December 2023 – January 2024

Guwahati, Assam

- Implemented structured analysis protocols for the *Conformance Constraint Discovery* project, **enhancing detection** of data non-conformance by **40%**, which elevated the model trust quantification accuracy. Source Code and Report: **GitHub**
- Synthesized low-variance projections to develop robust conformance constraints, achieving a **30% reduction** in false positives for unsafe tuple identification. **View Certificate**.

Projects

Enhanced Q&A Chatbot with OpenAI | LLM, OpenAI | Github: **GitHub Repo**

October 2024

- Developed a **real-time Q&A chatbot** using **Streamlit**, **OpenAI**, and **Langchain**, achieving an average response latency of **1.28s (P50)** and a maximum observed latency of **6.18s (P99)** for processing user queries.
- Enhanced user experience with a **customizable interface**, allowing parameter adjustments such as **temperature**, **model selection**, and **max tokens**, resulting in **25% improved user satisfaction** based on interaction feedback.
- Optimized **Langchain** for **prompt engineering** and **output parsing**, reducing API call errors to **0%** and improving token efficiency, handling **553 total tokens** per interaction at a median of **149 tokens**.

RAG Q&A Conversation With PDF | RAG, HuggingFace | Github: **GitHub Repo**

November 2023

- Designed a **Conversational RAG (Retrieval-Augmented Generation)** system enabling users to **upload PDFs** and interact with the content via **real-time Q&A**, achieving an average response time of **4.72 ms** and reducing document query latency by **15%**.
- Developed an **interactive web interface** using **Streamlit**, allowing users to upload **multiple PDF documents**, input questions, and receive **context-aware answers** with **chat history support**, improving user engagement by **30%** based on usage metrics.
- Implemented a **robust document processing pipeline** using **PyPDFLoader**, **RecursiveCharacterTextSplitter**, and **Chroma**, enhancing document embedding storage efficiency and increasing query response accuracy by **20%**.

Skills

Languages: Python, Java, Kotlin, C, HTML/CSS, JavaScript, SQL

Technologies: Tensorflow, PyTorch, Scikit-learn

Framework: Flask, AWS

Extracurricular Activities

Medium

March 2022 – Present

Freelance Writer

Freelance

- Authored over **20+** **engaging articles** on **software development**, **machine learning**, and **poetry** that explore themes of **human connection and emotion**, fostering **reader engagement** across diverse topics. **Read Articles Here.**

Other

- Ranked **first** in **AISSCE (Class 12)** at **Kendriya Vidyalaya No. 2**.
- Solved **500+** **programming problems** on platforms like **LeetCode** and **GeeksforGeeks**.
- Achieved a **1700 contest rating** on **LeetCode**.
- Received a **Certificate of Volunteer Work** for actively promoting awareness, fundraising, and crafting compelling content for **Hamari Pahchan NGO** (2023).