MRINAL BHAN

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Education

International Institute of Information Technology, Raipur   **8.55/10**
B.Tech in Data Science and Artificial Intelligence   *Dec. 2021 – May 2025*

Delhi Public School, Jammu   **90.2%**
CBSE Class XII   *June. 2020 – July 2021*

Experience

Eaglytics Co.   ***Dubai, UAE***
AI Developer Intern   *May 2023 – Sept. 2023*
- Directed the seamless incorporation of ETL pipelines with AI models **PaLM 2, Claude V1** on Google Cloud's BigQuery platform, boosting data insights by 50% via advanced NLP and data engineering solutions
- Developed a **GPT-4 & Claude API** powered chat-bot that streamlines data access (40% increase) and integration (70% boost), enabling autonomous data interpretation within Slack.

  Skills: LLMs, LangChain, Data Engg.(Fast API, Selenium, SQL, Apache Airflow), Google Cloud Console

Projects

LLMs See Further: Computing Approaches to Extend Context Window in LLMs | *LLMs, NLP*
- Aim to push the boundaries of LLM's capabilities by enabling them to handle tasks requiring broader context due to their limited context window size **(2k-16k tokens)**
- Comparing and Implementing different approaches **(HMT, FLASHBACK, Grouped Attention etc.))** to extend the context window in LLMs, enabling them to better capture long-range dependencies

Neural Style Transfer - Using Deep Learning to Generate Real-Time Art | *PyTorch, OpenCV*
- Implemented **MSG-Net, AdaIN** for live video streams, achieving a processing speed of 20-25 milliseconds for resolutions up to 1920x1080 at 10 FPS to enable dynamic artistic transforms and adaptive style transfer.
- Delivered exceptional style-transfer accuracy to **90.44%** outperforming VGG19 **(85%)**, VGG16 **(78%)**, supported by low content preservation *(MSE)* values **(0.001-0.005)** & high perceptual similarity *(PSNR)* scores **(40-45 dB)**

Neural LOLgorithm - Deep Learning for Multi-Modal Comedy Data | *PyTorch, NLP, API Dev.*
- Proposed a humor quotient score to **annotate humor** on a 10-point scale using a formula derived from the pitch & intensity measures of cumulative laughter employing Deep Learning & Feature Engineering techniques
- Curated a dataset of video features from OTT streaming platforms using **OpenPose, OpenFace, and OpenSmile**
- Optimized performance by caching responses, minimizing API calls for repetitive queries, achieving Quadratic Weighted Kappa (QWK) scores **(0.691-0.813)**

ETL Pipeline Using Airflow & Reddit API | *Python, AWS, Apache Airflow*
- Developed a custom ETL pipeline using Airflow and Reddit API to transform raw data and perform analysis.
- Configured AWS EC2 instance to Airflow, and created a DAG with a task to schedule the ETL script to run.
- Extracted data from Reddit API, transformed it, and loaded it into an AWS S3 bucket.

Skills

Languages: Python, C/C++, PostgreSQL, HTML/CSS, GraphQL, R
Frameworks/Libraries: Keras, Tensorflow, Transformers, OpenCV, PyTorch, Django, Hadoop, Apache Spark/Airflow
Developer Tools: Linux, Git/GitHub, Visual Studio, Microsoft Azure, Google Cloud, Hugging Face, Power-BI, AWS
Soft Skills: Articulate, Strategic Resolutions, Analytical Thinker, Great Communication & Collaborative skills
Areas of Interest: Data Analytics, ML - Ops, AI & Back-End Development

Achievements

- Solved over **300+** DSA problems across LeetCode, GFG, HackerRank
- **Microsoft Certified**: Azure AI Engineer Associate
- **Certifications**: Coursera (*Machine Learning Specialisation & Google Analytics*), Great Learning (*Data Pre-Processing*), The Construct (*ROS*), NPTEL (*Natural Language Processing*)
- **Captain**: Basketball Team, **Core Member**: AI/ML Club, **Core Member**: Capriccio - Music Society