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***
Data Science & AI 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

Real-Time Style Transfer - Using Deep Learning to Generate 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 **(80-85%)**, VGG16 **(75-80%)**, 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
- Extracted and curated a dataset of video features from streaming platforms like Netflix and YouTube using **OpenPose, OpenFace, and OpenSmile**; enhanced machine learning models and boosted recommendation accuracy by 30%
- Utilized **Bi-LSTM** layers for multi-modal processing (textual embeddings, audio features, and video keypoints), 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, AWS
Developer Tools: Linux, Git/GitHub, Visual Studio, Microsoft Azure, Google Cloud, Hugging Face, Power-BI, Dash
Soft Skills: Articulate, Strategic Resolutions, Analytical Thinker, Great Communication & Collaborative skills
Areas of Interest: Data Analytics, ML - Ops, AI & Back-End Development

Achievements

- **Microsoft Certified**: Azure AI Engineer Associate
- **Certifications**: Coursera (*Machine Learning Specialisation & Google Analytics*), Great Learning (*Data Pre-Processing*), The Construct (*ROS*)