Aviral Tripathi

Roll No.:M22MA012
MTech
Data and Computational Science
Indian Institute of Technology, Jodhpur

+91-8299275325
vrltrph@gmail.com
m22ma012@iitj.ac.in
Github | AviralTripathim22ma012
Linkedin | aviral-tripathi-215ab61bb

Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
M.Tech. (DCS)	Indian Institute of Technology, Jodhpur (IIT J)	7.19 (Current)	2022-Present
B.Tech. (EE)	National Institute of Technology, Hamirpur (NIT H)	8.56	2018-2022
12th	Central Board of Secondary Education (CBSE)	82.50%	2016-2017
10th	Central Board of Secondary Education (CBSE)	10 CGPA	2014-2015

THESIS WORK

- **LDP-Net** *Feb. 2023 - present*
  Supervisor: Dr. Pratik Mazumder Dept. of CSE, IIT Jodhpur
  – Thesis project on Few-Shot Learning utilizing LDP-Net, advancing AI capabilities in limited data scenarios. Enhanced problem-solving skills.

Projects

- **Emotion Recognition from Speech Using CNN and Transformers** *Feb. 2023 - May. 2023*
  Deep Learning course project Github
  – Analyzing vocal cues to detect and classify emotions, aiding human- computer interaction
  – Utilised Convolutional Neural Networks (CNN) for feature extraction from spectrograms, and transformers for sequence modelling
  – Achieved an 80% accuracy rate on a dataset of 8,000 audio samples, outperforming traditional methods by 5%
- **Semantic Segmentation using U-NET** *Sep. 2022 - Nov. 2022*
  Computer Vision course project Github
  – Semantic segmentation: Dividing an image into meaningful regions for object recognition, detection, and analysis.
  – Dataset used: DUTS dataset, a benchmark for image segmentation.
  – Architecture: U-Net, a convolutional neural network architecture designed for semantic segmentation.
- **Image Captioning** *Feb. 2023 - May. 2023*
  Computer Vision course project Github
  – Image captioning is an AI technique that generates descriptive text to explain the content of an image.
  – Dataset: Flicker8k, a widely used image dataset containing 8,000 images with diverse scenes.
  – Used ResNet and LSTM architecture for enhancing contextual understanding.
- **Trained a GAN to generate MNIST images** *Mar. 2023 - April. 2023*
  Deep learning course assignment Github
  – GAN: Generative Adversarial Network, a deep learning model for realistic data generation.
  – GAN approach: Generator and discriminator compete, improving generative model's realism through adversarial training.
  – MNIST dataset: A collection of 28x28 grayscale handwritten digit images.

Key Courses Taken

- Machine Learning, Deep Learning, Computer Vision, Artificial Intelligence, Linear algebra for data science, Statistics for Data Science, Financial Engineering, Optimisation for Data Science, Ethical Issues with AI

Technical Skills

- **Programming Skills:** Python, C++
- **Tools & OS:** GitHub, Google Colab, Linux CMD, High Performance Computers (HPC) DGX-2, Kubernetes, Chat GPT
- **Libraries/Frameworks:** Pandas, Numpy, scikit-learn, OpenCV, PyTorch, Matplotlib, Seaborn
- **Web Skills:** Docker and Containerization, AWS, GCP, Node.JS

Achievements

- **GATE RANK** Secured a rank of 3375, in GATE (EE), 2021, canducted by IIT Bombay *2021*
- **GAP YEAR** 2017-2018 for the preparation of JEE exams *2017-2018*

Certifications

- Udemy certification on Prompt Engineering for Chat GPT