Ankush Verma

Bachelor of Technology
in Chemical Engineering
Indian Institute Of Technology, Delhi

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Education

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Technology, Delhi	7.204	2020-2024
Senior Secondary	Sardar Patel Hindu Inter College(State Board)	78.8%	2019
Secondary	B.S. Public School(CBSE Board)	10	2017

Internships

Valetude Primus Healthcare(VPH)(ML Engineer Intern - New Delhi) (May 2023 - July 2023)

–Developed and Implemented Python code on **RPi 4** for autofocus, autoscanning, and precise microscope control
–Utilized the RPi 4, computational capabilities & GPIO interface to establish communication with Arduino microcontroller
–Implemented **YOLO** and **detectron** for image classifcation and object detection in cervical cells and blood cells

Agprop(Data Analyst Intern - Remote) (May 2022 - July 2022)

–Successfully extracted and integrated user information from the **GitHub API**, storing the data in Excel for future analysis
–Designed efficient **ERD** for large dataset, demonstrating expertise in database design and entity relationships
–Developed a code for location analysis using maps, enabling insightful visualization and data-driven decision-making
–Received **Letter of Recommendation** from the Head of Business Operations for impeccable performance and dedication

Projects

Physiological Device Design(Prof. Tapan K. Gandhi) (April 2023 - May 2023)

–Designed a physiological sensor system using **PPG, ECG, GSR, Resp and Temp sensor** for stress measurement
–Developed a user-friendly GUI using **Tkinter and Matplotlib** to visualize real-time data of sensors obtained via Arduino
–Applied machine learning algorithms including **Linear Discriminant Analysis (LDA), Neural Network (NN), and Decision Tree (DT)** to the acquired sensor data, enabling stress measurement capabilities and providing valuable insights

Image Segmentation(Prof. Manoj Kumar Ramteke) (July 2023 - August 2023)

–Developed a **U-Net** model designed for accurately segmenting heart images, enabling precise detection of cardiac structures
–Utilized **Flask** to deploy the U-Net model, enabling smooth web-based access for utilizing cardiac image segmentation tool

Characterizing the Entities in Harmful Memes(Prof.Tanmoy Chakraborty) (Jan, 2022 - Feb, 2022)

–Cleaned and enriched data through preprocessing and augmentation, improve modelgeneralizability for multi-class classification
–Leveraged Hugging Face Transformers and built **BERT neural network** with feature engineering for entity categorization.
–Optimized training with **cross-entropy loss** and **Adam optimizer**, tracked performance with **macro/micro F1 scores**

Image Generation(Prof. Monika Aggarwal) (Oct 2023 - Dec 2023)

–Explored novel image generation techniques on CIFAR-10 dataset using Super-Resolution **VAEs** and **Prescribed GANs**
–Achieved improved quality of generated images with reduced blurriness and mode collapse compared to standard approaches

Credit Card Fraud Detection (Independent)) (Jan 2023 - Feb 2023)

–Implemented ML algorithms, including **Random Forest and Decision Tree classifiers** to detect fraudulent transactions
–Utilized data preprocessing technique like **SMOTE** to improve ML model performance for accurate fraud detection
–Implemented an **Artifcial Neural Network(accuracy =92%)** model, with a multilayer architecture for better prediction

Time Series Forecasting(Independent) (Aug 2023 - Oct 2023)

–Implemented **MLP, LSTM, and LSTM autoencoder** for the Time series forecasting of a large dataset
–Encoded time-series of size 12 to single value and used it on MLP deep learning model and compared the models

Technical Skills

- **Programming Languages**: C++, Python, HTML, CSS, SQL, Flask **Software:** Autodesk, Git, Arduino, Jupyter
- **Framework**: Pandas, Numpy, Matplotlib, Scikitlearn, Tensorfow, Beautiful Soup, MLflow, Docker, azure and PowerBI

Key courses taken

- **CSE & Maths**: Digital Image processing, Introduction of Computer Science, Calculus, Linear Algebra and Diff. Equation,Cloud Computing

Extra Curricular Activities

- **Board for Hostel Management:**, Elected as a member House working Committee among **400**+ hostel residents
- **Materials Science Society:**,Participated in **Padarth competition** held by the Materials Science society
- **Board for Sports Activities:**,Active member of Cricket for **3+years** represented hostel at institute level across leagues