Faiza Kashish

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Education

Indian Institute of Technology, Kharagpur **Dec. 2020 – May 2024**
*B.tech in **Electrical Engineering*** *CGPA:- 7.17*

Vidya Bharati Chinmaya Vidyalaya **May 2018 – May 2020**
AISSCE *Percentage:- 93.2*

Valley View School **May 2008 – May 2018**
AISSE *Percentage:- 95.8*

Experience

Granules India **May 2024 – July 2024**
Data Intern *Hyderabad, India*

- Trained a **GPT-3.5** based classifier with the objective of detecting the intent behind a query from a list of custom intents
- Created an **advanced RAG** based chatbot with **dynamic context tracking** and updation throughout the conversation
- Created a **knowledge graph** of triplets arising from product names and product descriptions to store product data using **GPT-4**
- Utilized the graph to make a multiple choice product quiz functionality using **fuzzy matching** based novel search algorithm

Mind Harmonics **September 2023 – December 2023**
ML Research Intern *Remote, India*

- Implemented **OpenMax**, **ODIN**, **KL Matching** and **Energy-based** methods for unsupervised OOD detection during inference
- Implemented **B-Cos**, **CAPTUM** interpretability algorithms that use **Integrated Gradients**, **GradientShap**, **Occlusion**
- Created a pipeline which allows the functionality to switch between models, with tuned config files and parameters for each of them

Indian Institute of Technology **May'23 – July'23**
Research Intern *Kharagpur, India*

- Preprocessed cerebral MRA images by normalizing intensity, appropriate cropping, padding, applying patch extraction on the data.
- Trained **nnU-net** in 4 configurations, 3D low resolution, 3D full resolution, 2D, 3D cascade full resolution with 5-fold validation.
- Performed postprocessing on predictions by applying masking, **connected component analysis**, **morphological operations**

Edudigm **February'23 - May'23**
Data Science Intern *Kolkata, India*

- Used **Facebook Duckling** and **GPT-3 Promptify** to extract custom entities and intents from a conversation dataset
- Prepared a response engine with backbone as GPT-3 which did booking for a usecase after extracting all the necessary entities
- Developed a system for storing and processing PDF files and then creation of vector and keyword-based indexes using **Llamaindex**
- Implemented **query engines** utilizing indexes to identify references,leveraging GPT-3 for generating relevant responses

Foxmula **October'22 - December'22**
Data Science Intern *Remote, India*

- Built 3d **SfM model** from images by identifying covisible images with **NetVLAD**, matched features with **SuperGlue**
- Extracted features from a given query image using **SuperPoint**, matched features in the database images with **SuperGlue**
- Pose estimation was carried out on the query image(2d) with 3d points using **Perspective-n-Point(PnP)** algorithm

Fullscore Private Limited **March'22 - June'22**
ML Intern *Delhi, India*

- Developed, trained an instance segmentation model using **YOLOv8** on dataset of OPG, RVG images, to detect abnormalities
- Created **AWS endpoints** to deploy trained models, enabling seamless integration, providing a solution for dental analysis
- Devised a RGT by assigning operators to matching points, concatenating strings, computing hashed values for recurring patterns
- Utilized the feature importance method in sklearn to shortlist features which should be taken before running the RGT algorithm

LucidViz **December'21 - March'22**
Python Development Intern *Bangalore, India*

- Compared models for tumor detection in **Image Segmentation** & **Volumetric Landmark Detection**, visualizing on Slicer3D
- Implemented Python scripts using **SimpleITK** to preprocess CT images and generated config files for training purposes
- Designed and implemented data pipelines to ensure smooth data flow between models, with cropping, and thresholding steps

Skills

- **Languages**-C,C++,Python,JavaScript,R,HTML,CSS
- **Analytics**-MySQL,MS Excel, Mixpanel, Amplitude, Tableau, Metabase, PowerBI
- **Libraries**-Numpy, Pandas, Matplotlib, Seaborn, Plotly, Pytorch, Pyspark, Tensorflow, Keras, Scikit-Learn, NLTK
- **Softwares**-Figma, Notion, Confluence, JIRA, Trello, Adobe Illustrator

Projects

NER Identification Model **Self Project**
IIT Kharagpur *UG*

- Developed **NER model** for predicting complex named entities in 11 different languages.
- Trained **multilingual** and **monolingual** tracks separately for all 11 languages.
- Employed **BertForTokenClassification** included in the Transformers library by **HuggingFace**.
- Achieved an accuracy of 83.7% in the training set and 85.6% in the validation datasets for monolingual NER and achieved an accuracy of 81.4% in the training set and 83.6% in the validation datasets for multilingual NER.

Cyclone Prediction **Self Project**
IIT Kharagpur *UG*

- Engineered a cyclone prediction model using **neural networks**, demonstrating proficiency in designing complex deep learning architectures.
- Implemented **backtracking** techniques to enhance the accuracy and robustness of the cyclone prediction system,showcasing problem-solving skills in dynamic environments
- **Leveraged** real-time data streams for cyclone prediction, illustrating the ability to make informed decisions through data analysis and machine learning techniques.

Application of ADAM-based Deep Neural Network (ADNN) in Prediction of Occupational Incidents **Project**
IIT Kharagpur *UG*

- **Adaptive Moment Estimation (ADAM)** along with **Root Mean Square Propagation (RMSProp)**, and **Stochastic Gradient Descent (SGD)** was used for optimizing the parameters of DNN to predict the outcomes.
- Research Paper authored and submitted to **Neuro-computing**.

Optimization based Decision Tree Algorithm for predicting Slip-Trip-Fall accidents at work **Project**
IIT Kharagpur *UG*

- Accidents data along with unstructured text data were analysed to predict Slip-Trip-Fall accidents using **Latent Dirichlet Allocation (LDA)** for text analysis, GA and PSO optimized **Random Forest (RF)**, **Classification and Reression Trees (CART)** and C5.0.

Application of Optimized Machine Learning Techniques for Prediction of Occupational Accidents **Project**
IIT Kharagpur *UG*

- Both categorical data and unstructured text data were analysed to predict the incident outcomes using **Genetic Algorithm (GA)** and **Particle Swarm Optimization (PSO)** optimized **Support Vector Machines (SVM)** and **Artificial Neural Network (ANN)**.

Awards & Achievements

- Secured an **All India Rank of 8498** out of approximately 2.5 lakh (250,000) participants in the JEE Advanced 2020
- Secured an **All India Rank of 8467** out of approximately 9.34 lakh (934,000) participants in the JEE Mains (2020) examination.
- Attained the **third** position in National Creativity Olympiad in 2019 among 200 team
- Ranked **top 132 out of 56000+ participants** in **Accenture's** Coding Challenge, showcasing exceptional algorithmic, and coding skills

Leadership / Extracurricular

- Selected as a member of **Pravah**-Hindi Technology Dramatics Society of IIT Kharagpur in 2020
- Performed in the online Freshers Production and the Annual Production in the year 2021
- Actively participated in grooming freshers for performing dramatics.
- Worked on diverse projects undertaken by the English media body in order to bring to light various happenings on campus affecting the masses as the assistant editor of **The Scholars' Avenue**
- Member of **NCA-National Cultural Appreciation**, selected from a pool of 1500 candidates

Relevant Coursework

- Probability and Statistics
- Machine Learning Specialization
- Deep learning Specialization
- Programming and Data Structures
- Digital Electronic Circuits
- Computer Architecture and Operating Systems