SUSHUMNA SINGH

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Education

M.Tech in Computational and Data Science **2021 – 2023**
Indian Institute of Science, Bangalore *CGPA: 8.20/10*

B.Tech in Biotechnology **2016 – 2020**
Dr. Ambedkar Institute of Technology for Handicapped, Kanpur *CGPA: 8.10/10*

Experience

Data Scientist , ZS Associates **Sep 2023 - Present**

- Developed Promotional effectiveness model using regression to quantify effect of various promotional activities on sales.
- Performed patient attrition analysis using ML models as XGBoost and LGBM. Reduced target patient cohort from ~ 800 to ~ 150 with 60% recall
- Performed market segmentation to identify potential life insurance customers using market research and patient's demographics.

AI Researcher , MLx **Jul 2023 - Sep 2023**

- Worked on increasing efficiency and accuracy of Retrieval Augmented Generation (RAG) using Large Language Models.
- Generated efficient word embeddings using Weakly Supervised Contrastive-Pretraining.
- Reduced hallucinations in ChatPDF LLM using SelfCheckGPT and MQAG(Multiple-choice Question Answering and Generation for Assessing Information Consistency in Summarization).

Data Science Intern, Telerad Tech **May 2022 - Jul 2022**

- Implemented ResNest-50 and EfficientNet for detection of Pulmonary Embolism in CT scans.
- Incorporated interpretability in the classification model with the use of Grad-cam.
- Performed text classification on radiology reports using GloVe word embedding and BiLSTM.

Projects

Natural Language Inference **Apr 2022**

- Experimented with Word2Vec and GloVe word embeddings and implemented multi-class Logistic Regression, LSTM and GRU for the task of natural language inference on SNLI dataset.

Semantic Segmentation **Feb 2022**

- Implemented Fully Convolutional Network (FCN) on top of pre-trained ResNet-50 and VGG-16 backbone for the task of semantic segmentation on PASCAL VOC dataset.

Text Summarization **Aug 2022**

- Fine-tuned T5 transformer model for the abstractive text summarization using BillSum dataset.

Movie Recommendation System **Aug 2022**

- Developed a movie recommendation system that suggests movies to users based on their viewing history and preferences. Utilized collaborative filtering and content-based filtering methods to enhance recommendation accuracy.

Credit Card Fraud Detection **Nov 2021**

- Explored and implemented multiple techniques to alleviate the problem of class imbalance and performed subsequent classification using Logistic Regression,SVM and Random Forest.

Relevant Coursework

- Machine Learning
- Stochastic Models
- Medical Imaging
- Computing For AI/ML
- Linear Algebra
- Bioinformatics
- Numerical Methods
- Differential Equations

Technical Skills

Programming Language: Python
Tools: PyTorch, TensorFlow, NLTK, Sci-kit Learn, OpenCV, Pandas, Keras
Knowledge Areas:Machine Learning, Deep learning, Natural Language Processing, Medical Imaging, Bioinformatics

Academic Accomplishments

- Awarded Citrix Scholarship 2021.
- Secured AIR 79 in GATE 2020.