SAMEEKSHA BHATIA

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Education

MTech in Computational and Data Science   **August 2023 – July 2025**
Indian Institute of Science (IISc), Bangalore   *CGPA : 8.0/10*

BTech in Biotechnology   **August 2019 – July 2023**
Guru Gobind Singh Indraprastha University, Delhi   *CGPA : 9.17/10*

Work Experience

Data Science Intern, Cocoblu Retail Ltd   **May 2024 - August 2024**
- Implemented and fine-tuned **Linear Regression**, **Decision Trees**, **Random Forest**, and **MLP Regressor** to predict units sold, developing a **price recommendation model** for event days to optimize revenue or return-on-investment
- **Enhanced an existing price elasticity model** to more effectively identify elastic thresholds and forecast optimal prices to drive demand spikes by isolating the incremental impact of increased glance views (GVs) and promotional deals

Projects

Image Captioning   **September 2024**
- Fine-tuned an image captioning model using **Vision Transformer (ViT)** as the encoder and **GPT-2** as the decoder trained on the Flickr8k dataset and evaluated using ROUGE scores

Neural style transfer   **August 2024**
- Reimplemented the Neural Art Transfer Model and applied **transfer learning** using the **VGG19 architecture**, a pre-trained convolutional neural network from the ImageNet dataset, to generate stylized images from given content and style inputs

Breast Cancer Ultrasound Image Segmentation and Classification   **July 2024**
- Developed a **U-Net model** for **semantic segmentation** of breast cancer ultrasound images to identify tumor regions, and additionally, implemented a CNN for classifying normal, benign and malignant tumors achieving high accuracy

Chat and Dialogue Summarization using FLAN Text-To-Text Transfer Transformer (T5)   **June 2024**
- Utilized **FLAN-T5** for summarization on 'samsum' dataset of 16k conversations achieving a ROUGE-1 score of 47.23

Neural Date Translation   **May 2024**
- Implemented **LSTM Encoder-Decoder** for automated conversion of human-readable to machine-readable dates. Improved accuracy from 85.4% to 96.6% on test data using **Attention Mechanism**

Detection of Equivalent Quora Questions   **April 2024**
- Implemented an **LSTM siamese network** using different embeddings (**BERT, Word2Vec and GloVe**). BERT embeddings performed best as compared to others

Bayesian Data Analysis   **March 2024**
- Conducted exploratory data analysis (EDA) on the PCOS dataset, applying **Bayesian modeling techniques** including Bayesian logistic regression for classification, Gaussian Mixture Models for clustering, and Bayesian linear regression

Credit Card Fraud Detection   **December 2023**
- Conducted EDA and addressed class imbalance using **undersampling** and **SMOTE**; performed hyperparameter tuning and evaluated various models including **Logistic Regression**, **KNN**, **SVM**, **Decision Tree**, **Random Forest**, and **XGBoost**

Relevant Coursework

- Linear Algebra
- Probability
- Machine Learning
- Bayesian Learning
- Deep Learning (CV)
- Data structures
- Natural Language Processing

Skills

Programming Languages: Python, SQL (Basic) , LaTeX
Tools: Scikit Learn ,PyTorch, Tensorflow, Keras, NumPy, Pandas, Matplotlib , Hugging Face
Technical: Machine Learning, Deep Learning, Natural Language Processing , Computer Vision, Generative modelling, LLMs, Data Analysis, Statistical Analysis, Optimization, Data Visualisation
Interpersonal Skills: Problem Solving, Quick Grasping, Communication

Academic Accomplishments

- Recipient of the **Wells Fargo Fellowship** for Women 2023-25
- **Secured All India Rank 93** in Graduate Aptitude Test in Engineering (GATE), Biotechnology
- Awarded **Summer Research Fellowship by the Indian Academy of Sciences** from 2,50,000 applicants nationwide
- Graduated as **Gold Medalist**, ranking 1st in a class of 50 students during BTech