Prasanna Biswas

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EDUCATION

Master of Technology
Computer Science and Engineering   *July 2018 – July 2020*
Indian Institute of Technology, Bombay   *CGPA:* **8.43**

Bachelor of Technology
Computer Science and Engineering   *July 2014 – July 2018*
V.E.S Institute of Technology, Mumbai   *CGPA:* **9.07**

AREAS OF INTEREST

Machine Learning.   Sentiment and Emotion Analysis.   Data Structures and Algorithms.

PUBLICATIONS

A Computational Model to Understand Emotions in Sarcasm (Under Review)
Prasanna Biswas, Anupama Ray, Pushpak Bhattacharyya

- Submitted to EMNLP'2020.

Home Automation Using Panoramic Image Using IoT ✎
Nupur Giri, Chetan Gupta, Mohit Choithwani, Prasanna Biswas, Piyush Gidwani

- Published in 2018 International Conference on Recent Innovations in Electrical, Electronics Communication Engineering (ICRIEECE).

WORK EXPERIENCE

Research Assistant
Center for Indian Language Technology, IIT-Bombay   *July'20 – Present*

- Working with IBM-AIHN network on studying the Effect of Sarcasm in Emotion Analysis using a **Multi-Modal Meta-Learning** framework.
- Leveraging the audio modality using self-supervised learning (**PASE**), **wav2vec**, along with traditional feature extraction like MFCC and Spectrogram to better capture the speech information.

MASTER THESIS

A Computational Model to Understand Emotions in Sarcasm
M.Tech Project
Prof. Pushpak Bhattacharyya   *Jan 2020 – July 2020*

- **Objective**: Emotion Recognition in Sarcastic sentences.
- **Dataset Contribution:** We created a benchmark dataset 'emo-UStARD', of sarcastic and non-sarcastic videos, that is annotated with 8 primary emotions, and also arousal and valence levels to get the intensity of emotions.
- Conducted a series of experiments exploring every aspect of textual modality using Encoder based classifier with BERT word embeddings.
- Observed **18% increase in accuracy score** in Multi-label Emotion Prediction when additional information like sentence being Sarcastic and Context is passed.

Investigating importance of Emojis in Sarcasm Detection
M.Tech Project
Prof. Pushpak Bhattacharyya   *June 2019 – Dec 2019*

- **Objective**: To analyze the importance of Emoji modality in Sarcasm detection from text.
- Implemented a basic **LSTM-NN** classifier and a **fasttext** classifier as a baseline for sarcasm detection problem which had text with emojis.

- Conducted **experiments** on these classifiers by placing **emojis** at **different positions** in the text for analysing the positional importance of emojis.
- Incorporated the features from **knowledge graphs** i.e. **SentiWordnet** and **EmojiNet**.The accuracy for the tweets increased and the values were close to 90%. The importance of emojis was then supported by LIME analysis.

COURSE PROJECTS

Insincere Question detection in Quora
Prof. Sunita Sarawagi Gupta, Spring 2019

- Implemented various methods of encoding using **RNNs, CNNs with pooling and self-attention**.
- Used and tested state-of-the-art **BERT and ELMo** to obtain question representations.Best model was obtained using RNNs with self-attention layer and ELMo features, with an F-score of **0.60**.

Neural Network based classifier from Scratch
Prof. Preethi Jyothi, Autumn 2018

- Implemented a **Neural Network model** where the number of **hidden layers**, number of **hidden nodes** and **activation function** of each layer can be **customized**. Conducted experiments using different combinations. Relu with 2 hidden layers performed the best.

Movie Recommendation System
Prof. Ganesh Ramakrishnan, Autumn 2018

- Performed **collaborative based filtering** using user-preference, movie-feature and ratings matrices. Mean-centered the data and implemented **Linear Regression from scratch** to model the function between user preferences and movie features.

Implementation of LSM Tree
Prof. S. Sudarshan, Spring 2019

- **Objective**: To implement a LSM tree designed to provide low-cost **indexing for files** experiencing a high rate of inserts over an extended period.
- Implemented code for **B-Trees** having functions for **inserting, node-splitting and traversing** and extended it to adapt the functionalities of LSM tree.

EXTRA-CURRICULAR

Worked at Zilla Parishad School
September 2017

- Guided **needful students at Zilla Parishad School**, Dombivali for a week. Helping them in Drawing, Hand-crafts, Basic Mathematics and visualize concepts in Science.

POSITION OF RESPONSIBILITY

Social Secretary (Post-Graduate), CSE
July 2019 – July 2020

- **Coordinate** with **Institute and Department authorities** for Cultural related events. Worked with CSE Council in **organizing all department events** and designing t-shirt, hoodies, and posters.

Interview Coordinator
December 2018

- Coordinated with a team of 250+ members for interviews of 1400+ students and assisted in conducting Pre-placement Talks and Tests for 10+ firms.

TECHNICAL SKILLS

Programming Languages	C/C++, Python, Prolog, Java (Limited Exposure)
Technologies	PyTorch, Knowledge Graphs, LIME, Django, Git, LaTeX.

ACHIEVEMENTS

- Secured 4th position within the campus in **Flipkart GRiD** contest 2019.
- Won 2nd prize in **Inter-College Project Competition 2018** at St.Francis Institute of Technology.
- Participated in **National-Level Project Competition** ELECTROWIZ - 2018.
- Participated in Group Dance competition of PG Cult 2019.