

## Education

### Indian Institute of Information Technology, Kottayam

Aug 2023 - May 2027

*Bachelor of Technology - Computer Science and Engineering*

Kottayam,  
India

Senior Secondary Education - Alpha junior College, Vile Parle, Mumbai

Apr 2021-Apr 2023

High School - CBSE ( 96.4%)

Mumbai,  
India

## Technical Skills

**Languages:** C,C++, Python, Java, HTML, CSS.

**Tools:** Git/GitHub, VSCode, Jupyter Notebook, PowerBI.

**Databases:** SQL, MongoDB (NoSQL)

**Frameworks/Libraries:** Streamlit, Numpy, Pandas, Matplotlib, ScikitLearn, SpaCy, NLTK, PyTorch, TensorFlow, HuggingFace, Word2Vec, GloVe,

**Relevant Academic Courses:** Data Structures, Computer Networks, Mathematics III( Probability and Random Processes), Mathematics IV ( Fourier Transform and Differential Equations)

## Projects

### IMPLEMENTATION OF VIDEOS FAKE NEWS DETECTION ON SOCIAL MEDIA ( UNDER SUPERVISION OF DR. BALASUBRAMANIAN ) (PRESENT)

- Understanding and Implementation of the of the Fake News Detection Model inspired from the research papers - **A Survey on Video-Based Fake News Detection Techniques** ( Ronak Agrawal and Dilip Kumar Sharma), **FakeSV: A Multimodal Benchmark with Rich Social Context for Fake News Detection on Short Video Platforms** ( Ping Qi et al.) , and **Effective fake news Video Detection using domain knowledge and multimodal data fusion on YouTube** ( Hyewon Choi, Youngjoong Ko)
- The Model utilises certain Deep Neural Network such as ANN, RNN, CNN, LSTM, Attention mechanism to tackle the problem.
- Citing 2nd research paper in order, it aims in solving one of major issues in field of Fake News Detection of Dataset Scarcity by **generating its own dataset**, based on various parameters, and further suggest a Model for the same which utilises **BERT architecture**, CNN, RNN, LSTM, to achieve a significantly better BLEU score.
- 3rd research paper focuses on the usage of the **attention mechanism** along the with CNN techniques for the purpose and has proved in significant improvements, which are discussed in the same.

### IMPLEMENTATION OF RESEARCH PAPER “ATTENTION IS ALL YOU NEED” (2017)

- Implemented the Transformer architecture from scratch based on the “Attention Is All You Need” paper.
- Designed multi-head self-attention and positional encoding mechanisms for effective sequence modeling.

- Developed an encoder-decoder structure using scaled dot-product attention for parallelized processing.
- Optimized model training using layer normalization, residual connections, and weight initialization techniques.
- Trained the model on text datasets using PyTorch/TensorFlow, leveraging GPU acceleration for efficiency.
- Fine-tuned hyperparameters such as number of heads, depth, feedforward dimensions, and dropout rates for optimal performance.

### **SENTIMENT ANALYSIS MODEL USING MULTINOMIAL NAIVE-BAYES ALGORITHM**

- Built a sentiment classification model using the IMDB movie reviews dataset.
- Applied text preprocessing: tokenization, lemmatization, stopwords removal, and TF-IDF vectorization.
- Trained a Multinomial Naïve Bayes (NB) classifier to classify reviews as positive or negative
- Split data into 80-20% train-test sets for evaluation.
- Achieved high accuracy using probabilistic text classification techniques.
- Tech Stack: Python, Scikit-learn, spaCy, NLP, TF-IDF

### **NEXT WORD PREDICTOR USING LSTM**

- Built an LSTM-based next-word predictor trained on FAQ-style text data.
- Used a word embedding layer to convert text into vector representations.
- Implemented a sequential LSTM model with 150 hidden units to learn contextual relationships.
- Trained the model to predict the next word using a softmax classifier over 283 vocabulary words.
- Built using TensorFlow/Keras, NLP preprocessing, and text tokenization techniques.

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### **Achievements**

- Solved **100+ coding problems** across platforms like Leetcode and Codechef.
- Active part of the team which cleared the college phase of Smart India Hackathon (SIH) 2024.