SAKIB IMTIAZ

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Professional Summary

As a dedicated and methodical Computer Science & Engineering graduate, I specialize in advanced data analysis, machine learning, and large language models. My experience includes a role as a member of a research team where I have acquired a reputation for precision and adaptability. I have successfully navigated the intricacies of large language models and their applications in significant sectors, contributing substantially to advances in natural language processing. I am passionate about applying my analytical prowess and collaborative spirit to tackle innovative and challenging problems in a dynamic industry setting. I am committed to advancing the frontiers of knowledge in achieving a substantial impact.

Research Interest

Machine Learning, Computer Graphics, Computer Vision, Bioinformatics, Natural Language Processing, Large Language Models.

Education

2019 – 2024 **Bachelor of Science**

Computer Science & Engineering

Rajshahi University of Engineering & Technology (RUET)

CGPA: 3.55 on a scale of 4.00 (160 credit)

Position: Ranked in the first quartile among 180 students

Publications

1) ASGM-KG: Unveiling Alluvial Gold Mining Through Knowledge Graphs

Debashis Gupta, Aditi Golder, ***Sakib Imtiaz****, Greg Larsen, Miles Silman, Luis Fernandez, Sarra Alqahtani, Fan Yang, Robert Plemmons, and V. Paúl Pauca.*

Resource Paper – (CIKM-2024) (submitted)

Objective: Assess the impact of Artisanal and Small-Scale Gold Mining (ASGM) on economic development, labor markets, and social dynamics within various regions.

Approach: Employed a multidisciplinary approach, integrating insights from environmental science, economics, and social studies.

Innovations:

- Developed a knowledge graph specific to ASGM domain.
- Implemented a novel method for data validation using web scraping techniques.

2) Analyzing the Performance of Sentiment Analysis using BERT, DistilBERT, RoBERTa and GPT-2

***Sakib Imtiaz**, Emrana Kabir Hashi, and Md. Al Mehedi Hasan.*

Conference Paper – (STI-2024) (submitted)

Objective: Investigate sentiment analysis, also known as opinion mining, within the field of natural language processing.

Approach: Utilized a deep learning methodology employing four advanced transformer-based models: BERT, DistilBERT, RoBERTa, and GPT-2.

Innovations:

- Achieved exceptional accuracy with the GPT-2 model, attaining 94.13%, significantly outperforming other models.

Research Projects

1) Conversational Agent for Therapy Assistance

Mental health remains a critical issue, with over 50,000 suicides annually in the USA, partly due to cost and societal stigma deterring individuals from seeking professional help. Our project aims to develop an intermediary chatbot to provide therapeutic support and assess symptoms of anxiety, depression, and suicidal tendencies through conversational sessions, complementing traditional therapy.

2) DNA Sequence Classification

This project develops computational methods to categorize DNA sequences based on nucleotide composition and patterns, utilizing techniques from machine learning, data mining, and bioinformatics. By enhancing the accuracy and efficiency of classification algorithms, this work supports biological and medical applications such as gene function identification, biomarker discovery, and personalized medicine.

3) Image Classification of Healthy and Spoiled Fruits and Vegetables

This project develops machine learning algorithms to automatically differentiate between healthy and spoiled produce using visual data, primarily through convolutional neural networks (CNNs). Aimed at improving efficiency in agriculture, food retail, and quality control, this research enhances inventory management, reduces food waste, and boosts consumer safety by enabling accurate, rapid assessments of produce condition.

4) A Robust Deep Learning Model to Detect Epilepsy Utilizing EEG Signals

This project develops a robust deep learning model for epilepsy detection using EEG signals, enhancing diagnostic accuracy and efficiency. This work focuses on leveraging neural networks to analyze complex brain wave patterns for early and precise epilepsy identification.

Technical Skills

Programming Languages	Python, Java, C, C++
Database Design	Oracle, Cassandra, Neo4j
Operating System	Windows, Linux
Other Skills	Dedication, Patience, Leadership, Teamwork

Awards

2024	**Research Excellence Award**
	Rajshahi University of Engineering & Technology (RUET)
2019-2022	**Bangladesh Technical Education Board Scholarship**
	Rajshahi University of Engineering & Technology (RUET)

Extra-Curricular Activities

Peer Tutoring, Volunteering, Reading Books (Novel, Science fictions, Tech news etc.)

Sports (Cricket, Football, Chess, Badminton, Video Games)

Watching movies, documentary, biography.

DYI projects and Origami.

References

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