MOHD MUJTABA AKHTAR

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Computer Science Major (Graduating May 2024) | Seeking Opportunity in AI & Machine Learning

EDUCATION

7.9/10.0	**Bachelor of Technology(Computer Science with Specialization AI-ML)**, *UPES* | Dehradun.India	*2020-May 2024*
76.8%	**XII**, *M K RAI ADARSH INTER COLLEGE,* | AZAMGARH, (U.P)	*2019-2020*
85.8%	**X**, *M K RAI ADARSH INTER COLLEGE,* | AZAMGARH, (U.P)	*2015-2016*

WORK & RESEARCH EXPERIENCE

IIIT Delhi, *Research Associate Intern* | Onsite   *June 2024 - Present*
- Engaged in multiple **research projects** within the domain of **speech and language**.
- Contributed to advancements in **speech recognition and natural language processing**, applying state-of-the-art techniques to solve complex research problems.

Ulster University,UK, *Research Intern* | Remote   *March 2023 - Present*
- Authored and presented a research paper at an international conference **AICS 2023**, showcasing findings and contributing valuable insights to the academic community.
- Demonstrated adeptness in handling complex research methodologies under the mentorship of a renowned expert, highlighting the ability to apply theoretical knowledge to practical research challenges.

The Sparks Foundation, *Data Science and Business Analytics Intern* | Remote   *Dec 2023 - Jan 2024*
- Utilized cutting-edge methodologies for data interpretation, contributing to the implementation of predictive models.
- Gained proficiency in translating theoretical concepts into practical applications, demonstrating a strong command of **data science** techniques in the realm of business analytics.

IBM, *Intern* | Remote   *June. 2023 - Sept. 2023*
- Led a 4-members team of UPES students.
- Built a visual robot from scratch possessing vision, picking, placing, and autonomous decision-making capabilities.
- Implemented a **reinforcement learning algorithm** to enable a robot to perform assembly tasks.

SELECTED PROJECTS

Neurodegenerative disorder: Application for Code-Switched Autism Detection in Children   *August 2023 – Jan 2024*
Speech disorder and disease project
- Self-recording collected and created a new dataset in multi-lingual language.
- Spearheaded a pioneering project utilizing a blend of **Machine Learning, Deep Learning, and Transformer Model** techniques to analyze and classify speech patterns.
- Designed and implemented a **user-friendly interface that allows users to upload audio files from their devices or directly record speech using a microphone.** This feature facilitates the easy collection of speech samples necessary for ASD detection.

Mental Health Disorders Classification in Online Social Media.   *Jan 2024 – March 2024*
Research project
- Leveraged a vast dataset of 484,000 textual files on mental health to enhance processing techniques. Employed extensive preprocessing and a pipeline approach, utilizing transformer encoders and the **ConceptNet model** for embedding extraction. This innovative method outperformed existing research, achieving a remarkable **90%** accuracy rate using **machine learning**, showcasing significant advancements in predictive analytics within mental health studies.

Multi-View Feature Aggregation for Depression Detection from Short Segments of Speech   *Nov 2023 – April 2024*
Research project
- The project introduces a method using Convolutional Neural Networks (CNN) to detect depression from brief speech segments. By combining multiple feature representations, such as **XVECTOR, EMOTION, and TRILLSSON**, the approach achieves a peak accuracy of 94.03%, outperforming individual features. The project demonstrates that feature aggregation significantly enhances **depression detection** accuracy across varying speech segment durations, underscoring the critical role of feature engineering in mental health diagnostics.

TECHNICAL SKILLS

Programming	Python, C++, Java, Scala, SQL, Matlab, Git, LaTeX, HTML
Developer Tools:	VS Code, PyCharm, Anaconda, MySQL, MS Office
Areas of Interest:	Emerging Technologies in AI and ML, Research & Applications,Machine Learning Expertise
AI-ML Tools:	TensorFlow, Keras,PyTorch, Scikit-Learn,NLTK, SpaCy
Framework:	Machine Learning, Natural Language Processing, DSA, OOPS

RESEARCH WORK & PUBLICATION

Under-review	Understanding Hallucination in Language Models: Leveraging Semantic Textual Similarity for Evaluation and Improvement (Paper is Under Review).
Published	Speech-Based Alzheimer's Disease Classification System with Noise-Resilient Features Optimization. (at AICS-2023) IEEE Xplore. **Link**
Accepted	NeuRO: An Application for Code-Switched Autism Detection in Children (Interspeech Demo 2024).
Submitted	Enhancing Time Efficiency in Audio Encryption: A Novel Approach Leveraging Double DNA Operations within Chaotic Map-Based Schemes.