

MOHSIN ALI, MOHAMMED

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Education

San Diego State University

Master of Science in Computational Data Science - Thesis

Aug 2022 – May 2024

San Diego, California

Indian Institute of Information Technology (IIIT-S)

Bachelor of Technology in Computer Science and Engineering - Thesis

Aug 2018 – June 2022

SriCity, India

Experience

Telaeris Inc

AI Software Engineer (Co-Op)

May 2023 – May 2024

San Diego, USA

- I played a key role in constructing AI-powered applications for Android and iOS platforms, utilizing Flutter for cross-platform functionality, alongside Java for Android development and Swift for iOS implementation
- Contributed to the implementation of access control features and successfully integrated Facial Recognition technology into the existing systems. This integration resulted in a notable 5% increase in accuracy.

Rupeek Fintech Pvt Ltd

Software ML Engineer (Co-Op)

January 2022 – July 2022

Bangalore, Karnataka

- Contributed to the Stone Weight Estimation for Gold Jewellery project by increasing and diversifying the jewelry dataset, training pretrained and custom models like SegNet, U-Net and YOLO v3. Furthermore, I utilized AWS SageMaker for deployment and production, along with managing data storage using S3 buckets
- I developed a benchmarking system for model testing and automated the entire process from data loading to model training and inference, resulting in a 10% increase in the model's performance. Additionally, by utilizing Aruco markers as a detection method, I reduced the model inference time from 13 seconds to 4 seconds, making the model applicable for low-latency systems.

AI Institute, University of South Carolina (AIISC)

AI Researcher

January 2022 – December 2022

South Carolina, USA

- **Proposed** an innovative bi-gram and switching point-based rotary positional encoding method within transformers to capture language mixing patterns effectively for various tasks including Machine Translation, Named Entity Recognition, Part-of-Speech Tagging, and Sentiment Classification. This technique showcased a notable improvement, surpassing existing State-of-the-Art (SOTA) models by 4-5% in accuracy. This work extends to Large Language Models (LLMs) and Generalized AI (GenAI) frameworks
- **Mohsin Ali Mohammed**, Sai Teja Kandukuri, Neeharika Gupta, Anubhab Chatterjee, Parth Patwa and Amitava Das *"CONFLATOR - Incorporating Linguistic Structure through Positional Encoding into Code-Mixed Language Modeling"* **published in the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP).**

Wipro AI Labs

AI Research Intern

January 2021 – December 2021

Bangalore, Karnataka

- **Proposed** a new Encoder-based Transformer model called PESTO, featuring dynamic and relative positional encoding with switching-point-based patterns to capture the patterns in Code-Mixed data.
- Achieved state-of-the-art (SOTA) results in the SentiMix task/Code-Mixed data without using any pre-trained heavy language models, whereas all other SOTA models utilized models such as BERT or XLNet. PESTO surpassed them, exhibiting a 3% increase in accuracy.
- **Mohsin Ali**, Kandukuri Sai Teja, Sumanth Manduru, Parth Patwa, Amitava Das *"PESTO: Switching Point based Dynamic and Relative Positional Encoding for Code-Mixed Languages"* **published in the 36th AAAI Conference on Artificial Intelligence (2021-22).**

PROJECTS

TailTalk Advisory: AI-Powered Pet Care Chatbot (Team Leader)

Jan 2024 – Ongoing

- Developed a user-friendly Petcare AI app using **Flutter**, integrating the state-of-the-art **Llama2** model from **Hugging Face** and pretrained over 100 documents on Petcare.
- Utilized **AWS SageMaker** for scalable and cost-effective model training and deployment, ensuring reliability in managing machine learning workflows within the app's backend infrastructure.
- Implemented RESTful APIs using **AWS Lambda** and API Gateway to enable seamless communication between the Petcare AI app and the deployed Llama2 model. Facilitated real-time pet care guidance and support for users, enhancing their overall experience and satisfaction.

Society Maintenance Management System (Team Leader)

Aug 2022 – Dec 2022

- Designed and developed the frontend user interface using **React.js**, and implemented backend APIs and services using **Java Spring Boot**, integrating **MongoDB** for data storage and retrieval, resulting in improved efficiency and user satisfaction by 10% compared to previous project.

SKILLS

Programming Languages:

Python, C/C++, Java, Dart, SQL, HTML, CSS, Bash, Fortran, \LaTeX

Frameworks and Libraries:

Tensorflow, PyTorch, Sklearn, Django, MERN, Java Springboot

Databases, Cloud and Bigdata:

MongoDB, MySQL, PostgreSQL, AWS, Google Cloud Platform (GCP), Hadoop, Spark

Mobile Development:

Flutter, Android Native, IOS, Postman, Android Studio, Git

IoT Technologies:

RFID, UHF, Honeywell Barcode