

Mohammed Abbas Ansari

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EDUCATION

- **Jamia Millia Islamia University** New Delhi, India
• *Bachelor of Technology - Computer Engineering; CPI: 9.69* November 2020 - May 2024
Relevant Courses: Artificial Intelligence, Data Mining, Analysis and Design of Algorithms

SKILLS SUMMARY

- **Languages:** C, C++, Python, SQL
- **Frameworks:** HuggingFace, PyTorch, Scikit, TensorFlow, Keras, OpenCV
- **Tools:** Git, VSCode, Jupyter, Google Colab, Weights and Biases
- **Soft Skills:** Leadership, Event Management, Writing, Public Speaking

RESEARCH EXPERIENCE

- **Research Intern (DAAD-WISE Scholar)** Munich, Germany
• *Human Centered Technologies for Learning Lab, TU Munich* Jun 2023 - Present
 - **Supervisor:** Prof. Dr. Enkelejda Kasneci
 - **Description:** Working on novel self-supervised learning techniques for free-viewing scan path data to create models that can be fine-tuned for scan path classification tasks such as Autism detection, Toddler Age detection, etc.
- **Summer Research Intern** Remote
• *Interactive Technologies and Multimedia Research Lab, IIIT-Allahabad* Jun 2022 - Jul 2022
 - **Supervisor:** Professor Anupam Agrawal
 - **Description:** Experimented with novel duration encoding techniques in a CNN-LSTM framework for autism diagnosis from visual scan path data.
- **Undergraduate Researcher (Independent)** Remote
• *Mentored by Mr. Hitesh Hinduja* Aug 2021 - Feb 2022
 - **Description:** Demonstrated performance gains in wild text localization in images using a linear variant of feature-map attention called Efficient Attention.

PUBLICATIONS

- **Master GAN: Multiple Attention is all you Need: A Multiple Attention Guided Super Resolution Network for Dems:**
A Mohammed, M Kashif, MH Zama, **MA Ansari**, S Ali. *IGARSS 2023, IEEE International Geoscience and Remote Sensing Symposium*
- **Revisiting TextFuseNet: Text Context Enhanced Attention Networks For Scene Text Localization:**
H Hinduja, **MA Ansari**. *International Organization Of Scientific Research (IOSR) Journal of Computer Engineering* 25 (1), 37-49.

PROJECTS

- **Multimodal Emotion-Cause Pair Extraction using Graph Neural Networks (BTech Minor Thesis):**
Developed a graph neural network for emotion-cause pair extraction from multimodal conversational data. Utilized CLIP, BERT, and HTS-AT audio encoder for diverse modality features. Explored multimodal fusion in transformers. Modeled conversational structure with graph attention networks. Tech: Python, PyTorch, Weights and Biases, HuggingFace (Aug '23 - Dec'23)
- **Improved Scanpath Classification with Self-Supervised Learning (DAAD-WISE Research Project):**
Conducted research on enhancing visual attention modeling through self-supervised learning. Developed novel scanpath augmentation techniques, applied Barlow Twins Loss, and exploring various encoder architectures. Tech: Python, PyTorch, Weights and Biases (June'22 - Present)
- **Super-Resolution of Digital Elevation Models (ISRO Grand Finalist, SIH 2022. IGARSS 2023 Publication):**
Led a team in developing a U-Net based convolutional network with attention for DEM super-resolution in ISRO's Smart India Hackathon. Proposed MASTER GAN architecture achieving state-of-the-art results (PSNR 31.024, SSIM 0.908). Published a research paper on the use of multiple attention for accurate DEM super-resolution. Tech: Python, PyTorch, Weights & Biases. (Apr '22 - Jan '23)
- **Improved Visual Attention Classification for Autism Spectrum Disorder through Time-Dependent Representations. (Research Project):**
Trained a deep learning network on Saliency4ASD dataset using ResNet-50 and LSTM for time-dependent representations. Encoded embeddings with duration via time-masking and joint embedding. Tech: Python, PyTorch, Weights and Biases (Jun '22 - Jul'22)

- **Text Localization using Efficient Attention (IOSR 2023 Publication):**
Modified Mask R-CNN Architecture with efficient attention for improved text localization accuracy on SynthText dataset. Tech: Python, PyTorch, Detectron2. (Aug '21 - Feb '22)
- **Robust Face Recognition Security System (ML Security, Hack-JMI Hackathon runner-up):**
Developed a robust face recognition security system using MTCNN, VGGFace, and inception-resnet siamese network capable of detecting spoof faces. Tech: Python, OpenCV, TensorFlow, Keras (Oct '21)
- **Novel Bible Verse Generator (Language Model):**
Trained a character-level neural language model on Bible (KJV) using LSTM. Built a loop to generate 1000 characters from the seed text which was the fake Bible verse quote from pulp fiction (1994). Tech: Python, Keras (June '21)

HONORS AND AWARDS

- DAAD-WISE Scholarship awarded by German Government - June 2023
- IIIrd Rank in Second Year and Third Year of BTech Computer Engineering - June '22 & '23
- Smart India Hackathon 2022 & 2023 Grand Finalists (All India level Hackathon) - Aug '22 & Dec '23
- BTech CS Batch of 2024 Elected Class Representative - August 2022
- Hack-JMI Hackathon Runner Up (University level) - October 2021

VOLUNTEER EXPERIENCE

- **Machine Learning Team Lead**
Google Developers Student Club, Jamia Millia Islamia *Aug 2021 - May 2023*
 - **Responsibility:** Leading the core Machine Learning Team of GDSC JMI to foster a strong ML community at Jamia Millia Islamia.
 - **Events:** Managed a data science competition end-to-end hosted on Kaggle. Taught a session: "Introduction to Machine Learning Algorithms" as part of Google ML Study Jam.
- **Vice Chairperson and ML/AI Head**
IEEE Computer Society JMI - Student Chapter *Jun 2021 - May 2023*
 - **Responsibility:** Lead teams of different domains such as Web, Android, DSA and ML/AI to conduct events and workshops to improve the technical acumen and enthusiasm of students on campus.
 - **Events:** Conducted a Break into AI camp where I coordinated a talk by an alumnus and then taught basics of machine learning. Interaction with Freshmen to guide them in tech. Invited talks by alumnus on how to prepare for campus placements.
- **Class Representative**
Class of 2024, BTech Computer Engineering, Jamia Millia Islamia *Sep 2021 - Aug 2023*
 - **Responsibility:** Acting as an intermediary between student issues and teachers. Responsible for conveying any important information from academic staff to all students.
- **Joint Secretary**
Department of Computer Engineering's Subject Association, Jamia Millia Islamia *Nov 2022 - May 2023*
 - **Responsibility:** Conducting and managing events by the department such as competitions and invited-talks.