Tahir Javed

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EDUCATION

Indian Institute of Technology Madras **Tamil Nadu, India**
Ph.D. in Computer Science and Engineering (CGPA: 9.11/10.0); Advisor - Dr. Mitesh M. Khapra *2021 – Present*

National Institute of Technology Srinagar **Jammu and Kashmir, India**
Bachelor of Technology in Information Technology; CGPA: 9.159/10.0 *2016 – 2020*

PUBLICATIONS

Javed et al., *Nirantar: A Robust Multi-accent Benchmark for Evaluating Hindi ASR Systems* [Paper]
Accepted in *Interspeech*, 2025

Joshi et al., *Recognizing Every Voice: Towards Inclusive ASR for Rural Bhojpuri Women* [Paper]
Accepted in *Interspeech*, 2025 — Best Student Theme Paper Award

Bhogale et al., *Towards Bringing Parity in Pretraining Datasets for Low-resource Indian Languages* [Paper]
Accepted in *ICASSP*, 2025

Javed et al., *LAHAJA: A Robust Multi-accent Benchmark for Evaluating Hindi ASR Systems* [Paper]
Accepted in *Interspeech*, 2024

Javed et al., *IndicVoices: Towards building an Inclusive Multilingual Speech Dataset for Indian Languages* [Paper]
Accepted in *Findings at ACL*, 2024

Javed et al., *Svarah: Evaluating English ASR Systems on Indian Accents* [Paper]
Accepted at *Interspeech*, 2023

Bhogale et al., *Vistaar: Diverse Benchmarks and Training Sets for Indian Language ASR* [Paper]
Accepted at *Interspeech*, 2023

Javed et al., *IndicSUPERB: A Speech Processing Universal Performance Benchmark for Indian languages.* [Paper]
Accepted at *AAAI Conference on Artificial Intelligence*, 2023

Javed et al., *Effectiveness of Mining Audio and Text Pairs from Public Data for Improving ASR Systems for Low-Resource Languages* [Paper]
Accepted at *ICASSP, 2022*

Javed et al., *Towards Building ASR Systems for the Next Billion Users* [Paper]
Accepted at *AAAI Conference on Artificial Intelligence*, 2022

Malik et al.,*Disease Recognition in Sugarcane Crop Using Deep Learning* [Paper]
Accepted at *Advances in Artificial Intelligence and Data Engineering*, 2019

Javed et al., *Deep Learning Methods for Diabetic Retinopathy Detection*[Book chapter]
Accepted as a Chapter in *Application of Deep Learning Methods in Healthcare and Medical Science*, 2022

EXPERIENCE

Sarvam AI **May'25 - Jul'25**
Research Fellow *Bangalore*

- Worked on large-scale data curation and model training for speech systems.

Indian Institute of Technology Madras **Jul'21 - Nov'22**
Teaching Assistant *Tamil Nadu, India*

- Linear Algebra and Random Processes (CS6015); *July - Nov 2022*
- Fundamentals of Deep Learning (CS6910); *Jan - May 2022*
- Linear Algebra and Random Processes (CS6015); *July - Nov 2021*

CGI Information Systems and Management Consultations **Dec'20 - Jan'21**
Software Engineer *Bangalore, India*

- Worked as a Java Backend Developer

Stackroute – NIIT **Sep'20 - Dec'20**
Full Stack Trainee – Immersive Batch

- Worked on Front-end, Back-end and integration of Web apps.
- Hands on experience with Angular, JavaScript, HTML, CSS, Bootstrap, Spring Boot, Java, MySQL, MongoDB, Docker, Grafana

Computational Intelligence Lab - IISc **Dec'18 - Feb'19**
Research Intern *Bangalore, India*

- Worked on SafalFasal – An Automatic Crop Monitoring System (Sugarcane Crop)
- Built and deployed end to end inference engine of SafalFasal using Flask, FastAI, Android App and Google Cloud Engine.

CETPA Infotech Pvt. Ltd. **Dec'17 - Jan'18**
Java/Android Trainee *Delhi, India*

- Fundamentals of Java and Android

AWARDS/CERTIFICATES

- Microsoft Research India PhD Award Recipient 2024
- Google PhD Fellowship Recipient 2022
- PMRF Recipient 2021
- Departmental rank 2^{nd} in BTech
- Certificate of Honor from CETPA for remarkable performance

PROJECTS

Synthetic Benchmarks | *python, DTW* **Apr'25 - Ongoing**

- Exploring use of synthetic data (generated by modern TTS systems like Orpheus) as proxies for evaluating modern ASR systems on specific-domains and usecases.

Building Multilingual ASR and Audio Language Models | *python, NeMo* **Apr'23 - Ongoing**

- Building Audio Language Models for Indian Languages supporting diverse speech understanding tasks, including speech translation, romanization, and structured data extraction.
- Developing IndicASR to enable robust speech recognition across all 22 constitutionally recognized Indian languages.
- Exploring strategies to improve multilingual model performance while ensuring scalability and efficient deployment.

Continual Learning for ASR [Paper] | *python, NeMo* **Apr'25 - Ongoing**

- Build framework to study the Continual Learning for ASR

IndicVoices [Download, Paper] | *karya, node, azure* **Nov'22 - Ongoing**

- Developed an open-source blueprint for large-scale multilingual speech data collection.
- Targeting 1,000 hours of labeled speech per language across 22 Indian languages; collected 17K hours to date, with 9.5K hours transcribed.

IndicSUPERB [Github, Paper] | *python, fairseq* **Jun'21 - Dec'22**

- A robust benchmark consisting of 6 speech language understanding (SLU) tasks across 12 Indian languages.
- The tasks include automatic speech recognition, automatic speaker verification, speech idntification, query by example and keyword spotting.
- Kathbath: Speech dataset which has 1684 hours of labelled speech data across 12 Indian Languages.

IndicWav2Vec [Github, Paper] | *python, fairseq, kenlm, wandb* **Jun'21 - Nov'21**

- Curated ∼17000 hours of unlabelled speech data in 40 Indian Languages
- Pretrained several variants of wav2vec style models
- Achieved SOTA ASR systems for 9 languages on 3 datasets
- Performed ablations in LM choice, Lexicon and Pretraining Corpus size and see which works best.

Diabetic Retinopathy Detection [Github] | *fastai, GCE, python, jupyter* **Mar'20 - Jun'20**

- This project aims at automating the retinopathy detection task by replacing the manual examination of retinal image (taken using a fundus camera) with that of deep neural networks.

Training Neural Network using Particle Swarm Optimization [GitHub] | *python, numpy* **Mar'20 - Jun'20**

- A simple, quick convergent method for training small neural nets by using naturally inspired algorithms. This project demonstrates training a 5-layered neural net using particle swarm optimization as it's loss function optimizer.

A basic Java based Network Simulator [GitHub] | *java* **Mar'20 - Jun'20**

- Network simulator capable of creating nodes, establishing connections between them and sending data. It aims at providing understanding about different layers involved in Data communication over internet.

Crop Disease Recognition using Deep Learning [Github, Paper] | *python, fastai, jupyter* **Dec'18 - Feb'19**

- A novel approach to show the applicability of deep learning models in disease detection in plants. In the project, Sugarcane crop was taken as subject plant.

PERSONAL PROFILE

Hobbies: Playing Chess, Reading tech. articles, Building DIY Projects
Languages: Kashmiri, Urdu, English