Dia Krishnan

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About Me

I am a Machine Learning Researcher at Adalat AI with **5+** years of experience in deep learning. My work spans speech recognition, speaker diarization, and multilingual and code-switched ASR, with papers at major venues like **AAAI, ICASSP, ICML, Interspeech, SPECOM.**. I build privacy-compliant production speech systems for low-resource Indic languages, designed to be deployed in noisy courtrooms.

Education

Indian Institute of Information Technology Kottayam — Kottayam, India
Bachelor of Technology (with Honours) in Computer Science (B.Tech Hons. CSE) — *May 2024*

- CGPA: **9.01** out of 10

Skills Summary

Languages	Python, C, JavaScript HTML/CSS, MATLAB/Octave
Frameworks	PyTorch, Flutter, TensorFlow, Keras, NLTK, Django, Flask
Tools	GIT, Linux, Bash, GCP, Docker, Figma

Publications and Preprints

1. Cipolina-Kun, L., Caenazzo, S., Mazzei, G., **Menon, A. S.** *"Image Inpainting Applied to Art: Completing Escher's Print Gallery."* International Conference on Machine Learning **ICML**: LatinX in AI (LXAI) Research Workshop, 2021.
2. Tripathi, K., **Menon, A. S.**, Gaurav, A., Gohil, R., Wasnik, P. *"Listen Like a Teacher: Mitigating Whisper Hallucinations using Adaptive Layer Attention and Knowledge Distillation"* **AAAI**, 2026
3. **Menon, A. S.**, Gohil, R., Tripathi, K., Wasnik, P. *"LASPA: Language Agnostic Speaker Disentanglement with Prefix-Tuned Cross-Attention"* Proc. **Interspeech** 2025
4. **Menon, A. S.**, Nethil, K., Manohar, K. *"Slots Are Not Speakers: Training-Free Speaker Linking for Frozen Streaming Diarizers."* [Under Review]
5. **Menon, A. S.**, Juvekar, K., Manohar, K., Bhattacharya, A., Nethil, K. *"How Duration Modeling Shapes Punctuation in Transducer ASR: A Mechanism Study."* [Under Review]
6. Juvekar, K., Manohar, K., **Menon, A. S.**, Bhattacharya, A., Nethil, K. *"Vividh-ASR: A Complexity-Tiered Benchmark and Optimization Dynamics for Robust Indic Speech Recognition."* Proc. **Interspeech** 2026
7. Tripathi, K., **Menon, A. S.**, Gohil, R., Wasnik, P. *"MuTeR: Multi-Scale Temporal Reasoning with Boundary Proposal Guided Attention for Precise Profanity Localization."* [Under Review]
8. Dasare, A., Chowdhury, A. R., **Menon, A. S.**, et al. *"Bridging the Gap: Towards Linguistic Resource Development for the Low-Resource Lambani Language."* International Conference on Speech and Computer **SPECOM**, Springer Nature Switzerland, 2023
9. **Menon, A. S.,** Konjengbam, A. *"X-ABI: Toward Parameter-Efficient Multilingual Adapter-Based Inference for Cross-Lingual Transfer."* International Conference on Data Management, Analytics and Innovation **ICDMAI**, Springer Nature Singapore, 2023
10. **Menon, A. S.**, Tripathi, K., Gohil, R., Wasnik, P. *"Windowed SummaryMixing: An Efficient Fine-Tuning of Self-Supervised Learning Models for Low-resource Speech Recognition"* **ICASSP**, 2026

Industry Experience

Adalat AI

Machine Learning Researcher — *December 2025 - Present*

- Speech transcription models for Indian courts live in **4000+** courts across **11** states
- Drove the migration from **Whisper** to in-house faster and better models with legal capabilities across **En, Ml, Kn, Od, Hi** resulting in **60%** inference cost cut, **2.4x** latency, **5x** concurrency per GPU
- Built a Diarization + ASR service with global identities to track across sessions without a speaker limit
- Placed **1st** on both diarization and Speech Recognition tracks at **DISPLACE 2026**
- Designed an Indic ASR recipe ablating on NVIDIA compute grant; released publicly as **Koyal**
- Developed a causal speaker linker for streaming diarization models that lifts its **4**-speaker cap

Sony Research India — Bangalore

Deep Learning Intern — *May 2024 - December 2025*

- Transformer-based joint learning for language-agnostic speaker representations improved by **2.63**%.
- Generate synthetic data to train **KWS** systems for profanity detection in Hindi, Marathi and Bengali
- Trained, evaluated and maintained **ASR, VAD and diarization** systems for Indian languages.
- Developed a pipeline for **Netflix** standard subtitle generator using recurrent models for long form audio
- Probe layers of whisper encoder to develop **segment-wise dynamic switching** of layers using attention along with multi-objective **knowledge distillation** for **hallucination** mitigation in noisy audios.
- Benchmark and compare APIs on low-resource Indian languages for speech recognition and diarization

Begin AI

Intern Machine Learning Engineer — *Dec 2021 - June 2022*

- Conducted R&D on **voice cloning** using GAN-based architectures, enhancing voice synthesis quality.
- Implemented federated learning models for decentralized data processing across **44,000** speech samples.
- Developed ML-based recommendation systems, fake profile detection and voice cloning algorithms.

Bosch

Computer Vision Research Intern — *June 2022 - September 2022*

- Research on anomaly detection, achieving **94**% accuracy on a proprietary dataset of **2M+** images.
- Applied self-supervised learning methods to generate embeddings, improving segmentation accuracy.

Research Experience and Internships

Sentiment Analysis Interpretability (SAINT) — May 2023 - July 2023

Guide: Prof. Dr. Chris Biemann, Seid Muhie Yimam — *University of Hamburg*

- Interpretability of sentiment analysis models using token-level contributions in low-resource languages
- Devise a **data pipeline** for extracting keywords from a corpus of **COVID-19 vaccinatio**n tweets
- Use the keywords to scrape **10,000** tweets related to COVID-19 vaccination in **German** and **Kannada**
- Built linguistic resources for **German**, **Kannada**, **Amharic**, **Hausa**, and **Igbo** languages

Unsupervised Person Search — May 2023 - June 2023

Guide: Dr. Deepak Mishra — *IIST*

- Conducted comparative analysis of transformer-based vision models for **person search**.
- Reproduced results of supervised person search models achieving benchmark parity on **PRW** dataset.
- Developed a self-supervised clustering model (**DID**) with an accuracy of **92**% on the PRW dataset

Development of Linguistic Resources for Lambani — Feb 2023 - Dec 2023

Guide: Dr. Konjengbam Anand — *IIT Dharwad*

- Developed computational tools, corpus collection and linguistic technologies for **Lambani**
- Create **lexical corpora** for Lambani by collecting and translating text from various sources
- Designed a linguistic **tagset** and annotated **10,000**+ Lambani sentences, enabling research.
- Develop a **BERT+RNN** based POS tagger achieving an accuracy of **94.02%** on manual evaluation

Cross-lingual Phrase Retrieval — Jan 2023 - May 2023

Guide: Dr. Manu Madhavan — *IIIT Kottayam*

- Development of cross-lingual **Phrase Retrieval** techniques for low-resource Indian languages
- Collecting parallel data in 8 different indian languages for cross-lingual phrase retrieval
- Phrase retrieval in Neural Machine Translation for idioms across Indian Languages

Talks and Poster Presentations

- **ICASSP 2026**, Spain: presented *Windowed SummaryMixing* (May 2026)
- Hosted NLP workshop for **N-Large: NLP and Large Language Model** workshop at IIIT Kottayam
- **The Fourth Indian Symposium on Machine Learning (IndoML)**: *Cross-lingual Phrase Retrieval*
- **National Youth Conference on Indian Knowledge Systems:** *Development of Language Technologies for low-resource Indian Tribal Languages*
- **Cyber Security Roadshow, Indian Institute of Science (IISc):** Attack Prediction Using VICREG
- **Machine Learning Research School 2023:** *Natural Language Processing for Low-Resource Languages*
- **Argentine Symposium of Artificial Intelligence:** *Image Inpainting Applied to Art*

Achievements

- **1st place** on Diarization and ASR tracks (Phase 2) of the **DISPLACE 2026** challenge
- Open-sourced **Koyal** multilingual Indic ASR models
- Winner of **Manthan 2021**, India's first hackathon on national security by **BPR&D & AICTE**
- Finalist of **Smart India Hackathon SIH:2022**, India's largest hackathon for **2** problem statements
- **#9** Worldwide among **65,000+** Hackers, Major League Hacking LHD: Share 2021
- Winner (out of **600+** teams) in RU Hacks, Hack Tech and MLH: Uncommon Hacks
- Grade 2 Keyboard Certification from the London School of Music

Projects

AutoJoomer | *Pytorch, Flutter, Firebase, Javascript* December 2021

- An **open-source** chromium **browser extension** for students of IIIT K to join online classes on time.
- Mobile app for the students, loaded with features to make the college life simple.
- Auto-login to college wifi, notifications of upcoming assignments, events, calendar view and faculty details.
- Total of 26 contributors, **19 stars, 26 forks** and this repo also participated in **HacktoberFest** 2021

Dancefake | *Pytorch, Flutter, Firebase* August 2021

- App that lets users choose templates, click an image and create **deepfakes** of dance videos
- Pitched the product as a social media app to **Y Combinator** batch of Winter 2022, leading a team of 4
- Designed and launched the **social media** app where users are **3 clicks** away from recreating dance videos

Fingerprint liveliness detection | *Pytorch, Flask, Python, Firebase, Javascript* August 2022

- Trained a deep learning model on **LivDet** 2015 dataset with **1000** images to detect fake fingerprints
- Achieved an accuracy of **92%** on test set using patch CNNs and enabled **auth** for fingerprints
- Proposed **the idea** with heartbeat detection and liveliness detection to a panel of judges at **SIH Finals**

Academic Service

- **Reviewer:** AAAI 2026.
- **Program Committee:** Workshop on NLP and Large Language Model (N-Large).
- **Mentorship and Outreach:**
  - Mentor at Non-profits and hackathons: Command Tech, Hydrangea Hacks, LA Hacks, Ignition Hacks.
  - Guided students at international hackathons (MLH: Uncommon Hacks, RU Hacks, etc.).
  - Advocacy: Climate change awareness campaigns through posters, plays, and mimes.

Volunteering Experience and Hobbies

- **Mentor** at Technical Club **Beta Labs** of IIIT Kottayam, August 2022
- **Lead** at Machine Learning club in **Beta Labs** of IIIT Kottayam, August 2022
- Organiser of Apoorv 2023, the techno-cultural fest of IIIT Kottayam
- **Organizer** and developer, **Dhruva 2021**, **Technical Fest** of IIIT Kottayam, Oct 2021
- **Technical Lead** at Google Developers Student Club, Geeks for Geeks student chapter, IIIT Kottayam
- Held elected leadership roles through student voting (**House Captain & School Vice Captain**)