

Pradeep Rangappa

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📄 Google_scholar

🌐 LinkedIn

Career Objective

- Building a career with an organization where I can utilize my artificial intelligence (AI) educational skills and practical knowledge of taking AI systems to production, and help the organization grow and in general also make a positive contribution towards the growth of the society.

Education

Degree	Dept.	Year of Completion	Institution	Aggregate
Ph. D.	Computer Science and Engg.	2019	IIT Kharagpur	-
M. Tech.	Signal Processing	2014	Siddaganga Institute of Technology, Tumkur	CGPA 9.40/10
B. E.	Electronic & Communication Engg.	2012	Vivekananda Institute of Technology, Bangalore	77.22%

Skills

- Programming Languages: C, Shell Script, Python
- Tools & Web Frameworks: MATLAB, Jupyter, Git, Docker, VSCode, Django, FastAPI
- Operating Systems: Ubuntu, MacOS, Windows
- Cloud Frameworks: AWS (S3, EC2, SageMaker), Databricks, Snowflake
- ML & DL Frameworks: PyTorch, Hugging Face Transformers, Scikit-learn, pandas, matplotlib
- Speech Technology Tools: HTK, Kaldi, DeepSpeech (PyTorch), PyTorch-Kaldi, PyAnnote, k2/Icefall

Work Experience

- 2025 (Sep) – Present **Senior Speech Applied Scientist**, Omilia Natural Language Solutions, Greece.
 - Tech Lead in developing speech technologies for voice based food ordering applications
- 2023 (Sep) – 2025 (Aug) **Postdoctoral Researcher**, Idiap Research Institute, Martigny, Switzerland.
 - Designed a speaker diarization pipeline, optimized for long-duration calls (>5 hours), leveraging large-scale speech processing techniques (Joggl project)
 - Developed an efficient speech data selection framework to filter and prepare 10,000 hours of non-transcribed speech for ASR model training (Uniphore project)
 - Exploring SpeechLLMs for ASR through long-context modeling and domain-specific fine-tuning using text-only data (ongoing)
 - Proposed methods for analyzing non-content communication data to support criminal network identification (TRACY project)
- 2021 (Apr) – 2023 (Jan) **Senior Research Scientist**, Applied Research Dept., Swiggy, Bengaluru, India
 - Led development of an in-house ASR system for Hinglish speech using DeepSpeech-2 and Wav2Vec2 ($\approx 32\%$ WER)
 - Led DE fraud detection pipeline using ASR and NLP on Databricks; detected ≈ 300 cases/month, saving INR 12L/month
 - Reduced infrastructure costs by 60% and enabled stereo call recording nationwide

Work Experience (continued)

- 2020 (Jan) – 2021 (Apr) ■ **Research Scientist-II**, Applied Research Dept., Swiggy, Bengaluru, India
- Led partnerships for 20 hours of high-quality annotated speech data
 - Guided ASR system selection (Google, AWS, Mihup) for food domain optimization
 - Achieved 2nd place in InterSpeech-2020 challenge and built cost-effective fraud detection pipeline
- 2019 (July) – 2020 (Jan) ■ **AI Researcher**, Artivatic.ai, Bengaluru, India
- Led research and development in speech and voice domain applications
 - Delivered multilingual ASR and voice solutions for ICICI Prudential and Aditya Birla Insurance
 - Developed keyword spotting systems for customer interaction analysis

Awards and Achievements

- 2025 ■ Best Paper Award for our paper titled "Performance evaluation of SLAM-ASR: The Good, The Bad, The Ugly, and the Way Forward" in SALMA Workshop (ICASSP 2025)
- 2024 ■ Secured 4th position (out of 10) in the DISPLACE-2 speaker diarization challenge, special session in Interspeech-2024 [\[leaderboard\]](#)
- Delivered AI Industry Insights Session for 500+ students in collaboration with Masai School and IIT Ropar [\[link\]](#)
- Co-teaching "Machine Learning from the Industrial Applications Perspective" to fifth-year B.Tech students in the Electronics and Communication Engineering program at Siddaganga Institute of Technology.
- 2022-2024 ■ Board of studies member in the department of Electronics and Communication, Siddaganga Institute of Technology, Tumkur. [\[link\]](#)
- 2021 ■ Lead the Hackathon-2022 event organized within Swiggy and secured 3rd position for mapping Customer Sentiments from ASR and NLP solutions
- 2020 ■ Mentored the final year B.Tech students during the UKIERI (UK-Indian Education Research Initiative) programme (a virtual student mobility programme between the IIIT Sri City and Edinburgh Napier University UK) and secured first position for the spoken language identification problem.
- Lead the spoken language identification challenge organized by Microsoft for InterSpeech-2020 and secured 2nd position in the leaderboard. [\[link\]](#)
- 2017-19 ■ Awardee of Tata Consultancy Services Research Fellowship from 2017-2019.
- 2015-16 ■ Senior Scientific Officer (October 2014-October 2016) on DIT funded project on "Speech based access of Agricultural Commodity Price information retrieval for Indian languages-Phase 2".

Selected Publications

- **Pradeep R.**, Andrés C., Jeena P., Shashi K., Sergio B., Srikanth M., Esaú V.-T., Bidisha S., Petr M., Kadri H., Shankar, Saurabh V. and Andreas S., "Efficient Data Selection for Domain Adaptation of ASR Using Pseudo-Labels and Multi-Stage Filtering", INTERSPEECH 2025, Rotterdam (Accepted) [\[PDF\]](#)
- Andrés C., **Pradeep R.**, Jeena P., Shashi K., Sergio B., Srikanth M., Esaú V.-T., Bidisha S., Petr M., Kadri H., Shankar, Saurabh V. and Andreas S., "Better Semi-supervised Learning for Multi-domain ASR Through Incremental Retraining and Data Filtering", INTERSPEECH 2025, Rotterdam (Accepted) [\[PDF\]](#)

- **Pradeep R.**, Juan Z.-G., Srikanth M., Andrés C., Jeena P., Sergio B., Shashi K., Esaú V.-T., Nigmatulina I., Petr M., Karthik P. D. S. and Aravind G., "Speech Data Selection for Efficient ASR Fine-Tuning using Domain Classifier and Pseudo-Label Filtering", in Proc of the 50th IEEE International Conference on Acoustics, Speech, & Signal Processing (ICASSP) 2025, Hyderabad, India [\[PDF\]](#)
- Shashi K., Iuliia T., Sergio B., Esaú V.-T., Manjunath K. E., Kadri H., **Pradeep R.**, Petr M., Aravind G. and Andreas S., "Performance evaluation of SLAM-ASR: The Good, the Bad, the Ugly, and the Way Forward", in Proc of the 50th IEEE International Conference on Acoustics, Speech, & Signal Processing (ICASSP) 2025, Hyderabad, India [\[PDF\]](#)
- Iuliia T., Juan P. Z. G., Esaú V.-T., Shashi K., **Pradeep R.**, Sergio B., Petr M., Karthik P. D. S., Aravind G., "Fast Streaming Transducer ASR Prototyping via Knowledge Distillation with Whisper", 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP-2024 Findings), Miami, Florida, Sept, 2024. [\[PDF\]](#)
- **Pradeep R.**, Amanda M., Alejandra S. L., Petr M., Ioannis F., Nikos A., Manolis T. and Michaela A., "Detecting Criminal Networks via Non-Content Communication Data Analysis Techniques from the TRACY Project", 15th EAI International Conference on Digital Forensics & Cyber Crime, Dubrovnik, Croatia, Oct, 2024. [\[PDF\]](#)
- Petr M., Erinc D., Srikanth M., **Pradeep R.**, Miroslav J., Gerhard B., et al., "ROXSD: The ROXANNE Multimodal and Simulated Dataset for Advancing Criminal Investigations", Odyssey 2024: The Speaker and Language Recognition Workshop, Quebec, Canada, June, 2024 [\[PDF\]](#)
- Mrinmoy B., Nigmatulina I., Amrutha P., **Pradeep R.**, Srikanth M., Petr M., Hartmut H. and Matthias K., "Contextual Biasing Methods for Improving Rare Word Detection in Automatic Speech Recognition", in Proc of the 49th IEEE International Conference on Acoustics, Speech, & Signal Processing (ICASSP) 2024, Seoul, South Korea, 2024 [\[PDF\]](#)
- **Pradeep R.**, Brahma, A. K., Vayyavuru, V., Yadav, R., Misra, H., & Karuna, K. . Analysis of a Hinglish ASR System's Performance for Fraud Detection. In International Conference on Speech and Computer (SPECOM) (pp. 46-58), IIT Dharwad, India, November, 2023. [\[PDF\]](#)
- **Pradeep Rangan**, Sundeep Teki, and Hemant Misra. "Exploiting spectral augmentation for code-switched spoken language identification." arXiv preprint arXiv:2010.07130(2020), First Workshop on Speech Technologies for code-switching in Multilingual Communities, pp 36-40, 2020. (Satellite Workshop in InterSpeech-2020). [\[PDF\]](#)
- **Pradeep R.** and K S Rao, "Incorporation of Manner of Articulation Constraint in LSTM for Speech Recognition", Circuits, Systems and Signal Processing (CSSP), pp 1-19, February, 2019. [\[PDF\]](#)
- **Pradeep R.** and K S Rao, "Modifying LSTM Posteriors with Manner of Articulation Knowledge to Improve Speech Recognition Performance", 17th IEEE International Conference on Machine Learning and Applications (ICMLA), Orlando, USA, December, 2018. [\[PDF\]](#)
- **Pradeep R.** and K S Rao, "Manner of Articulation Based Split Lattices for Phoneme Recognition", 24th National Conference on Communications (NCC-2018) , IIT Hyderabad, India, February, 2018. [\[PDF\]](#)

Areas of Interest

- Speech Technology: Automatic Speech Recognition, Speaker Diarization, Spoken Language Identification, Voice sentiment analysis
- Implementing and deploying the downstream use cases of speech technologies into production at scale
- Natural Language Processing
- Stakeholder Management

- Digital Electronics

Hobbies

- Playing Badminton
- Cooking
- Yoga

DECLARATION

I hereby declare that the above information given is correct and true to the best of my knowledge.
Place: Bengaluru, India