Mr. Amit Meghanani

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Education

National Institute of Technology, Silchar   *Assam, India*
Bachelor of Technology (B.Tech) in Electronics & Communication Engineering   *July 2012 - May 2016*

Indian Institute of Science (IISc)   *Bangalore, India*
Master of Technology (Research) in System Science and Signal Processing , Electrical Engineering   *July 2017-June 2020*

Dept. of Computer Science, University of Sheffield, United Kingdom   *Sheffield, England*
PhD @ UKRI CDT in Speech and Language Technologies   *September 2021 - Present*

Research Interest

- Self-supervised learning for speech, disentangled speech representations, applied machine learning for speech and language.

Skills

Languages Python, C++, C
ML/DL Tools PyTorch, SpeechBrain, S3PRL Toolkit
Courses Pattern Recognition and Neural Networks, Natural Language Processing with Python, Speech Information Processing, Machine Learning and Adaptive Intelligence, Stochastic Models and Applications, Computational Methods of Optimization.

Experience

Dept. of Computer Science, University of Sheffield, UK   *Sheffield, UK*
PhD @ UKRI CDT in Speech and Language Technologies   *Sep. 2021 - Present*
- **PhD Project:** Working on disentangled speech representations, cost-effective self-supervised fine-tuning for task-specific speech representations, acoustic word/sub-word embeddings.
- **Course work:** Completed course work on Machine learning, speech and text processing. Additionally, completed a mini project on "Oral History" which involves implementation of various speech tech blocks like ASR and Speaker Diarisation.
- **Teaching Assitant:** Worked as a graduate teaching assistant for courses offered in the department of computer science: machine learning and adaptive intelligence, speech processing.

Publicis Sapient   *Bangalore, India*
Senior Associate - Data Science: Full time role   *Nov. 2020 - Aug. 2021*
- Worked on movie recommendation systems.
- Tweet engagement project: predict the expected favorites/retweets for a new tweet of a target Twitter handle, given the historical tweet data.

Indian Institute of Science   *Bangalore, India*
Project Associate   *Aug 2020 - November 2020*
- Alzheimer's dementia recognition from the spontaneous speech and corresponding transcribed text
- End-to-end automatic speech recognition system for low resource Indian languages (Hindi) using "wav2letter" toolkit.

Indian Institute of Science   *Bangalore, India*
Master of Technology (Research)   *July 2017 - June 2020*
- Thesis: Pitch-synchronous Discrete Cosine Transform Features for Speaker Recognition and Other Applications.

Mindtree   *Bangalore, India*
Machine Learning Intern   *May. 2019 - Jul. 2019*
- Incorporating inference of the models (Encode-Decoder and attention based architectures) with the external memory (knowledge base) based on the contextual information in it.

Publications

- SCORE: Self-supervised Correspondence Fine-tuning for Improved Content Representations, accepted at ICASSP-2024.
- Improving Acoustic Word Embeddings through Correspondence Training of Self-supervised Speech Representations, accepted at EACL 2024.
- Deriving Translational Acoustic Sub-word Embeddings. Proceedings of the IEEE Workshop on Automatic Speech Recognition and Understanding (ASRU 2023), Taipei, Taiwan, December 16-20 2023.
- An Exploration of MFCC and Log-Mel Spectrogram Features For Alzheimer'S Dementia Recognition From Spontaneous Speech, IEEE Spoken Language Technology Workshop (SLT 2021).
- Recognition of Alzheimer's Dementia From the Transcriptions of Spontaneous Speech Using FastText and CNN Models, Frontiers in Computer Science Journal (March 2021).
- Pitch-synchronous Discrete Cosine Transform Features for Speaker Identification and Verification, published in International Conference on Pattern Recognition Applications and Methods (ICPRAM-2020).