

# Ankita Pasad

PH.D. CANDIDATE, TTIC



## INTERESTS

Speech foundation models, spoken language understanding, multi-modal speech modeling.

## EDUCATION

### Toyota Technological Institute at Chicago (TTIC), Illinois, USA

MS, Computer Science 2019

Ph.D. Candidate, Computer Science Aug 2024 (expected)

Advisor: Prof. Karen Livescu

### Indian Institute of Technology Bombay (IITB), Mumbai, India

Dual Degree, Bachelor & Master of Technology, Electrical Engineering 2017

Specialization: Communication and Signal Processing

M.Tech Advisor: Prof. Preeti Rao

## INDUSTRY EXPERIENCE

### Research Intern at ASAPP

Summer 2021

Supervisors: Kyu Han, Suwon Shon, Felix Wu, Prof. Karen Livescu

- Spoken language understanding (SLU) tasks and the SLUE benchmark [1].

### Research Intern at Google Research

Fall 2019

*Offered returning research internship*

Supervisors: Ariel Gordon, Tsung-Yi Lin, Anelia Angelova

- Semi-supervised semantic segmentation by leveraging unlabelled videos.

### Design Engineer at Texas Instruments (TI)

Summer 2015

*Awarded a pre-placement offer to rejoin TI*

Supervisor: Ashwin Ramachandran

- Signal processing to reduce electromagnetic interference in ethernet transceiver.

## PUBLICATIONS

What Do Self-Supervised Speech Models Know About Words?

**A. Pasad**, C-M. Chien, S. Settle, K. Livescu

TACL 2024

SLUE-PERB: A Spoken Language Understanding Performance Benchmark and Toolkit

S. Arora, R. Sharma, **A. Pasad**, H. Dharmyal, W. Chen, S. Shon, H-Y. Lee, K. Livescu, S. Watanabe

SPARKS Workshop, ASRU 2023

SLUE Phase-2: A Benchmark Suite of Diverse Spoken Language Understanding Tasks

S. Shon, S. Arora\*, C. Lin\*, **A. Pasad\***, F. Wu, R. Sharma, W. Wu, H. Lee, K. Livescu, S. Watanabe

ACL 2023

Comparative Layer-Wise Analysis of Self-Supervised Speech Models

**A. Pasad**, B. Shi, K. Livescu

ICASSP 2023

Hidden State Variability of Pre-trained Language Models Can Guide Computation Reduction for Transfer Learning

S. Xie, J. Qiu, **A. Pasad**, L. Du, Q. Qu, H. Mei

Findings of EMNLP 2022

On the Use of External Data for Spoken Named Entity Recognition

**A. Pasad**, F. Wu, S. Shon, K. Livescu, K. Han

NAACL 2022

SLUE: New Benchmark Tasks for Spoken Language Understanding Evaluation on Natural Speech

S. Shon, **A. Pasad**, F. Wu, P. Brusco, Y. Artzi, K. Livescu, K. J. Han

ICASSP 2021

Layer-Wise Analysis of a Self-Supervised Speech Representation Model

**A. Pasad**, J-C. Chou, K. Livescu

ASRU 2021

Improving Semantic Segmentation through Spatio-Temporal Consistency Learned from Videos

**A. Pasad**, A. Gordon, T-Y. Li, A. Angelova

Workshop on Learning from Unlabeled Videos, CVPR 2020

On the Contributions of Visual and Textual Supervision in Low-Resource Semantic Speech Retrieval

**A. Pasad**, B. Shi, H. Kamper, K. Livescu

Interspeech 2019

Voice Activity Detection for Children's Read Speech Recognition in Noisy Conditions

**A. Pasad**, K. Sabu, P. Rao

National Conference on Communications, 2017

## THESES

Voice Activity Detection for Children's Read Speech Assessment in Noisy Conditions

M.Tech Thesis, 2017 [2]

## TECHNICAL SKILLS

Proficient: Python, PyTorch, Fairseq

Intermediate: Bash, Hugging Face, ESPNET, S3PRL

## LANGUAGES

Proficient: English, Hindi, Kutchi

Intermediate: Marathi, Gujarati

## ACHIEVEMENTS

Thesis research selected for ICASSP Rising Star in Signal Processing Workshop 2023

Best Poster Award, TTIC student workshop 2021

Institute Academic Award, rank 2<sup>nd</sup> (out of 70), Electrical Engineering, IITB 2016

All India rank of 328 amongst 1.1 million candidates in IIT-JEE 2012

Amongst national top 1% students in National Physics Olympiad 2012

Amongst national top 1% students in National Astronomy Olympiad (Sr.) 2012

Amongst top 35 students nationwide for National Astronomy Olympiad (Jr.) 2009

## SERVICE

Reviewer: ACL, EMNLP, ICASSP, Interspeech, SLT

- Awarded "Outstanding Reviewer Recognition" for ICASSP 2023

Organizer, Speech and Language Discussion Meet-ups, TTIC 2023-24

Co-organizer, Women at TTIC 2019-22

Peer-mentor for first-year Ph.D. students, TTIC 2019-20

Panelist, Young Female Researchers in Speech Science & Technology, Interspeech 2018

Department Academic Mentor, IITB 2016-17

Volunteer, Abhyasika, an initiative to educate underprivileged kids 2014-15

Co-organizer, Institute Electronics Club, IITB 2014-15

- Awarded "Institute Organization Special Mention" (0.25% of 10,000)

## TEACHING ASSISTANCE

Speech Technologies | Prof. Karen Livescu, TTIC Spring 2020

- Awarded "Outstanding TA" recognition

Speech Processing | Prof. Preeti Rao, IITB Spring 2017

Advanced Signal Processing | Prof. Rajbabu Velmurugan, IITB Fall 2016

## RELEVANT COURSEWORK

Statistical Machine Learning, Deep Learning, Unsupervised Learning, Speech Technologies, Natural Language Processing, Advanced Natural Language Processing, Adaptive Signal Processing, Image Processing, Computer Vision