Ankita Pasad

Ph.D. Candidate   Google Scholar ✉ in

Research Interests

Analysis of self-supervised speech models with applications to efficient fine-tuning and spoken language understanding. I have also worked on semi-supervised learning and visually grounded speech modeling.

Education

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

MS, Computer Science   *Sep '17-Aug '19*
Ph.D. Candidate, Computer Science   *Sep '19-Present*
Advisor: Prof. Karen Livescu
CGPA: 3.97/4.00

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

Dual Degree, Bachelor & Master of Technology, Electrical Engineering   *Jul '12-Jun '17*
Specialization: Communication and Signal Processing
M.Tech Advisor: Prof. Preeti Rao
CGPA: 8.8/10.0

Industry Experience

Research Intern at ASAPP | *Manager: Kyu Han*   *Jul-Oct '21*
Collaborators: Suwon Shon, Felix Wu, Prof. Karen Livescu
Ongoing collaboration
- Prepared Spoken Language Understanding Evaluation (SLUE) benchmark, published in ICASSP 2021.
- Improved spoken named entity recognition by leveraging external unlabeled data, published in NAACL 2022.

Research Intern at Google Research | *Manager: Ariel Gordon*   *Oct '19-Jan '20*
Collaborators: Tsung-Yi Lin, Anelia Angelova
Offered returning research internship
- Improved semantic segmentation by leveraging unlabelled videos, published in LUV workshop, CVPR 2020.

Design Engineer at Texas Instruments (TI) | *Manager: Ashwin Ramachandran*   *May-Jul '15*
Awarded a pre-placement offer to rejoin TI based on my performance
- Designed effective methods to reduce the Electromagnetic Interference in Ethernet Transceiver

Selected Publications

- A. Pasad, B. Shi, K. Livescu, "Comparative layer-wise analysis of self-supervised speech models", *ICASSP, 2023*
- A. Pasad, F. Wu, S. Shon, K. Livescu, K. Han, "On the use of external data for spoken named entity recognition", *NAACL, 2022*
- S. Shon, A. Pasad, F. Wu, P. Brusco, Y. Artzi, K. Livescu, K. J. Han, "SLUE: New benchmark tasks for spoken language understanding evaluation on natural speech", *ICASSP, 2021*
- A. Pasad, J.C Chou, K. Livescu, "Layer-wise Analysis of a self-supervised speech representation model", *ASRU, 2021*
- A. Pasad, A. Gordon, T. Y. Li, A. Angelova, "Improving semantic segmentation through spatio-temporal consistency Learned from videos", *Workshop on Learning from Unlabeled Videos, CVPR, 2020*
- A. Pasad, B. Shi, H. Kamper, K. Livescu, "On the contributions of visual and textual supervision in low-resource semantic speech retrieval", *Interspeech 2019*

Previous Research

Dialog Act Tagging on Speech | *Guide: Prof. Karen Livescu (TTIC) | code recipe*   *2018*

Collaborative Story Generation | *Guide: Prof. Niranjan Balasubramanian (Stony Brook University)*   *2018*
- Team project for the *hackathon on collaborative writing system.*   *(code recipe)*

Topic Identification on Spoken Documents | *Guide: Prof. Karen Livescu (TTIC) | code recipe*   *2018*

Automatic Assessment of Children's Read Speech | *Guide: Prof. Preeti Rao (IITB)*   *2016-2017*
- Developed a read speech English (L2) corpus and devised a speech activity detection pre-processing unit that improved children's speech recognition in noisy conditions   *M.Tech Thesis*

Technical and Language Skills

Proficient	Python, PyTorch, Fairseq	English, Hindi, Kutchi
Intermediate	Hugging Face, Bash	Marathi, Gujarati
Beginner	C++	Japanese

Teaching

Graduate Teaching Assistant | *Speech Technologies* | *Prof. Karen Livescu*   *Mar-Jun '20*
- *Received the "Outstanding TA" award*

Graduate Teaching Assistant | *Speech Processing* | *Prof. Preeti Rao*   *Jan-May '17*
Graduate Teaching Assistant | *Advanced Signal Processing* | *Prof. Rajbabu Velmurugan*   *Apr-Nov '16*

Service

Reviewer: EMNLP, SLT, Interspeech, ICASSP

Co-organizer, Women at TTIC, 2019-2022

Peer-mentor for the first year Ph.D. students at TTIC, 2019-2020

Panelist, Young Female Researchers in Speech Science & Technology (YFRSW), 2018

Department Academic Mentor, 2016-17, IITB

Volunteer, Abhyasika, an initiative to educate underprivileged kids, 2014, IITB

Co-leader, Institute Electronics Club, 2014-15, IITB
- *Awarded "Institute Organization Special Mention" (0.25% of 10,000)*

Scholastic Achievements

Honors
- Best Poster Award, TTIC student workshop, 2021   *2021*
- Institute Academic Award, rank 2nd (out of 70), Electrical Engineering, IITB   *2016*

Olympiads and Competitive Exams
- Secured an 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 *Indian National Astronomy Olympiad (Jr.)*   *2009*

National Level Scholarships
- Awarded KVPY Scholarship by Gov. of India, ranked 160 out of 29,371   *2012*
- Awarded NTSE Scholarship by NCERT, Gov. of India, amongst nation's top 750 students   *2008*

Relevant coursework

Statistical Machine Learning (A), Deep Learning (A), Unsupervised Learning (A), Speech Technologies (A+), Natural Language Processing (A), Advanced Natural Language Processing (A), Adaptive Signal Processing (A-), Image Processing (A-), Computer Vision (A)