

# Sanket Shah

Pre-doctoral Research Fellow  
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## EDUCATION

- **International Institute of Information Technology - Hyderabad** 2014 - 2019  
*B.Tech and MS by Research in Computer Science*  
Advisor: Prof. Nita Parekh CGPA: 9/10

## RESEARCH EXPERIENCE

- **Salesken AI - Senior Research Scientist** July 2021 - present  
Handled research and development for various projects related to Semantic Similarity, Conversational Dialogue Act Prediction, Product Feature Extraction, text-to-text Translation and text summarization. This included training ML models from scratch, designing evaluation strategies and optimizing & re-structuring the code for final deployment.
- **Microsoft Research India - Research Fellow (Speech and NLP Group)** July 2019 - June 2021  
Advisors: Dr. Sunayana Sitaram  
Worked on the problem of Automatic Speech Recognition (ASR) for multilingual and code-switched conversational speech.
- **Microsoft Research India - Research Intern (Speech and NLP Group)** Jan 2019 - June 2019  
Advisors: Dr. Sunayana Sitaram  
developed a system to detect spoken terms in a conversation. Also, Developed a tool for easing the process of transcribing code-switched speech.
- **Indian Institute of Science - Research Intern at MALL Lab, IISc** May 2018 - September 2018  
Advisors: Prof. Partha Pratim Talukdar  
Worked on problem of entity linking in knowledge graphs and text based question-answering.

## PUBLICATIONS

### Preprints

\* - equal contribution

3. **Curriculum Learning for Adapting Models on Code-Mixed Data in Emotion Recognition**  
Dheeraj Agrawal, Sanket Sanjay Shah, Neeru Dubey, Shubham Sharma, Bharatram Natarajan, Suvro Banerjee and Ashish Kumar  
*Under Review, COLING 2022*
2. **Learning to Recognize Code-switched Speech Without Forgetting Monolingual Speech Recognition.**  
Sanket Shah, Basil Abraham, Gurunath Reddy M, Sunayana Sitaram, Vikas Joshi  
*arXiv:2007.02519, 2020.*
1. **Cross-lingual and Multilingual Spoken Term Detection for Low-Resource Indian Languages.**  
Sanket Shah, Satarupa Guha, Simran Khanuja, Sunayana Sitaram  
*arXiv:2007.02519, 2020.*

### Conference Publications

7. **Multilingual and code-switching ASR challenges for low resource Indian languages**  
Anuj Diwan, Rakesh Vaideeswaran, Sanket Shah, Ankita Singh, Srinivasa Raghavan, Shreya Khare, Vinit Unni, Saurabh Vyas, Akash Rajpuria, Chiranjeevi Yarra, Ashish Mittal, Prasanta Kumar Ghosh, Preethi Jyothi, Kalika Bali, Vivek Seshadri, Sunayana Sitaram, Samarth Bharadwaj, Jai Nanavati, Raoul Nanavati, Karthik Sankaranarayanan, Tejaswi Seeram, Basil Abraham  
*Interspeech 2021.*
6. **Learning not to Discriminate: Task Agnostic Learning for Improving Monolingual and Code-switched Speech Recognition**  
Gurunath Reddy, Sanket Shah, Basil Abraham, Vikas Joshi, Sunayana Sitaram.  
*Workshop on Speech Technologies for Code-switching in Multilingual Communities (WSTCSMC), 2020*
5. **First Workshop on Speech Processing for Code-switching in Multilingual Communities: Shared Task on Code-switched Spoken Language Identification.**  
Sanket Shah, Sunayana Sitaram, Rupeshkumar Mehta.  
*First Workshop on Speech Processing for Code-switching in Multilingual Communities (WSTCSMC), 2020.*

4. **Unsung Challenges of Building and Deploying Language Technologies for Low Resource Language Communities.**  
Pratik Joshi, Christain Barnes, Sebastin Santy, Simran Khanuja, **Sanket Shah**, Anirudh Srinivasan, Satwik Bhat-tamishra, Sunayana Sitaram, Monojit Choudhury, Kalika Bali.  
*International Conference on Natural Language Processing (ICON)*, 2019.
3. **Using monolingual speech recognition for spoken term detection in code-switched hindi-english speech.**  
**Sanket Shah**, Sunayana Sitaram  
*International Conference on Data Mining Workshops (ICDMW)*, 2019 .
2. **CoSSAT: Code-Switched Speech Annotation Tool.**  
**Sanket Shah**, Pratik Joshi, Sebastin Santy, Sunayana Sitaram  
*Workshop on Aggregating and Analysing Crowdsourced Annotations for NLP(EMNLP)*, 2019 (Long Oral).
1. **Kvqa: Knowledge-aware visual question answering.**  
**Sanket Shah**, Anand Mishra, Naganand Yadati, Partha Pratim Talukdar.  
*Association for the Advancement of Artificial Intelligence (AAAI)*, 2019.

## SELECTED RESEARCH PROJECTS

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### Learning Without Forgetting for Code-switched Speech Recognition

Feb 2020 - Present

Advisor: Dr. Sunayana Sitaram, *Microsoft Research India*

- Proposed 'Learning Without Forgetting' technique for code-switched speech recognition system.
- Effectively adapting large speech recognition systems to perform well on code-switched speech.

### Learning not to Discriminate - Task Agnostic Learning for monolingual and Code-switched Speech Recognition

Feb 2020 - Present

Advisor: Dr. Sunayana Sitaram *Microsoft Research India*

- Proposed an adversarial multi-task framework for monolingual and code-switched speech recognition.
- Showed that it is important to train shared parameters which are task agnostic for best performance on all the tasks during multi-task learning.

### Shared task on Code-switched Spoken Language Identification at the First Workshop on Speech Processing for Code-switching

Feb 2020 - Present

Advisor: Dr. Sunayana Sitaram *Microsoft Research India*

- Member of the shared task organizing committee at the First Workshop on Speech Processing for Code-switching.
- Involved in dataset creation, baseline generation and evaluating the models submitted by the participating teams.

### KVQA: Knowledge-aware Visual Question Answering

April 2018 - April 2019

Advisor: Prof. Partha Pratim Talukdar *Microsoft Research India*

- Proposed the largest dataset for VQA over KG (as on November 14, 2018).
- An important but unexplored problem of VQA involving named entities in an image.
- Visual entity linking problem in web-scale.
- Challenges for Computer Vision: face identification at web-scale.
- Challenges for NLP: reasoning over KG.

## SELECTED AWARDS AND HONORS

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- IIIT Hyderabad & Microsoft Research Travel Grant to attend **AAAI '19** 2019

## PROFESSIONAL RESPONSIBILITIES

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- *Undergraduate Teaching Assistantship* - Computer Science and Engineering, IIIT Hyderabad
  - Computer Programming - *Prof. Vineet Gandhi., Prof. Praveen Parchuri* Fall 2017
  - Data Structures and Algorithms - *Prof. Lini Thomas* Spring 2016
- *Member of Students' Parliament* - IIIT Hyderabad 2014 - 2019

## COURSES TAKEN

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- *Core Technical Courses:* Computer Programming, Data Structures & Algorithms, Artificial Intelligence, Formal Methods, Computer Networks, Natural Language Processing, Information Retrieval & Extraction, Statistical Methods in AI.

- *Core Systems Courses:* Database Systems, Operating Systems, Statistical Methods in AI, System & Network Security, Optimization Methods, System Design & Engineering.

## TECHNICAL SKILLS

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- **Programming Language:** c, c++, Python
- **Database Systems:** MySQL, PostgreSQL
- **Web Technologies:** HTML, CSS, PHP, JavaScript, jQuery, Django
- **Machine Learning / Data Science Tools:** NumPy, Pandas, Scikit-Learn, Matlab, Tensorflow, PyTorch