

# Shreekantha Nadig

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## EDUCATION

**MASTER OF SCIENCE BY RESEARCH - DATA SCIENCES | INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY - BANGALORE** Bengaluru, KA | Jan 2017 - Dec 2019  
GPA: 3.67/4

**BACHELOR OF ENGINEERING - TELECOMMUNICATION ENGINEERING | JAWAHARLAL NEHRU NATIONAL COLLEGE OF ENGINEERING** Shivamogga, KA | Aug 2011 - Jul 2015  
GPA: 75/100

## MS THESIS

**TOWARDS INCORPORATING EXTERNAL KNOWLEDGE IN ATTENTION-BASED END-TO-END MODELS FOR AUTOMATIC SPEECH RECOGNITION (FINAL STAGES OF SUBMISSION) | ESPNET, KALDI, PYTORCH, TENSORFLOW, KERAS, CLOUD COMPUTING** Bengaluru, KA | Jan 2017 – Dec 2019

- Developing state-of-the-art systems for end-to-end ASR using Joint CTC and Attention-based models
- Study how pure data-driven models can be blended with knowledge-based models for reducing model complexity, faster training/inference and extracting deeper insights into speech recognition
- Use of ASR toolkits like Kaldi, ESPnet with PyTorch and TensorFlow to build end-to-end ASR models
- Study of various Attention mechanisms and how they can be modelled efficiently for interpretability, explainability of end-to-end models.
- Multi-target hybrid CTC/Attention network for joint phoneme-grapheme recognition
- Improving performance and training time by incorporating alignments from GMM-HMM model into end-to-end Attention-based models

## PUBLICATIONS

- **Shreekantha Nadig**, V. Ramasubramanian, Sachit Rao. "Multi-target hybrid CTC-Attentional Decoder for joint phoneme-grapheme recognition," 2020 International Conference on Signal Processing and Communications (SPCOM), Bangalore, India, 2020
- **Shreekantha Nadig**, Sumit Chakraborty, Anuj Shah, Chaitanay Sharma, V. Ramasubramanian, Sachit Rao. "Jointly learning to align and transcribe using attention-based alignment and uncertainty-to-weight losses," 2020 International Conference on Signal Processing and Communications (SPCOM), Bangalore, India, 2020 (**Best Student Paper Award – Honorable Mention**)
- Abhijith Madan, Ayush Khopkar, **Shreekantha Nadig**, K. M. Srinivasa Raghavan, V. Ramasubramanian. "Semi-supervised learning for acoustic model retraining: Handling speech data with noisy transcript," 2020 International Conference on Signal Processing and Communications (SPCOM), Bangalore, India, 2020

## EXPERIENCE

**SPEECH RECOGNITION ENGINEER 2 | DIALPAD** Bengaluru, KA | Dec 2019 – Present

- Building End-to-end ASR systems and improving hybrid ASR systems on conversational data
- Building automated environments for end-to-end model development
- Developing techniques to improve ASR model performance in challenging environments
- Building APIs for model serving

**MACHINE LEARNING INTERN - ASR | OBSERVE.AI** Bengaluru, KA | May 2019 – Aug 2019

- Building End-to-end ASR systems with Joint CTC and Attention on large datasets
- kaldi style feature extraction in TensorFlow using tf.data
- Training a deep LSTM acoustic model with PyTorch
- Implementing different KWS papers - Deep-KWS, CTC KWS and deployment using TensorFlow serving

- MINRO Research Scholar | **ESPNET, KALDI, INDIAN LANGUAGES, CODE-MIXING**
  - Collecting and organizing speech data for various Indian languages
  - Building ASR models for Indian Languages in code-mixed scenarios
- Intel AI Academy Student Ambassador | **INTEL NCS, INTEL AI DEVCLOUD, ASR, TENSORFLOW**
  - Small-footprinting keyword spotting on-the-edge using Intel Neural Compute Stick 2
- Virtual lab for IIIT-B | **DJANGO, EMBEDDED C, HTML, CSS, JAVASCRIPT**
  - Developed an online remote lab for controlling and studying a control theory laboratory.
- Graduate Teaching Assistant | **IIIT-BANGALORE, NPTEL** Bengaluru, KA | Jan 2018 – Dec 2019
  - Deep Learning for Automatic Speech Recognition | **KALDI, PYTORCH, TENSORFLOW**
  - Automatic Speech Recognition | **KALDI, SCIKIT-LEARN, CLOUD COMPUTING**
  - Introduction to Robotics | **PYTHON, ROS, GAZEBO SIM**
  - Digital and the Everyday: from codes to cloud | **MOOC**

**SVT ENGINEER | SONUS NETWORKS**

Bengaluru, KA | Aug 2015 – Jan 2017

- Worked as a part of Sustaining SVT on Real-Time communication products Sonus Insight (EMS) and SBC
- Developed automated test frameworks in Python, Perl, Linux and Java
- Worked with CentOS, Red Hat Enterprise Linux and Solaris to develop and test the products
- Developed tools which reduced team effort from many hours to a couple of minutes
- Collaborated with overseas teams in testing/fixing the product for potential security breaches

**SKILLS**

<b>PROGRAMMING</b>	Python, JavaScript, Bash, C, C++
<b>LIBRARIES</b>	PyTorch, TensorFlow, scikit-learn, Django, OpenCV
<b>TOOLKITS</b>	Kaldi, ESPnet

**AWARDS****THIRD PRIZE JUINCUBATOR HACKATHON POWERED BY GMASA**

Bengaluru, KA | Jul 2017

Developed a web app "iCarto" - a serious game for urban planning

**FIRST PRIZE COMPUTER VISION BASED TOMATO CLASSIFIER PAPYRUS: IEEE-SJCE**

Mysuru, KA | Mar 2014

Presented our paper on a Computer Vision technique for classification and segregation of tomatoes based on ripeness level

**WORKSHOPS AND INVITED TALKS****NASSCOM ARTIFICIAL INTELLIGENCE - A WAY FORWARD**

DSCASC, Bengaluru, KA | Sep 2019

**TCS THINK LABS END-TO-END AUTOMATIC SPEECH RECOGNITION**

Bengaluru, KA | Feb 2019

**BMSCE ARTIFICIAL INTELLIGENCE AND DEEP NEURAL NETWORKS WORKSHOP**

Bengaluru, KA | Sep 2018

**CONFERENCES AND WORKSHOPS ATTENDED****NEURAL SYSTEMS - SCIENCE AND ENGINEERING**

IISc, Bengaluru, India | Jan 2019

**INTERSPEECH 2018**

Hyderabad, India | Sep 2018

**GOOGLE MLSLP WORKSHOP**

Hyderabad, India | Sep 2018

**SPEECH PROCESSING IN CHALLENGING ENVIRONMENTS (SPICE)**

IISc, Bengaluru, India | Sep 2018