

Aswin Shanmugam Subramanian

PhD Student, Johns Hopkins University

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Date Of Birth : 19-MAR-1991

EDUCATION

- September 2016 **Doctor of Philosophy.**
- till date Concentration: Electrical & Computer Engineering.
Johns Hopkins University, Baltimore, USA. <https://engineering.jhu.edu/ece/>
Advisor: Dr. Shinji Watanabe. <https://www.clsp.jhu.edu/faculty/shinji-watanabe/>
- September 2016 **Master of Science.**
- December 2017 Concentration: Electrical & Computer Engineering.
Johns Hopkins University, Baltimore, USA. <https://engineering.jhu.edu/ece/>
- December 2012 **Master of Science (by Research).**
- July 2015 Concentration: Computer Science & Engineering.
Indian Institute of Technology Madras, India. <http://www.cse.iitm.ac.in/>
Advisor: Dr. Hema A. Murthy. <http://www.cse.iitm.ac.in/~hema/>
Thesis: A Hybrid Approach to Segmentation
of Speech Using Signal Processing Cues and
Hidden Markov Models (July 2015). <http://lantana.tenet.res.in/thesis.php>
- August 2008 - **Bachelor of Technology.**
April 2012 Concentration: Information Technology.
Sri Sivasubramaniya Nadar (SSN) College of Engineering. <http://www.ssn.edu.in/>
Anna University, Chennai, Tamil Nadu, India.

PROFESSIONAL EXPERIENCE

- September 1, **Research Assistant, Johns Hopkins University, Baltimore, MD, USA.**
2017 - till date Center for Language & Speech Processing
○ Working with Dr. Shinji Watanabe on noise robust speech recognition, end-to-end speech
recognition, speech enhancement and source separation.
- May 20, 2019 - **NLP Research Intern, Tencent, Bellevue, WA, USA.**
August 23, 2019 AI Lab
○ Worked with Dr. Chao Weng and Dr. Dong Yu on target speech extraction with end-to-end
speech recognition objectives.
- May 21, 2018 - **Research Intern, NTT Communication Sciences Lab, Kyoto, Japan.**
August 17, 2018 Media Information Laboratory
○ Worked with Dr. Marc Delcroix on speaker and environment adaptation for end-to-end
noise robust speech recognition.
- July 20, 2015 - **Network Software Engineer, Data Center Group, Intel, Bangalore, India.**
August 12, 2016 Axxia network accelerators
○ IPv6 module.
○ Automation of performance benchmarks.

June 1, 2012 - **Project Associate, IIT Madras, Chennai, India.**

- July 13, 2015 Development of Text to Speech systems for Indian languages - sponsored by DeitY, Govt. of India.
- Was part of the TTS consortium that developed a common framework for HMM based speech synthesis systems of 13 Indian languages.
 - Developed an automatic segmentation tool for the TTS consortium.

TECHNICAL SKILLS

Programming Languages	C, C++, Java, C#, Shell, Perl, Tcl, HTML-CSS, MATLAB, Python	Toolkits	Kaldi, ESPnet, HTK, HTS, Festival, SPTK, IxNetwork
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RELEVANT COURSE WORK

- Audio Signal Processing
- Machine Translation
- Machine Learning for Signal Processing
- Wavelets & Filter Banks
- Information Extraction
- Parallel Programming

SELECTED PUBLICATIONS

<https://scholar.google.com/citations?user=yug24TgAAAAJ&hl=en>

- **Aswin Shanmugam Subramanian**, Chao Weng, Meng Yu, Shi-Xiong Zhang, Yong Xu, Shinji Watanabe and Dong Yu, "**Far-Field Location Guided Target Speech Extraction using End-to-End Speech Recognition Objectives**," accepted for publication in **ICASSP 2020**. [\[link\]](#)
- Yuya Fujita, **Aswin Shanmugam Subramanian**, Motoi Omachi, and Shinji Watanabe, "**Attention-based ASR with Lightweight and Dynamic Convolutions**," accepted for publication in **ICASSP 2020**.
- **Aswin Shanmugam Subramanian**, Xiaofei Wang, Murali Karthick Baskar, Shinji Watanabe, Toru Taniguchi, Dung Tran, and Yuya Fujita, "**Speech Enhancement Using End-to-End Speech Recognition Objectives**," in Proc. of **WASPAA 2019**, pp. 229–233, New Paltz, Oct' 19. [\[link\]](#)
- Toru Taniguchi, **Aswin Shanmugam Subramanian**, Xiaofei Wang, Dung Tran, Yuya Fujita, and Shinji Watanabe, "**Generalized Weighted-Prediction-Error Dereverberation with Varying Source Priors for Reverberant Speech Recognition**," in Proc. of **WASPAA 2019**, pp. 288–292, New Paltz, Oct' 19. [\[link\]](#)
- **Aswin Shanmugam Subramanian**, Szu-Jui Chen, and Shinji Watanabe, "**Student-Teacher Learning for BLSTM Mask-based Speech Enhancement**," in Proc. of **INTERSPEECH 2018**, pp. 3249–3253, Hyderabad, Sep' 18. [\[link\]](#)
- Szu-Jui Chen, **Aswin Shanmugam Subramanian**, Hainan Xu, and Shinji Watanabe, "**Building state-of-the-art distant speech recognition using the CHiME-4 challenge with a setup of speech enhancement baseline**," in Proc. of **INTERSPEECH 2018**, pp. 1571–1575, Hyderabad, Sep' 18. [\[link\]](#)
- Naoyuki Kanda, Rintaro Ikeshita, Shota Horiguchi, Yusuke Fujita, Kenji Nagamatsu, Xiaofei Wang, Vimal Manohar, Nelson Enrique Yalta Soplin, Matthew Maciejewski, Szu-Jui Chen, **Aswin Shanmugam Subramanian**, Ruizhi Li, Zhiqi Wang, Jason Naradowsky, L Paola Garcia-Perera, and Gregory Sell, "**The Hitachi/JHU CHiME-5 system: Advances in speech recognition for everyday home environments using multiple microphone arrays**," in Proc. of **CHiME5 Workshop**, Hyderabad, Sep' 18. [\[link\]](#)
- **S Aswin Shanmugam**, and Hema Murthy, "**A Hybrid Approach to Segmentation of Speech Using Group Delay Processing and HMM Based Embedded Reestimation**," in Proc. of **INTERSPEECH 2014**, pp. 1648–1652, Singapore, Sep' 14. [\[link\]](#)

TEACHING EXPERIENCE

Fall '17 & '18 **Course Assistant, Digital Signal Processing**, Johns Hopkins University.

Spring '18 - '20 **Course Assistant, Information Extraction from Speech and Text**, Johns Hopkins University.