AKSHAY CHANDRASHEKARAN

Carnegie Mellon University
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EDUCATION

Carnegie Mellon University *Advisor: Prof. Ian Lane* — Moffett Field, CA
PhD. Candidate in Electrical and Computer Engineering, GPA: 3.64/4.0 — *Jan 2012 - Present*

Carnegie Mellon University — Pittsburgh, PA
M.S. in Electrical and Computer Engineering, GPA: 3.63/4.00 — *Aug-2011- Dec 2011*

Vishwakarma Institute of Technology — Pune, India
B.E. in Electronics and Telecommunication, CPA: 8.1/10 — *Aug 2006 - May 2010*

Research Interests
My research interests include automated multi-objective optimization of hyper-parameters, and speech recognition on embedded platforms

RESEARCH EXPERIENCE

Carnegie Mellon University Silicon Valley — Moffett Field, CA
PhD. Candidate — *Jan 2012 - Present*

- Currently working on Automated Multi-objective hyper-parameter optimization for speech recognition.
- Working on development and analysis of methods to utilize validation curves from previous hyper-parameter configurations to predict the terminal performance of the current configuration.
- Worked on development of a hierarchical optimization technique for feature, model and decoder hyper-parameters to jointly optimize towards word error rate and computational efficiency.
- Worked on speech recognition for low resource languages.
- Worked on Speech recognition on mobile and embedded platforms.
- Developed Deep Neural Network Acoustic models for Android Platform using openCL.
- Developed LSTM Acoustic model implementations using openCL.

Baidu SVAIL — Sunnyvale, CA
Research Intern — *May 2016 - Aug 2016*

- Worked on importance sampling-based data sampling techniques to improve training time for speech recognition.

Lenovo — San Jose, CA
Research Intern — *Oct 2013 - June 2014*

- Developed a software framework for multi-modal interaction for applications in mobile devices.
- Co-inventor in three resultant patents.

Carnegie Mellon University — Pittsburgh, PA
Graduate Assistant — *Jan 2011 - Dec 2011*

- Researched on imagined speech classification using Electro-Encephalogram (EEG) signals

Carnegie Mellon University — Pittsburgh, PA
Graduate Assistant — *Aug 2010 - Dec 2010*

- Synaptic Bouton detection from images of visual cortex of a tree shrew.

PATENTS

1. Multi-Modal Fusion Engine (2014)
2. Selecting Multimodal Elements (2014)
3. Identification of User Input Within an Application (2014)

PUBLICATIONS

1. A. Chandrashekaran, I. Lane, "*Hierarchical Constrained Bayesian Optimization for Feature, Acoustic Model and Decoder Parameter Optimization*", Interspeech 2017 (submitted).
2. A. Chandrashekaran, I. Lane, "*Automated optimization of decoder hyper-parameters for online LVCSR*", Spoken Language Technologies Workshop (SLT 2016).
3. A. Chandrashekaran, I. Lane, "*Automated Feature and Model Optimization for Task-specific Acoustic Models*", BayLearn 2015 (Poster).
4. D. Cohen, A. Chandrashekaran, I. Lane, A. Raux, "*The hri-cmu corpus of situated in-car interactions.*", Proceedings for International Workshop Series on Spoken Dialogue Systems Technology (IWSDS 2014).
5. I. Lane, V. Prasad, G. Sinha, A. Umuhoza, S. Luo, A. Chandrashekaran, A. Raux, "*HRItk: the human-robot interaction ToolKit rapid development of speech-centric interactive systems in ROS.*" NAACL-HLT Workshop on Future Directions and Needs in the Spoken Dialog Community: Tools and Data (NAACL-HLT 2012). Association for Computational Linguistics.

TEACHING

How to write Fast Code Spring 2015, Spring 2016

· Lead TA for openMP and SIMD sections of 18645-How to write fast code course

CONTESTS AND AWARDS

· Emirates Travel Hackathon 2013 Winner in the best windows phone app category.
· NestGSV Hackathon 2014 Vuzix Glass Winner.

OTHER ACTIVITIES

· Member of Eta Kappa Nu since Jan 2011.
· Chair-person for ECE Graduate Organization, Silicon Valley Branch from Aug 2012 to July 2013.
· Committee Member of Master's Advisory Council at Carnegie Mellon University from Jan 2011 to Dec 2011.
· Executive Committee Member for IEEE Student Branch in Vishwakarma Institute of Technology from 2008-2009.
· Member of Editorial Board for the college magazine at Vishwakarma Institute of Technology from 2008-2010.

PERSONAL ATTRIBUTES

· Programming Languages: C, C++, Python, Java, Matlab, CUDA, and OpenCL.
· Proficient in the usage of Kaldi Speech recognition toolkit.
· Proficient in Android Development.
· Fluent in English, Tamil, Hindi, and Marathi.
· I enjoy long distance running, hiking, reading, soccer, and playing the guitar and ukelele.