

Siddharth Sigtia

sidsigtia@apple.com
+44-7453-744464
Apple, London
www.eecs.qmul.ac.uk/~sss31

RESEARCH INTERESTS

Machine Learning, Neural Networks, Music Information Retrieval, Speech Recognition.

EDUCATION

Queen Mary University of London, UK **September 2012-Present**

Doctor of Philosophy candidate in Electronics Engineering

- Deep neural networks for Music Information Retrieval
- Supervisor: Simon Dixon

Birla Institute of Technology and Science Pilani, Goa, India

Master of Science Physics, Bachelor of Engineering Electrical and Electronics Engineering

August 2007-July 2012

- Dual Degree in Physics and Electrical and Electronics Engineering with a year- long industrial placement.
- GPA: 9.36/10

PUBLICATIONS

Sigtia, S., Stark, A., Krstulovic, S., Plumbley, M. “Automatic Environmental Sound Recognition: Performance versus Computational Cost”, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 24, no. 11, pp. 2096-2107, Nov 2016

Sigtia, S., Benetos, E., Dixon, S. “An End-to-End Neural Network for Polyphonic Piano Music Transcription”, *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 24, no. 5, pp. 927-939, May 2016

Foster, P., Sigtia, S., Krstulovic, S., Barker, J. and Plumbley, M. “Chime-Home: A Dataset for Sound Source Recognition in a Domestic Environment”, *Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, 2015

Sigtia, S., Boulanger-Lewandowski, N. and Dixon, S. “Audio Chord Recognition with a Hybrid Neural Network”, *16th International Society for Music Information Retrieval (ISMIR)*, 2015.

Sigtia, S., Benetos, E., Boulanger-Lewandowski, N., Weyde, T., Garcez, A. and Dixon, S. “A Hybrid Recurrent Neural Network for Music Transcription”, *Proceedings of the 40th International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2015

Sigtia, S., Benetos, E., Cherla, S., Weyde, T., Garcez, A. and Dixon, S. “An RNN-based Music Language Model for Improving Automatic Music Transcription”, *15th International Society for Music Information Retrieval (ISMIR)*, 2014.

Sigtia, S. and Dixon, S., “Improved Music Feature Learning With Deep Neural Networks”, *Proceedings of the 39th International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2014.

RESEARCH
EXPERIENCE

Siri Speech, Apple, UK **September 2016-Present**

Senior Research and Development Engineer

- Acoustic Modelling for speech recognition with neural networks.

Apple Inc, Cupertino, USA

Research Intern, Siri Speech

- Acoustic modelling for keyword spotting with neural networks.
- Advisor: John Bridle

Audio Analytic, Cambridge, UK

August 2014-August 2015

Research Assistant

- Auditory scene analysis and event detection for environmental sounds with neural networks.
- Advisors: Sacha Krstulovic, Mark Plumbley

City University, London, UK

April 2014-August 2014

Research Assistant

- A Deep Neural Network based framework for Music Transcription
- Advisors: Emmanouil Benetos, Tillman Weyde, Artur S. d'Avila Garcez

StemCloud, London, UK

August 2013-March 2014

Software Developer (Part-Time)

- Design and development of software for beat-tracking and key detection of audio files, alignment in time of two audio files (loop and a backing track) and automatic key and beat matching.
- Advisor: Simon Dixon

Hewlett-Packard Labs, Bangalore, India

Research Intern

July 2011-July 2012

- Large vocabulary speech recognition for Indian languages (Hindi, Bengali).
- Speaker verification.
- Advisor: Sitaram Ramachandrula

Laser Laboratory, Indian Institute of Sciences, Bangalore, India

Research Intern

Summer, 2010

- Experiments in Quantum Optics.
- Advisor: Vasant Natarajan

Central Electronic Engineering Research Institute, Pilani, India

Research Intern

Summer, 2009

- Designed a prototype for a drinking water quality monitoring system using Wireless Sensor Networks.
- Advisor: K.S.N Rao

TEACHING EXPERIENCE

Queen Mary University of London, London, UK

Teaching Assistant for the following courses:

- Procedural Programming (Java)
- Fundamentals of DSP (MATLAB, script marking)
- Software Tools for Engineering (MATLAB, Bash, script marking)
- Real-Time DSP (C++ for the TI TMS320C6713 DSP)
- Introduction to Multimedia (JavaScript)
- Data Mining (MATLAB, Weka)

- Introduction to C Programming (Elementary game design with ncurses)
- Artificial Intelligence (Prolog)

Birla Institute of Technology and Science, Goa, India

- Methods of Mathematical Physics

PROGRAMMING

Python , C++, MATLAB.

OS

Linux, Windows, MacOS

REVIEWER

Conferences

- International Society for Music Information Retrieval (ISMIR)
- European Signal Processing Conference (EUSIPCO)

Journals

- IEEE Transactions on Audio, Speech and Language Processing (TASLP)

AWARDS

Student Travel Award for ISMIR 2014 in Taipei, Taiwan.

Research Assistant for Audio Analytic, Cambridge. August 2014-August 2015.

Pump priming fund from City University London for “A deep learning framework for automatic music transcription”, April-August 2014.

International student tuition fee waiver from the School of Electronics Engineering and Computer Science at Queen Mary University of London.

LANGUAGES

English, Hindi, Bengali