Chitralekha Gupta

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Summary

I am a PhD candidate specializing in speech and singing voice analysis, involving audio signal processing, machine learning, linguistics, and psychoacoustics. I am interested in pursuing a career in audio technology. I am an enthusiastic learner and a high achiever. I feel passionate about solving real-world problems, and I believe audio technology can make a significant contribution.

Research Interests

Speech and singing voice analysis, music information retrieval, applications of music in education and health therapy.

Education

Ph.D. (Ongoing)   Jan. 2015 - Present
National University of Singapore
NUS Graduate School for Integrative Sciences and Engineering (Dept. of Comp. Sci.); CAP: 4.38/5.0
Thesis: A comprehensive framework for evaluation of singing voice
Advisor: Wang Ye and Li Haizhou

Master of Technology   2008 - 2011
Indian Institute of Technology Bombay
Specialization: Communication & Signal Processing (Dept. of Electrical Engg.); *GPA:* 9.63/10.0
Thesis: Objective assessment of ornaments in Indian singing
Advisor: Preeti Rao

Bachelor of Engineering   2004 - 2008
M.S. University, Baroda
Specialization: Electronics; *GPA:* 3.8/4.0
Thesis: An obstacle detector for the visually challenged
Advisor: M. S. Gosavi

Publications

1. **Chitralekha Gupta**, Haizhou Li, and Ye Wang
   Automatic Pronunciation Evaluation of Singing
   Submitted to: Interspeech 2018.

2. **Chitralekha Gupta**, Rong Tong, Haizhou Li, and Ye Wang
   Automatic Transcription and Alignment of Lyrics in Solo-Singing
   Accepted for: *International Society of Music Information Retrieval (ISMIR), Paris, 2018.*

3. **Chitralekha Gupta**, Haizhou Li, and Ye Wang
   Perceptual Evaluation of Singing Quality
   In Proceedings of Asia-Pacific Signal and Information Processing Association (APSIPA), Kuala Lumpur, Dec. 2017 **(Best Student Paper Award)**.

4. Douglas Turnbull, **Chitralekha Gupta**, Dania Murad, Michael Barone, and Ye Wang
   Using Music Technology to Motivate Foreign Language Learning
   In Proceedings of International Conference on Orange Technologies, ICOT 2017, Dec 2017, Singapore.

5. **Chitralekha Gupta**, David Grunberg, Preeti Rao, and Ye Wang
   Towards automatic mispronunciation detection in singing,
   In Proceedings of International Society of Music Information Retrieval (ISMIR), Suzhou, Oct. 2017.

6. Karim Magdi, David Grunberg, Kat Agres, **Chitralekha Gupta**, and Ye Wang
   Intelligibility of Sung Lyrics: A Pilot Study,
   In Proceedings of International Society of Music Information Retrieval (ISMIR), Suzhou, Oct. 2017.

7. Zhiyan Duan, **Chitralekha Gupta**, Graham Percival, David Grunberg, and Ye Wang
   SECCIMA: Singing and Ear Training for Children with Cochlear Implants via a Mobile Application
   In Proceedings of Sound and Music Computing (SMC), Helsinki, July 2017.

8. **Chitralekha Gupta**, Kaushal Jadia, Avik Santra, and Rajan Srinivasan
   Spectral Estimation of Clutter for Matched Illumination,
   In Proceedings of International Radar Symposium India (IRSI), Bangalore, Dec. 2013.

9. **Chitralekha Gupta** and Preeti Rao
   Objective Assessment of Ornamentation in Indian Classical Singing,
   *S. Ystad et al. (Eds.): CMMR/FRSM 2011, Springer Lecture Notes on Computer Science (LNCS)
   7172, pp. 1-25*, 2012. *(Masters thesis work)*

10. **Chitralekha Gupta** and Preeti Rao
    An objective evaluation tool for ornamentation in singing,
    *In Proceedings of International Symposium on Computer Music Modelling and Retrieval (CMMR)
    and Frontiers of Research on Speech and Music (FRSM)*, Bhubaneswar, India, March 2011.

11. Vishweshwara Rao, **Chitralekha Gupta**, and Preeti Rao
    Context-aware features for singing voice detection in polyphonic music, *In 9th International Workshop on Adaptive Multimedia Retrieval*, Barcelona, July 2011.

12. Ashish Patil, **Chitralekha Gupta** and Preeti Rao
    Evaluating Vowel Pronunciation Quality: Formant Space Matching versus ASR Confidence Scoring,
    In Proceedings of 16th National Conference on Communications 2010, IIT Madras, Chennai, Jan. 2010.

WORK EXPERIENCE		
1. **Internship at Sound and Music Computing Lab, NUS**		Aug 2014 – Dec 2014

1. **Internship at Sound and Music Computing Lab, NUS**   Aug 2014 – Dec 2014
   Worked on singing and ear training application design for children with cochlear implants.

2. **Research Engineer at EADS Cassidian, Bangalore**   March 2013 - July 2014
   Worked on clutter rejection techniques for Radar applications.

3. **Software Developer at Dell R&D, Bangalore**   Aug 2011 - Feb 2013
   Worked as a part of the Dell Remote Access Controller team developing a scriptable interface for local and remote control of a Dell server.

SOFTWARE ENGG. SKILLS

Programming/Scripting Languages: Python, Matlab, C, C++, Java, Javascript, HTML, PHP
Tools: Kaldi speech recognition toolkit, Tensorflow

SELECTED HONORS AND AWARDS

- **School of Computing Innovation Prize, NUS** (Team), for *SLIONS: Singing and Listening to Improve Our Natural Speaking*, an application for language learning through singing, 2018.

- **Best Student Paper Award**, for the paper *Perceptual Evaluation of Singing Quality* at APSIPA 2017.

- **NGS Scholarship**, National University of Singapore, 2015-Present

- **Best Employee of the Quarter**, EADS Cassidian, Bangalore, 2014

REFERENCES

Dr. Ye Wang (PhD advisor)	**Dr. Haizhou Li** (PhD advisor)	**Dr. Preeti Rao** (MTech advisor)
Associate Professor	Professor	Professor
Dept. of Comp. Sci.	Dept. of Electrical Engg.	Dept. of Electrical Engg.
National University of Singapore	National University of Singapore	IIT Bombay, India
Email: wangye@comp.nus.edu.sg	Email: haizhou.li@nus.edu.sg	Email: prao@ee.iitb.ac.in