Chitralekha Gupta

CONTACT INFORMATION

AS-06, Media Research Lab 7,
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SUMMARY

I specialize in speech and singing voice analysis, involving audio signal processing, machine learning, linguistics, and psychoacoustics. I am interested in pursuing a career in music technology to solve problems in the areas of music information retrieval, music and language education, and music for health therapy. I am passionate about interdisciplinary research in the field of music technology and have a consistently good academic performance. I have travelled to countries like Germany, Malaysia, and China to present my work. Also I work in a multicultural environment, which has been an enriching experience.

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.)
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 and 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**, Rong Tong, Haizhou Li, and Ye Wang
Automatic Generation of Aligned Lyrics of Singing Voice,
Submitted to ICASSP 2018.
2. **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)**.
3. 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.
4. **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.

5. 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.
6. 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.
7. **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.
8. **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 7172, pp. 1-25, 2012. *(Masters thesis work)*
9. **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.
10. 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.
11. 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
Worked on singing and ear training application design for children with cochlear implants.
2. **Research Engineer at Airbus Defense and Space, 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.

Selected Honors and Awards

- **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**, Airbus Defence and Space, Bangalore, 2014
- **Recognized Disclosure**, Applying state-of-the-art speech recognition tools for improved user experience in enterprise servers at Dell R&D, Bangalore, 2013 (Awarded to the best novel proposals in the company)
- **First Prize** for highest score in the city in the National-level school leaving examination, India, 2004

References

Dr. Wang Ye (advisor)
Associate Professor
Dept. of Comp. Sci.
National University of Singapore
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Dr. Haizhou Li (co-advisor)
Professor
Dept. of Electrical Engg.
National University of Singapore
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Dr. Preeti Rao (MTech advisor)
Professor
Dept. of Electrical Engg.
IIT Bombay, India
Email: prao@ee.iitb.ac.in