

**OBJECTIVE** I would like to be part of a group that would hone my research skills in the area of Signal Processing for Audio compression and Audio effects.

**EDUCATION** *Doctorate of Philosophy (PhD),*  
University of California Santa Barbara, (Sept 2009 - )  
Focus on audio compression

*Master of Science (MS),*  
University of California Santa Barbara, Dec 2009  
Major in Signal Processing; Minor in Communications  
Cumulative GPA: 3.97/4.00

*Bachelor of Engineering (BE),*  
National Institute of Technology Karnataka, Jun 2004  
Major in Electronics and Communications Engineering  
Aggregate: 85.2%

**EXPERIENCE** *Graduate Student Researcher, July 2009 to present*  
Signal Compression Lab, UCSB

- Research is focused on work towards unified speech audio coding with current emphasis on improving techniques for exploiting redundancies across frames
- Proposed perceptual rate-distortion optimization of parameters for the long term prediction jointly with the MPEG AAC quantization and coding parameters.
- Proposed cascaded long term prediction of polyphonic audio signals for improved low delay audio compression and frame loss concealment.

*Senior Engineer, Jul 2004 to Aug 2008*

Audio Group, Ittiam Systems Pvt. Ltd., India

- Worked on design and development of various Audio codecs such as HEAAC decoder, HEAAC v2 decoder, HEAAC multi-channel decoder and MP3 decoder.
- Worked on design and development of various Audio effects such as Spectrum Analyzer, Time Scale Modifier, Re-sampler and a non-trivial Karaoke module.
- Worked on platform specific audio components development for Tensilica Xtensa HiFi2 AudioEngine, TI C64x, Broadcom VC02 and ARM9E
- Worked on standardizing different aspects of audio algorithm developments which included the API, fixed point conversion, release management and coding standards

*Project Intern, Dec 2003*

Part of Final Year project at Texas Instruments, Bangalore

- Worked on fixed point conversion and implementation of Internet Low Bit rate Codec (iLBC) on C55x

**Publications** T. Nanjundaswamy and K. Rose, "Bidirectional Cascaded Long Term Prediction for Frame Loss Concealment in Polyphonic Audio Signals," to appear in ICASSP 2012

T. Nanjundaswamy and K. Rose, "Perceptually Optimized Cascaded Long Term Prediction of Polyphonic Signals for Enhanced MPEG-AAC," 131st AES Convention, Oct 2011

T. Nanjundaswamy and K. Rose, "Cascaded Long Term Prediction for Coding Polyphonic Audio Signals," Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), Oct 2011 (*Best Paper Award Finalist*)

T. Nanjundaswamy, V. Melkote, E. Ravelli and K. Rose, "Perceptual Distortion-Rate Optimization of Long Term Prediction in MPEG AAC," 129th AES Convention, Nov 2010 (*winner of Student Technical Paper Award*)

E. Ravelli, V. Melkote, T. Nanjundaswamy and K. Rose, "Cross-layer rate-distortion optimization for scalable advanced audio coding," 128th AES Convention, May 2010

E. Ravelli, V. Melkote, T. Nanjundaswamy and K. Rose, "Joint optimization of the perceptual core and lossless compression layers in scalable audio coding," Proc. ICASSP'10

Tejaswi N and Ameya Potadar, "Optimal Implementation of MPEG4 HEAAC v2 Decoder on C64x+ DSPs," Texas Instruments Developer's Conference Worldwide, Dallas, March 2007

Praveen Chavan, Tejaswi, Mithun, Ajit Rao, C.V. Goudar and Sumam David, "Fixed point implementation of Internet low-bit rate codec (iLBC)," Texas Instruments Developer's Conference India, Bangalore, December 2003

**Computer Skills**

*High level Languages:* C, Matlab

*Assembly Languages:* ARM9E, TI C64x, Tensilica Xtensa HiFi2, Broadcom VC02

*Scripting Languages:* Windows Batch, Unix Shell, Perl

**Graduate level courses**

Information Theory, Digital Signal Compression, Digital Speech Processing, Advanced Digital Signal Processing, Multi-rate Signal Processing, Matrix Analysis, Fourier Analysis, Optimal Estimation and Prediction, Stochastic Processes, Pattern Recognition, Speech Recognition, Game Theory

**Distinctions and Activities**

Winner of AES 129th Convention Student Technical Paper Award

Best Paper Award finalist at IEEE WASPAA 2011

Secured 44th rank ( less than 0.001%) in Engineering stream and 21st rank ( less than 0.001%) in Medical stream in the Karnataka Common Entrance Test (in 2000) for professional education amongst more than 200,000 students

Reviewer for IEEE T-ASL, IEEE MMSP 2010, IEEE ICASSP 2011 and IEEE WASPAA 2011

Secured several prizes in Hardware design contests in Institute-technical competitions

Secretary of college Rotaract Club in final year B.E. As part of Rotaract Club organized and participated in many blood donation camps, cultural and fun events

Convener of the Technical festival (TARANG 2004) conducted by the Electronics and Communication Engineering Department in final year B.E.

**References**

Available upon request.