

Raghunandan Hulikal Keshavan

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Education

Stanford University, Stanford, CA

- PhD, Electrical Engineering
- MS, Electrical Engineering (GPA:4.13/4)

January 2008 - Present
September 2007 - December 2008

Indian Institute of Technology Madras, Chennai, India

- B.Tech, Electrical Engineering (Major GPA : 9.83/10)

August 2003 - July 2007

Publications

R. Keshavan, A. Montanari and S. Oh “Low-rank Matrix Completion with Noisy Observations: a Quantitative Comparison”, *Allerton Conf. on Comm. Control and Computing*, 2009

R. Keshavan, A. Montanari and S. Oh “Matrix Completion from Noisy Entries”, *Neural Information Processing Systems Conference (NIPS)*, 2009

R. Keshavan, S. Oh and A. Montanari “Matrix Completion from a Few Entries”, *Intl. Sym. on Info. Th. (ISIT)*, 2009

R. Keshavan, A. Montanari and S. Oh “Learning low rank matrices from $O(n)$ entries”, *Allerton Conf. on Comm. Control and Computing*, 2008

Pankaj K R, Raghunandan H K, “A Novel Algorithm for Scalable Speech Coding”, *Texas Instruments India Technical Conference (TIITC'06)*, 2006

Coursework

Inference on Graphical Models, Discrete Mathematics and Algorithms, Theory of Probability, Modern Coding Theory, Universal Schemes in Information Theory, Convex Optimization, Monte Carlo Methods, Advanced Statistical Signal Processing, Digital Image Processing, Fourier Transforms and its Applications, Linear Dynamical Systems, Applied Quantum Mechanics

Honors

- Departmental Fellowship for graduate studies from the Electrical Engineering Department, Stanford University (2007-08)
- Institute Silver Medal for being ranked 1st in the Department of Electrical Engineering, IIT Madras
- Gold Medal at the Indian National Physics Olympiad, 2003

Work

Internship at Texas Instruments, Bangalore

May-July 2006

Experience

We studied the properties of the wideband portion of speech with respect to the narrowband region and developed a scalable wideband codec, scalable with any LPC based narrowband coder. We also proposed a scheme to use scalable codecs in a PacketCable network maintaining interoperability with narrowband devices.

Projects

CD Cover Recognition

April - June 2008

Designed and implemented an image processing algorithm using eigenimages and feature descriptors, for recognizing a CD cover from an image taken by a camera-phone.

LDPC Code Design

February - March 2008

Designed and tested a low density parity check code to maximize rate on a Laplacian channel under given constraints of bit error rate, blocklength, and decoder complexity.

HMMs for locating putative p53-binding regions

August 2006 - May 2007

- Advisor : Prof. R.David Koilpillai, Dept. of Electrical Engineering, IIT Madras

We studied the problem of locating putative p53-binding regions on a DNA sequence. We validated the profile Hidden Markov Model based method for locating the p53-binding regions and extended the method with a filtering technique based on the concept of offending bases.

Computer Skills

C, Matlab/Scilab