

Sunil Kumar

3740 McClintock Ave
Los Angeles, CA 900089
kumarsun@usc.edu

- OBJECTIVE** To obtain a challenging position in the field of signal-processing/machine-learning/data-analysis.
- CURRENT STATUS** *Ph.D Candidate* : Compression Group (GPA 4.0/4.0)
Department of Electrical Engineering-Systems
University of Southern California, Los Angeles, CA
Expected graduation: May 2012
Minor Area: Applied Mathematics
- EDUCATION** *Bachelor of Technology*, Department of Electrical Engineering (GPA 8.5/10) Indian Institute of Technology, Delhi awarded June 2005
- RESEARCH INTERESTS** Signal Processing on Graphs
Wavelet Transforms
Image Processing
Machine Learning
- PROFESSIONAL EXPERIENCE**
- *IBM Watson Research Lab, Yorktown*: May 2010 - Aug. 2010
Summer Intern, Business Analytics and Mathematical Sciences (BAMS) Group.
 - *IBM India Research Lab*: Dec 2005 - July. 2007
Technical Staff Member in Systems, High Performance Computing Group
 - *Mascon Life Sciences* : Sep 2005 - Dec. 2005
Executive Software Engineer
Design and development of bioinformatics projects like Gel Image Analysis, QTL Mapping and Gene Prediction.
- FELLOWSHIPS /AWARDS** Annenberg Graduate Fellowship(Aug.2007 - May 2011)
Research Assistance Award (Aug 2011 - Present)
ICIM Stay Ahead best B.Tech Project award (June 2005)
Rajiv Bhambrawale best B.Tech Project award (June 2005)
Summer Undergraduate Research Award (SURA)-2003 from IRD, IIT Delhi.
- COMPUTER SKILLS** *Languages & Software*: C++, VC++, Assembly Language Programming, MATLAB, Mips Architecture, Python, JAVA, LISP, PROLOG, Assembly language, SML, Pspice, HTML, XML, ADOBE Photoshop
Operating Systems: Windows, Linux, Unix.
- JOURNALS**
- S. K. Narang and Antonio Ortega, "Perfect Reconstruction Two-Channel Wavelet Filter-Banks For Graph Structured Data", submitted to IEEE Transactions on Signal Processing, Tech. Rep. arXiv:1106.3693v2, June 2011

- S. Kumar, R. Gupta, N. Khanna, S. Chaudhury and S. D. Joshi, "Text Extraction and Document Image Segmentation Using Matched Wavelets and MRF Model," IEEE Transactions on Image Processing, : vol.16, no.8, pp.2117-2128, Aug. 2007

CONFERENCES

- S.K. Narang and A. Ortega, "Downsampling Graphs Using Spectral Theory", IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP'11), pp. 4208 - 4211 July 2011.
- J. P.-Trufero, S.K. Narang and A. Ortega, "Distributed Transforms for Efficient Data Gathering in Arbitrary Networks", Intl. Conf. on Image Proc. (ICIP'11).
- S. K. Narang and A. Ortega, "Local two-channel critically-sampled filter-banks on graphs," Intl. Conf. on Image Proc. (ICIP'10), pp. 333-336, Sep.2010.
- G. Shen, W.-S. Kim, S. K. Narang, A. Ortega, J. Lee, and H. Wey, "Edge-adaptive transforms for efficient depth-map coding," Picture Coding Symposium (PCS'10): pp. 566 - 569 , Nagoya, Japan, Dec. 2010.
- S.K. Narang, G. Shen and A. Ortega, "Unidirectional Graph-based Wavelet Transforms for Efficient Data Gathering in Sensor Networks". IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP'10), pp. 2902 - 2905 Dallas, April 2010.
- S. K. Narang and A. Ortega, Lifting based wavelet transforms on graphs, (AP-SIPA ASC 09), pp 441-444 Oct. 2009.
- G. Shen, S. K. Narang and A. Ortega, "Adaptive Distributed Transforms for Irregularly Sampled Wireless Sensor Networks". In Proc. of 2009 IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP'09), pp 1520-6149 , Taipei, April 2009.
- A.R. Choudhury, A. King, S. Kumar and Y. Sabharwal, "Optimizations in financial engineering: The Least-Squares Monte Carlo method of Longstaff and Schwartz". In Proc. of 2008 IEEE International Symposium on Parallel and Distributed Processing. (IPDPS'08):pp 1-11 April 2008
- A. Gupta, S. Kumar, R. Gupta, S. Chaudhury, S. D. Joshi, "Enhancement of Old Manuscript Images". In Proc. of 2007 Ninth International Conference on Document Analysis and Recognition (ICDAR'07): vol2 744-748 Sep. 2007.
- S. Kumar, N. Khanna, S. Chaudhury, S. D. Joshi, "Locating Text in Images using Matched Wavelets". In Proc. of 2005 Eighth International Conference on Document Analysis and Recognition (ICDAR'05) : vol2 595-599 Sep. 2005.

REFERENCES

- Professor Antonio Ortega, Signal and Image Processing Institute, Department of Electrical Engineering, University of Southern California, 3740 McClintock Ave., EEB 436, Los Angeles, CA 90089-2564, Tel: (213) 740-2320, Fax: (213) 740-4651, antonio.ortega@sipi.usc.edu
- Dr. Bhaskar Krishnamachari, Associate Professor, Dept. of Electrical Engineering, 3740 McClintock Avenue, EEB 300, University of Southern California, Los Angeles, CA 90089, Tel: (213) 821-2528, bkrishna@usc.edu