Dr. Prasad Sudhakara Murthy

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Industry Experience

◦ **GE Global Research**, Bangalore, India

Lead Research Scientist **April 2018 - till now**
AI for Image Analytics team

Research Scientist **October 2014 - March 2018**
AI for Image Analytics team

◦ **Applied Research Lab, Satyam Computers**, Bangalore, India

Systems Engineer **October 2006 - May 2007**

◦ **Inspiration Technologies Pvt. Ltd.**, Bangalore, India

Signal processing consultant **March 2003 - May 2003**

◦ **Ittiam Systems**, Bangalore, India

Engineer **March 2001 - September 2002**

◦ **Robert Bosch India Limited**, Bangalore, India

Junior Software Engineer **October 2000 - March 2001**

Education

◦ **INRIA Rennes - Bretagne Atlantique**, Rennes, France

Ph.D. in Signal Processing, February 2011

- Thesis Topic: "Sparse Models and Convex Optimization for Convolutive Blind Source Separation"
- Advisor: Dr. Rémi Gribonval

◦ **Indian Institute of Science**, Bangalore, India
Department of Electrical Engineering

M.Sc.(Engg.), Systems Science and Signal Processing, February, 2007

◦ **Bangalore University**, India

B.E., Computer Science and Engineering, September, 2000

Academic Experience

◦ **Univérsité catholique de Louvain**, Louvain-la-Neuve, Belgium

Postdoctoral research assistant **September, 2011 - May, 2014**
Included teaching the following courses

- Information Theory and Coding, Spring 2013, 2014
- Wavelets and Applications, Spring 2013

◦ **Indian Institute of Science**, Bangalore, India

Visiting researcher **June, 2013 - August, 2013 and January, 2014**

Included teaching the following course, along with Prof. K. R. Ramakrishnan
- Selected Topics in Image Processing, Fall 2013

◦ **Ecole Polytechnique Federale de Lausanne**, Lausanne, Switzerland

Visiting researcher **January 2011**

◦ **IIT Bombay, Electrical Engineering department**, Mumbai, India

Research assistant **July 2003 - December 2003**

Patents

1. Patient specific organ model building for usage in ultrasound guided procedures and follow-up studies, *filed*
2. Multi-task feature selection nets, *filed*
3. Joint deep learning of foreground, background and shape for robust contextual segmentation, *filed*
4. Using deep convolutional architectures for data on arbitrary domains, *filed*
5. System and method for optimization of deep learning architectures, *filed*

Publications

Deep Learning

1. H. Ravishankar, R. Venkataramani, S. Thiruvenkadam, P. Sudhakar and V. Vaidya, Learning and incorporating shape models for semantic segmentation, in MICCAI 2017, Québec city, Canada.
2. R. Venkataramani, S. Thiruvenkadam, P. Sudhakar, H. Ravishankar and V. Vaidya, Filter sharing: Efficient learning of parameters for volumetric convolutions, in NIPS workshop on Machine Learning for Healthcare, 2016, Barcelona, Spain.
3. H. Ravishankar, P. Sudhakar, R. Venkataramani, S. Thiruvenkadam, P. Annangi and N. Babu and V. Vaidya, Understanding the Mechanisms of Deep Transfer Learning for Medical Images, DLMIA workshop, MICCAI 2016, Athens, Greece.

Sparsity and Compressed Sensing

4. P. Sudhakar, L. Jacques, X. Dubois, P. Antoine and L. Joannes, Compressive imaging and characterization of sparse light deflection maps, SIAM Journal on Imaging Sciences, 8(3), 1824-1856, 2015.
5. P. Sudhakar, L. Jacques, A. Gonzalez, X. Dubois, P. Antoine and L. Joannes, Compressive acquisition of sparse deflectometric maps, in SampTA 2013, Bremen, Germany.
6. A. Benichoux, P. Sudhakar, F. Bimbot and R. Gribonval, Well-posedness of the frequency permutation problem in sparse filter estimation with ℓ^p minimization, Applied and Computational Harmonic Analysis, 35(3), pp. 359-540, November 2013.
7. P. Sudhakar, L. Jacques, X. Dubois, P. Antoine and L. Joannes, Compressive schlieren deflectometry, in Acoustics, Speech and Signal Processing, IEEE International Conference on (ICASSP 2013), Vancouver, Canada.
8. A. Benichoux, P. Sudhakar and R. Gribonval, Well-posedness of the frequency permutation problem in sparse filter estimation with ℓ^p minimization, in SPARS'11, Edinburgh, Scotland, June 27-30, 2011.

Signal and Image Processing

9. A. Adiga, S. Mulleti, P.Sudhakar and C. S. Seelamantula, Two-Dimensional FRI Signal Reconstruction Using Blind Deconvolution, SampTA 2015, Lausanne, Switzerland.
10. P. Sudhakar and P. K. Ghosh, Recognition benefit of articulatory features from acoustic-to-articulatory inversion using sparse smoothing, INTERSPEECH 2014, Singapore.
11. P. Sudhakar, L. Jacques and P. K. Ghosh, A sparse smoothing approach for Gaussian mixture model based acoustic-to-articulatory inversion, ICASSP 2014, Florence, Italy.
12. S. Prasad and K. R. Ramakrishnan, On resampling detection and its application to detect image tampering, in IEEE International Conference on Multimedia and Expo (ICME 2006), July 2006.

Blind Source Separation

13. A. Benichoux, P. Sudhakar, F. Bimbot and R. Gribonval, Some uniqueness results in sparse convolutive source separation, in International Conference on Latent Variable Analysis and Source Separation, Mar 2012, Tel Aviv, Israel.
14. S. Arberet, P. Sudhakar and R. Gribonval, Estimating multiple filters from stereo mixtures: a double sparsity approach, in SPARS'11, Edinburgh, Scotland, June 27-30, 2011.
15. S. Arberet, P. Sudhakar and R. Gribonval, Wideband Doubly-Sparse Approach for MITO Sparse Filter Estimation, in Acoustics, Speech and Signal Processing, IEEE International Conference on (ICASSP 2011), May 2011.
16. P. Sudhakar, S. Arberet and R. Gribonval, Double Sparsity: Towards Blind Estimation of Multiple Channels, in Latent Variable Analysis and Signal Separation, 9th International Conference on (LVA/ICA2010), September 2010.
17. P. Sudhakar and R. Gribonval, Sparse filter models for solving permutation indeterminacy in convolutive blind source separation, in SPARS'09 - Signal Processing with Adaptive Sparse Structured Representations, April 2009.
18. P. Sudhakar and R. Gribonval, A sparsity-based method to solve the permutation indeterminacy in frequency domain convolutive blind source separation, in ICA 2009, 8th International Conference on Independent Component Analysis and Signal Separation, March 2009.

Neuroscience

19. P. Sudhakar, R. Madhavan, R. Mullick, E. T. Tan and S. Joel, Method to functionally parcellate the brain consistently across subjects, Human Brain Mapping 2016, Geneva, Switzerland.
20. P. Sudhakar, R. Madhavan, R. Mullick, E. T. Tan and S. Joel,, Reproducibility of group spectral clustering of the sensorimotor cortex, Human Brain Mapping 2016, Geneva, Switzerland.

Professional Activities

Member - Local organisation/Technical committee

- LVA/ICA 2010 (http://lva2010.inria.fr)
- SPARS09 (http://spars09.inria.fr)
- iTWIST'14 (https://sites.google.com/site/itwist14/home)

Reviewer

- Elsevier Signal Processing
- Springer Signal, Image and Video Processing
- IEEE TCSVT

- IEEE ICASSP, ICIP, SampTA, SPCOM
- MICCAI workshop on Deep Learning for Medical Imaging, Breast Image Analysis

Session chair
- SPIE Photonics Europe 2014 - Image Processing