

# Dr S Sathiya Narayanan

Assistant Professor, VIT-Chennai

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## CONTACT INFORMATION

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## BRIEF PROFILE SUMMARY

Experience in academic research (area of research: signal processing).

- 8+ years of experience in compressive sensing based acquisition/reconstruction of signals such as image, video and radar echo.
- 3+ years of experience in design of radar signals that support spectral coexistence with Discrete Video Broadband (DVB) signals.
- 1+ years of experience in machine learning based image processing applications and machine-to-machine communication.

Experience in university teaching.

- 2+ years of university teaching experience in NTU as a tutor/teaching assistant for the following courses: *Signals and Systems*, *Digital Signal Processing* and *Microprocessors*.
- 1+ years of university teaching experience in VIT as a faculty for the following courses: *Signals and Systems*, *Digital Signal Processing*, *Digital Image Processing* and *Computer Vision*.

## EDUCATION

Doctor of Philosophy (Ph.D.), Electrical and Electronic Engineering, 2017.

- Nanyang Technological University, Singapore, *CGPA: 4.33/5.00*
- Thesis title: *Compressive Sensing Reconstruction Algorithms using Partially Correct Signal Information*
- Advisor: Assoc. Prof. Anamitra Makur

Master of Science (M.Sc.), Signal Processing, 2011.

- Nanyang Technological University, Singapore, *CGPA: 4.56/5.00*
- Dissertation title: *Speech Enhancement using auditory-based spectral amplitude estimators*
- Advisor: Assoc. Prof. Soon Ing Yann

Bachelor of Engineering (B.E.), Electronics and Communications Engineering, 2008.

- Anna University (Adhiparasakthi Engineering College), India, *Marks: 85%*
- Project title: *Capacity Improvement of Wireless Ad-hoc networks using Hierarchical Routing*
- Advisor: Assoc. Prof. V. Janakiraman

## RESEARCH EXPERIENCE DURING PHD

**Thesis title: Compressive Sensing Reconstruction Algorithms using Partially Correct Signal Information**

A brief list of projects undertaken during Ph.D are given below.

- Modified Adaptive Basis Pursuits for Recovery of Correlated Sparse Signals.

- Iterative Compressive Sensing Framework for Compressive Imaging.
- Compressive Sensing based Video Object Coding.
- Greedy Pursuits Assisted Basis Pursuit for Sparse Signal Recovery.

RESEARCH  
EXPERIENCE  
AFTER PHD

**Academic Research - Research Fellow**                      **October 2015 to April 2018**  
*Nanyang Technological University, Singapore.*

List of projects handled/handling after Ph.D are given below.

- Compressive Sensing Applications to Radar Imagery and Video.
- Face Recognition as a Compressive Sensing Problem.
- Radar Co-existence with DVB-T2.

TEACHING  
EXPERIENCE

**Tutor/Teaching Assistant**    **January 2014 to April 2016**  
*Nanyang Technological University, Singapore.*

**Assistant Professor**    **June 2018 - Present**  
*Vellore Institute of Technology, Chennai.*

EXPERIENCE IN  
PEER-REVIEW

Reviewed papers submitted to several peer-reviewed journals and conferences including but not limited to the following,

- Journals: IEEE Transactions on Vehicular Technology, IEEE Transactions on Signal Processing, IEEE Access, Optik (Elsevier), Journal of Electronic Imaging (SPIE), etc.
- Conferences: ICICS 2015, TENCON 2016, ACIIDS 2018, etc.

SELECTED  
PUBLICATIONS

**Manuscripts published:**

- **S. Narayanan**, S. K. Sahoo and A. Makur, "Greedy Pursuits Assisted Basis Pursuit for Reconstruction of Joint-Sparse Signals," *Signal Processing*, Vol. 142, pp. 485-491, Jan. 2018.
- **S. Narayanan**, S. K. Sahoo and A. Makur, "Greedy Pursuits based Gradual Weighting Strategy for Weighted  $\ell_1$ -Minimization," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, Canada, May 2018.
- **S. Narayanan**, S. K. Sahoo, and A. Makur, "Recovery of Correlated Sparse Signals using Adaptive Backtracking Matching Pursuit," *IEEE Visual Communication and Image Processing*, pp. 1-4, Singapore, Dec. 2015.
- **S. Narayanan**, S. K. Sahoo, and A. Makur, "Sparse Recovery of Radar Echo Signals using Adaptive Backtracking Matching Pursuit," *IEEE Radar Conference*, pp. 339-343, Johannesburg, Oct. 2015.
- **S. Narayanan**, S. K. Sahoo and A. Makur, "Modified Adaptive Basis Pursuits for Recovery of Correlated Sparse Signals," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pp. 4136-4140, Italy, May 2014.

AWARDS AND  
SCHOLARSHIPS

NTU Research Student Scholarship, 2011-2015.

NTU-EEE Outstanding Teaching Assistant Award, 2014.

WEBPAGE

[https://satmay87.wixsite.com/sathiya-narayanan.](https://satmay87.wixsite.com/sathiya-narayanan)