

## Bio-data of Supervisor /Co-Supervisor

1. **Name** : Dr. M N V S S Kumar



2. **Address with E-mail, Land line and Mobile Nos. :**

**Official Address:** Associate Professor,  
Dept. of ECE,  
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3. **Nationality** : Indian

4. **Religion** : Hindu

5. **Date of Birth** : 08-08-1987

6. **Educational Qualification** :  
(from UG onwards)

S. No.	Qualification	University/ Institute	Specialization	Department	Other remarks
1	B.E.	Andhra University	Electronics and Communication Engineering	Electronics and Communication Engineering	81% 2008
2	M.Tech.	Andhra University	RADAR and Microwave Engineering	Electronics and Communication Engineering	CGPA-8.4 2010
3	P.h.D.	Andhra University	Electronics and Communication Engineering	Electronics and Communication Engineering	2013

7. **Details of Doctoral Thesis** :

**Area of Thesis work** : Image Processing and Mathematical Modelling

**Title of Thesis** : Development of Submarine/AUV Underwater  
Navigation Techniques using Imaging Sonar

**Supervisor** : Prof. G Sasi Bhushana Rao

**Year of Completion work** : 2013

**Year of award of Ph.D** : 2013

**8. Professional Experience**

:

<b>S. No.</b>	<b>Institute / Organization</b>	<b>Position held</b>	<b>Date of joining</b>	<b>Duration</b>	<b>Regular/ Adhoc /Ratified</b>
1	DRDO/Andhra University	Research Assistant	May, 2008	October, 2010	Regular
2	UGC/Andhra University	Project fellow	October, 2010	March, 2011	Regular
3	Andhra University	Teaching Assistant	April, 2011	October, 2013	Adhoc
4	AITAM, Tekkali	Associate Professor	November, 2013	Till Date	Regular

**9. Research projects completed as Technical Expert:**

<b>S. No.</b>	<b>Title of the Project</b>	<b>Funding agency</b>	<b>Sanctioned amount and Year of Sanction</b>	<b>Duration of the project</b>	<b>Present status</b>
1	Development of multilateration algorithm for obtaining 3D positioning of emitters and determination of optimal distribution of sensors	DLRL	9,64,200/- 2014	1 Year	At Phase I

**Research Experience** :(A) **Ph.D scholars guided** : NA

S.No.	Name of the Research Scholar	Title of the Thesis	Year of Award of Ph.D	University /Institute who has awarded the degree	Supervisor/ Co-Supervisor

(B) **Ph.D scholars presently working** : NA

S.No.	Name of the Research Scholar	Area of the work	Year of Registration	Registered University /Institute	Supervisor/ Co-Supervisor

(C) **Number of Publications** : 60

S. No	Status of Journal	During Ph.D programme	After Ph.D programme
1	International Journals	1	1
2	National Journals	13	1
3	International Conferences	1	-
4	National Conferences	31	12

**List of Publications** :**International Journals**

1. M N V S S Kumar, et. al, "GPS Signal Short-Term Propagation Characteristics Modeling in Urban Areas for Precise Navigation Applications", Journal of Positioning, 2013, 4, 192-199.
2. M N V S S Kumar, et. al, "Satellite Clock Error and Orbital Solution Error Estimation for Precise Navigation Applications", Journal of Positioning, 2014, 5, 22-26.

**National Journals**

1. M N V S S Kumar, et. al, "Performance analysis of Collision Alleviating DCF Protocol in congested wireless networks - A Markov chain analysis", IET Networks, Vol. 2, Iss.4, 2013.
2. M N V S S Kumar, et. al, "GPS Position Error Analysis for Precise Surveying and GAGAN Applications over the Indian Subcontinent", Journal of Indian Geophysical Union, (October 2010), Vol.14, No.4, pp.245-250.
3. M N V S S Kumar, et. al, "GPS L1 Signal Pseudorange Error Analysis Using TEQC", The IUP Journal of Telecommunications, Vol. III, No. 3, August 2011, pp. 54-60.
4. M N V S S Kumar, et. al, "Extraction of 3-Dimensional Features by Analyzing Underwater Images obtained from SONAR fitted on Autonomous Underwater Vehicle (AUV)" CIIT International Journal of Digital Image Processing, Vol.2, Iss.2, February 2010.
5. M N V S S Kumar, et. al, "Segmentation of Sonar Images based on Adaptive Thresholding with Image Histogram", CIIT International Journal of DIP, Vol. 2, Iss. 3, March 2010.
6. M N V S S Kumar, et. al, "Extraction of 3D Object Signatures from Images Obtained from Sonar Fitted on AUV", International Journal of Engineering Research and Applications, Vol. 1, Issue 4, pp.1635-1639.
7. M N V S S Kumar, et. al, "Turbo Coding Based High Performance Technique to Minimize Privacy and Safety Issues in RFID", International Journal of Engineering Research and Applications, Vol. 1, Issue 3, pp.879-883.
8. M N V S S Kumar, et. al, "Development of Image Fusion Algorithm for Impulse Noise Removal in Digital Images using the quality Assessment in Spatial Domain", International Journal of Engineering Research and Applications, Vol. 1, Issue 3, pp.786-792.
9. M N V S S Kumar, et. al, "An Overview of Software Testing in Medical System and Medical Device Testing", International Journal of Advanced Engineering Sciences And Technologies, Vol No. 8, Issue No. 1, 080 – 085, 2011.

10. M N V S S Kumar, et. al, "GPS Satellite Transmitted Signal SNR modeling over Low Latitude Region for Aircraft Navigation", International Journal of Advanced Engineering Sciences and Technologies, Vol. 12, Iss. 1, 29-33, 2011.
11. M N V S S Kumar, et. al, "A New Image Synthesis Algorithm for Detection of Underwater Objects from Sector Scan SONAR for Navigation of AUV", International Journal of Graphics and Image Processing, Vol. 2, Iss. 3, 2012.
12. M N V S S Kumar, et. al, "Surface Reconstruction of 3D Underwater Object from 2D Images obtained from Sector Scan Sonar fitted on AUV", Journal of Communication, Navigation and Signal Processing, 2<sup>nd</sup> Issue, Vol. 1, July 2012.
13. M N V S S Kumar, et. al, "GPS signal Rician fading model for precise navigation in urban environment", Indian Journal of Radio & Space Physics, Vol 42, June 2013, pp 192-196.
14. M N V S S Kumar, et. al, "Effect of Range Resolution on the performance of Monotonic and Chirp Technology Sonar", CIIT International Journal of Digital Signal Processing, 2014 (Accepted).

### **International Conferences**

1. M N V S S Kumar, et. al, '2D to 3D Conversion of Underwater Images obtained from SONAR fitted on Autonomous Underwater Vehicle (AUV)', IEEE TENCON 2009, Singapore.

### **National Conferences**

1. M N V S S Kumar, et. al, "GPS Satellite transmitted Spread Spectrum codes SNR modeling over the Indian Subcontinent for Precise Positioning Applications", IEEE INDICON 2011, Hyderabad.
2. M N V S S Kumar, et. al, 'Digital Image Processing' in SATECS, a National level Technical Symposium in Andhra University.
3. M N V S S Kumar, et. al, 'Improved Integrity Monitoring Using CFAR algorithm for Satellite Fault Detection' in Recent Advances in Communication Engineering an International Conference at Osmania University.
4. M N V S S Kumar, et. al, 'Segmentation Methods of the Sonar Images-A Comparison' in Aastha'08 a National level Technical Symposium.
5. M N V S S Kumar, et. al, 'Accurate Satellite Signal Strength Measurement using Transmission Parameters Modeling' in National Symposium on Instrumentation (NSI-33), Andhra University.
6. M N V S S Kumar, et. al, 'Accurate TEC determination Using Integer cycle Ambiguities estimation for Civil Aviation Application', International symposium on Opportunities and Challenges Facing Aviation Industry in Indian Subcontinent, April 18<sup>th</sup> 2009.
7. M N V S S Kumar, et. al, 'Segmentation Techniques of Sonar Images', Submitted to IET Journal Proceedings and accepted for publication.
8. M N V S S Kumar, et. al, 'A New Image Processing Segmentation Algorithm for Navigation and Guidance of an Underwater Robot', International Conference on Statistics, Probability, Operations Research, Computer Science and Allied Areas, Jan 4-8, 2010.
9. M N V S S Kumar, et. al, 'Extraction of 3D Information from 2D Underwater SONAR Images', International Conference on Statistics, Probability, Operations Research, Computer Science and Allied Areas, Jan 4-8, 2010.
10. M N V S S Kumar, et. al, 'Analysis of Impact of Change of States on Implementation of Rate 1/3, 8 PSK TCM Scheme in Digital Communication over AWGN Channel', International Conference on Statistics, Probability, Operations Research, Computer Science and Allied Areas, Jan 4-8, 2010.
11. M N V S S Kumar, et. al, 'Bit Error Rate Analysis of IEEE 802.11g Physical Layer for Mandatory and Optional Modes', International Conference on Statistics, Probability, Operations Research, Computer Science and Allied Areas, Jan 4-8, 2010.
12. M N V S S Kumar, et. al, 'Performance Analysis of Linear and Nonlinear Spatial Filters for Noise Reduction in Image Processing', International Conference on Statistics, Probability, Operations Research, Computer Science and Allied Areas, Jan 4-8, 2010.
13. M N V S S Kumar, et. al, 'Statistical Analysis of Underwater Acoustic Signal in the presence of Gaussian and Colored Noise', RF and Signal Processing Systems-2010, Jan 7-9, 2010.
14. M N V S S Kumar, et. al, 'Extraction of 3-Dimensional parameters by Analyzing Underwater Images obtained from SONAR fitted on Autonomous Underwater Vehicle (AUV)', RF and Signal Processing Systems-2010, Jan 7-9, 2010.
15. M N V S S Kumar, et. al, 'Conversion of Underwater 2d Sonar Images to 3d', National Conference on Advances in Signal Processing, Nov 20-21, 2009.
16. M N V S S Kumar, et. al, 'An Optimal Image Signal Processing Model for Underwater Navigation', National Conference on Advances in Signal Processing, Nov 20-21, 2009.
17. M N V S S Kumar, et. al, '2D to 3D Conversion of Underwater Images obtained from SONAR fitted on Autonomous Underwater Vehicle (AUV)', National Symposium on Acoustics NSA-09, Nov 26-28, 2009 at RCI, Hyderabad.

18. M N V S S Kumar, et. al, 'A New Image Segmentation Thresholding Technique for Precise processing of Sector Scan SONAR images', National Symposium on Acoustics NSA-09, Nov 26-28, 2009 at RCI, Hyderabad.
19. M N V S S Kumar, et. al, 'Analysis of SONAR Images to Extract 3Dimensional Parameters', International Conference on Aerospace Electronics, Communications and Instrumentation, Jan 6<sup>th</sup> – 7<sup>th</sup>, 2010, at V. R. Siddhartha engineering College.
20. M N V S S Kumar, et. al, 'Suitability of Average, Gaussian, and Median Filters for Processing Under Water Sonar Images', International Conference on Aerospace Electronics, Communications and Instrumentation, Jan 6<sup>th</sup> – 7<sup>th</sup>, 2010, at V. R. Siddhartha engineering College.
21. M N V S S Kumar, et. al, "Calculation of 3-Dimensional Aspects of Underwater Objects from 2-Dimensional Sonar Images", International conference on Embedded Systems, July 14<sup>th</sup> -16<sup>th</sup> 2010 at Coimbatore Institute of Technology.
22. M N V S S Kumar, et. al, "Reconstruction of Ambiguity Resolved Carrier Phase measurements based Ionospheric parameters using Tomography", International conference on Mobile Internet Devices, ICMID – 2010, Hyderabad, December 17<sup>th</sup> to 18<sup>th</sup> 2010.
23. M N V S S Kumar, et. al, "Wireless Underwater Channel Modeling for SONAR Data Communication", International conference on Mobile Internet Devices, ICMID – 2010, Hyderabad, December 17<sup>th</sup> to 18<sup>th</sup> 2010.
24. M N V S S Kumar, et. al, "A 16 Bit CRC Error Detection Scheme proposal for Reliable Transmission of SONAR data", National conference on Recent Advances in DSP, Embedded systems, VLSI, Image Processing, Communication & Electronics Engineering In Association with IEEE Hyderabad Section, Device – 2010, Visakhapatnam, November 13<sup>th</sup> to 14<sup>th</sup> 2010.
25. M N V S S Kumar, et. al, "GPS Position Error Analysis Comparison Using Point Solution Approach And Least Squares Approximation Algorithms For Surveying And Gagan Applications", National conference on Recent Advances in DSP, Embedded systems, VLSI, Image Processing, Communication & Electronics Engineering In Association with IEEE Hyderabad Section, Device – 2010, Visakhapatnam, November 13<sup>th</sup> to 14<sup>th</sup> 2010.
26. M N V S S Kumar, et. al, "QAA Based Underwater Targets Detection", Advances in Communciation Technologies (NCACT-12), January 9<sup>th</sup> -10<sup>th</sup> 2012.
27. M N V S S Kumar, et. al, "3D Surface Reconstruction from Point Clouds obtained from 2D Sonar Images Using Triangulation", National IETE Conference on Advanced Communication and Computer Technologies, July 6<sup>th</sup> – 7<sup>th</sup>, 2012.
28. M N V S S Kumar, et. al, "Development of Image Synthesis Algorithm for Detecting Underwater Targets from SONAR Images", National IETE Conference on Advanced Communication and Computer Technologies, July 6<sup>th</sup> – 7<sup>th</sup>, 2012.
29. M N V S S Kumar, et. al, "Edge Feature Extraction of X-ray bone image using Haar wavelet transform", National IETE Conference on Advanced Communication and Computer Technologies, July 6<sup>th</sup> – 7<sup>th</sup>, 2012.
30. M N V S S Kumar, et. al, "A New Algorithm for 3D Surface Reconstruction from Point Clouds obtained from 2D Sonar Images Using Triangulation", NAVCOM-2012, Osmania University, Hyderabad, December 19<sup>th</sup> – 20<sup>th</sup>, 2012.
31. M N V S S Kumar, et. al, "Performance analysis of Monotonic and Chirp Technology Sonar in terms of Range Resolution", NCCCI-2012, Gitam University, Hyderabad, December 20<sup>th</sup> – 21<sup>st</sup>, 2012.
32. M N V S S Kumar, et. al, "3D Surface Reconstruction from Data Set obtained from 2D Sonar Images", ARCNET-2013, NSTL, Visakhapatnam, September, 2013.
33. M N V S S Kumar, et. al, "Adaptive Hysteresis Based Handoff Algorithm for GSM Cellular System", ARCNET-2013, NSTL, Visakhapatnam, September, 2013.
34. M N V S S Kumar, et. al, "Radar Target Characteristics Extraction using Polarization Scattering Matrix", ARCNET-2013, NSTL, Visakhapatnam, September, 2013.
35. M N V S S Kumar, et. al, "A Fast Computing Vertical Handoff Algorithm Based on Dynamic New Call Blocking Probability", ARCNET-2013, NSTL, Visakhapatnam, September, 2013.
36. M N V S S Kumar, et. al, "Satellite signal emission time correction for precise geosynchronous orbital solutions", NCRRECE, CRR College of Engineering, 24<sup>th</sup> & 25<sup>th</sup>, January 2014.
37. M N V S S Kumar, et. al, "Performance analysis of Least Squares and Linear Quadratic Estimator over southern region of Indian subcontinent", HKBKCE, Bengaluru, 5 June 2014.
38. M N V S S Kumar, et. al, "Analysis of Chirp Technology Sonar mounted on AUV", IEEE NECICASPC – 2K14, Narasaraopeta Engineering College, Narasaraopeta, 4<sup>th</sup> & 5<sup>th</sup> JULY, 2014.
39. M N V S S Kumar, et. al, "Analysis of X-Ray images based on orthogonal wavelets for detection of minute fractures", IEEE NECICASPC – 2K14, Narasaraopeta Engineering College, Narasaraopeta, 4<sup>th</sup> & 5<sup>th</sup> JULY, 2014.
40. M N V S S Kumar, et. al, "Hyperbolic multilateration to determine location of an unknown target", IEEE NECICASPC – 2K14, Narasaraopeta Engineering College, Narasaraopeta, 4<sup>th</sup> & 5<sup>th</sup> JULY, 2014.

41. M N V S S Kumar, et. al, "Performance Evaluation of Standard Positioning Service GPS receiver with LS and LQ Estimators over Southern Region of Indian Sub Continent", IEEE ICSEMR 2014, Chennai, November 27-29, 2014.
42. M N V S S Kumar, et. al, "Convergence Issues of Taylor Series Method in Determining Unknown Target Location Using Hyperbolic Multi-lateration", IEEE ICSEMR 2014, Chennai, November 27-29, 2014.
43. M N V S S Kumar, et. al, "Analysis of X-Ray images using MRA based Biorthogonal wavelets for detection of minute fractures", IEEE ICSEMR 2014, Chennai, November 27-29, 2014.

**(E) Patents Applied : NA**

S. No.	Title of the Patent	Agency to which application is made	Year of application

**(F) Patents Received : NA**

S. No.	Title of the Patent	Agency which has awarded the patent	Year

10. **Areas of research interests** : Image & Signal Processing, GPS

11. **Awards** : -----

12. **Text Books authored** : -----

13. **Membership in Professional organizations** : -----

14. **Other information (if any)**

**Declaration**

I hereby declare that the information furnished is true to the best of my knowledge and belief.

**Signature**

Dr. M N V S S Kumar

Date: 24-09-2014

Station: Tekkali