

Bio-Data

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Educational Qualifications:

Degree	Subject	College/University	Remarks
P.hD	BOS, Electronics	University of Mysore, Mysore	
M.E	Electronics & Communication Engg. div. Medical Electronics	Anna University, Chennai	1 st class with distinction
B.Tech	Electronics & Communication Engg.	VR Sidhartha Engineering College, Vijayawada	1 st class
DECE	Electronics & Communication Engg.	S.V. Govt. Polytechnic College, Tirupati, AP	1 st class with distinction

Research and Teaching experience:

Name of the Organization	Post held with grade	Period	Nature of duties
National Aerospace Laboratories, Bangalore	Scientist EI Scientist C	2006-till date 2001-06	Research and Development
MSR Institute of Technology, Bangalore	Faculty	2000-01	Teaching (Signals & Systems, DSP)
Indian Institute of Technology, Chennai	Project Associate	1997-99	Design, Development and Testing

Professional Membership:

Name of the Institute/Society	Grade of membership
Institute of Electronics and Telecommunication Engineers (IETE)	Fellow (F106373)
Aeronautical society of India (AeSI)	Life Member (M16996)
Systems society of India (SSI)	Life member (LM24026)
Institute of engineers (India) (IEI)	Life member (M1281687)
Bio-Medical Society of India (BMSI)	Life member
Indian Association of Bio-Medical Scientists (IABMS)	Life member
Society for Biomaterials and Artificial Organs(Indian) (SBAOI)	Life member (LM209)
Indian Society for Advanced Material Processing (ISAMPE)	Life member (L960)
International Association of Engineers (IAENG)	Member (62101)
International Association of Computer Science and Information Technology (IACSIT)	Member (80331402)
Administrative Staff College of India (ASCI) Association	(Prg/09-10/3/91/38821)
International Association of Engineers and Scientists (IAEST)	IAEST Senior Member (012080550)

Contribution to National Projects:

1. Development of strategies/algorithms for Automatic Target Recognition (ATR) using all levels of fusion, Supra project under 11th five year plan scheme, 2009-13, Team member, Design and development, Sponsored by CSIR, New Delhi.
2. Development of New Fuel Gauging Techniques, Project Leader, Design and Development, D-0-142, Dec. 2008-Nov. 09, Sponsored by ADA, Bangalore.
3. Data Fusion for Enhanced Vision System for Transport Aircraft, Team Member, Design and Development, NWP 00 01 02, Jan. 2008-Oct. 08 Sponsored by CSIR, New Delhi.
4. Seeker Filter and Fusion for Maneuvering Target using IMM, Team Member, Design and Development, D-0-137, Sep. 2005-Sept. 07, DRDL, Hyderabad.
5. Development of Advanced Algorithms for Multi-Target Multi-Sensor Tracking and Fusion, Team Member, Applied Research, I-888-1/7, April 2004-March 08, Sponsored by CSIR, New Delhi.
6. Multi Sensor Multi Target State Estimation and Detection and Tracking Maneuvering Target, Project Leader, Design and Development, D-0-128, April 2002-July 03, Sponsored by ITR, Chandipur.
7. Development of Algorithms for Characterization and Fusion of Sensor Data for Multi Sensor Multi Target Applications, Team Member, Design and Development, D-0-127, Sep. 2001-March 04, Sponsored by DRDL, Hyderabad.
8. Design and Development of Communication aid for spastic children, Team member, Design and development, June 1997-Dec.1999 Sponsored by DST, New Delhi

Publications in Journals:

1. **VPS Naidu**, "Image Fusion Technique using Multi-resolution Singular Value Decomposition", Defence Science Journal, Vol. 61, No.5, pp.479-484, Sep. 2011.
2. **VPS Naidu**, "Maneuvering Target Tracking using Fusion of Radar and IRST Sensor Measurements", IETE Journal of Education, Vol. 51, May-Dec. 2010.
3. **VPS Naidu**, "Fusion Architectures for 3D Target Tracking using IRST and Radar Measurements", Journal of Aerospace Sciences and Technologies, Vol. 62, No. 3, pp.183-195, Aug. 2010.
4. **VPS Naidu**, "Discrete Cosine Transform-based Image Fusion", Special Issue on Mobile Intelligent Autonomous System, Defence Science Journal, Vol. 60, No.1, pp.48-54, Jan. 2010.
5. **VPS Naidu**, "Fusion of IRST and Radar Measurements for 3D Target Tracking", IE(I) Journals-AS, Vol. 90, pp.10-16, May 2009.
6. **VPS Naidu**, "Evaluation of higher order target models in radar and IRST data fusion", Journal of Aerospace Sciences and Technologies, Vol. 61, No. 2, pp.342-354, May 2009.
7. **VPS Naidu**, "Fusion of Radar and IRST Sensor Measurements for 3D Target Tracking using Extended Kalman Filter", Defence Science Journal, Vol. 59, No.2, pp.175-182, March 2009.
8. **VPS Naidu** and J.R. Raol, "Performance Evaluation of interacting multiple model Kalman filter", IETE journal of education, Vol. 49, No.3, pp.95-108, Sep-Dec. 08.
9. **VPS Naidu** and J.R. Raol, "Fusion of Out Of Focus Images using Principal Component Analysis and Spatial Frequency", Journal of Aerospace Sciences and Technologies, Vol. 60, No. 3, pp.216-225, Aug. 2008.
10. **VPS Naidu** and J.R. Raol, "Pixel-Level Image Fusion using Wavelets and Principal Component Analysis – A Comparative Analysis" Defence Science Journal, Vol.58, No.3, pp.338-352, May 2008.
11. **VPS Naidu**, Girija G. and J.R. Raol, "Data Fusion for Identity Estimation and Tracking of Centroid using Imaging Sensor Data", Defence Science Journal, Vol. 57, No.5, pp.639-652, September 2007.

12. **VPS Naidu** and J.R. Raol, "*Target Tracking with Multi Acoustic Array Sensors Data*", Defence Science Journal, Vol. 57, No.3, pp.289-303, May 2007.
13. **VPS Naidu**, Girija G. and J.R. Raol, "*Estimation of Launch and Impact Point of a Flight Trajectory using U-D Kalman Filter/Smoothing*", Defence Science Journal, Vol. 5, No.4, pp.451-463, Oct. 2006.
14. Sudesk K. Kashyap, **VPS Naidu**, Jatinder Singh, Girija G. and J.R. Raol, "*Tracking of Multiple Targets using Interacting Multiple Model and Data Association Filter*", Aeronautical Society of India (AeSI) Journal, Vol. 58, No.1, pp. 65-74, Feb. 2006.
15. **VPS Naidu**, G. Girija and JR Raol, "*Data Association and Fusion Algorithms for Tracking in presence of Measurement Loss*", Journal of the Institution of Engineers (I), Vol. 86, pp.17-28, May 2005.
16. **VPS Naidu**, "*Time-invariant Analysis of Heart Rate Time Series by Morlet Transform Technique*", Journal of the Institution of Engineers (I), Vol. 85, pp. 37-40, Nov. 2004.
17. **VPS Naidu** and MRS Reddy, "*Time-Variant Power Spectrum Analysis of Heart Rate Time Series Signal by Autoregressive Moving Average (ARMA) Method*", Sadhana Journal, 2003.
18. **VPS Naidu**, "*Bispectrum Analysis of Phase Locking in the Heart Rate Time Series Signal*", IETE Technical Review, Vol. 19, No.6, pp. 377-380, Dec. 2002.
19. **VPS Naidu**, "*Frequency Domain Analysis of Heart Rate Time Series Signal*", Journal of the Institution of Engineers (I), Vol. 83, pp. 1-4, May 2002.
20. **VPS Naidu**, "*Time-Frequency Distribution of HRV Signal by Wigner-Ville Spectral Analysis in MI Patients*", IETE Technical Review, Vol. 18, pp. 361-364, Oct. 2001.
21. **VPS Naidu** and Mahalakshmi P., "*Non-Stationary Speech Signal Processing using Time-Frequency Distribution Technique*", Journal of Acoustic Society of India, 2001.
22. **VPS Naidu**, E. Bindu and MRS Reddy, "*A High Precision R-Point Detection Algorithm*", Trends in Biomaterials & Artificial Organs, Vol. 14, No. 1, pp. 5-8, June 2000.
23. **VPS Naidu**, "*Design and Development of an Intra-aortic Balloon Pump*", Trends in Biomaterials & Artificial Organs, Vol. 13, pp. 12-16, May 1999.

Publications in conferences/workshops:

1. Durgarao and **VPS Naidu**, "Estimation of Aircraft Height and lateral Deviation with respect to Runway using Images from an Un-calibrated Camera", National Conference on Signal and Image Processing, Organized by SSA Engg. College, Surampalem, AP, pp. 181-185, 08-09 April 2012
2. **VPS Naidu**, "Image Processing Techniques for Enhanced Synthetic Vision", in the workshop on Scene matching and terrain matching for aerial vehicle organized by ADE, Bangalore, 08-09 March 2012.
3. **VPS Naidu**, PN Rao and Girija G., "Enhanced and Synthetic Vision for Remotely Piloted Vehicles", Two day UKIERI workshop on Unmanned Aircraft Systems Technologies, Organized by CSIR-National Aerospace laboratories, Bangalore, pp. 47-50, 8-9th Dec. 2011.
4. **VPS Naidu**, "*Multi-Resolution Image Fusion by FFT*", ICIP-2011, 3-5 Nov. 2011. (IEEE DOI: 10.1109/ICIP.2011.6108862).
5. **VPS Naidu**, Narayana Rao P., Sudesh Kumar Kashyap, Shanthakumar N. and Girija G., "*Experimental Study with Enhanced Vision System Prototype Unit*", ICIP-2011, 3-5 Nov. 2011. (IEEE DOI: 10.1109/ICIP.2011.6108860).
6. Narayana Rao P., Sudesh Kumar Kashyap, **VPS Naidu**, Shanthakumar N. and Girija G., "*Experimentation on Enhanced and Synthetic Vision*", Annual Seminar in Hindi (ANSH-2011), pp.8-11, Organized by National Aerospace Laboratories, Bangalore, 2011.
7. **VPS Naidu** and Garlin Delphina, "Detection of Airport Runway Edges using Line Detection Techniques", In: NACES-11, 21-23 Sep. 2011, MSRIT.
8. **VPS Naidu** and Garlin Delphina, "Implementation and Validation of Video Stabilization using Simulink", In: NACES-11, 21-23 Sep. 2011, MSRIT, Bangalore.

9. Venkatesh Chandra Naik M., Shreedarshan and VPS Naidu, "Pixel- and Fetaure- Level Image Fusion Techniques", In: NACES-11, 21-23 Sep. 2011, MSRIT, Bangalore.
10. Garlin and **VPS Naidu**, "Assessment of Color and Infrared images using No-reference image quality metrics", In proceedings of NCATC-2011, Paper No. IP05, pp.29-35, 6-7th April 2011.
11. Visvesvaran R, Vasuhi S and **VPS Naidu**, "Region-Based Multimodal Image Fusion", Paper No. IP-118, 2nd National conference on Signal Processing, Communications and VLSI Design (NCSCV10), 7-8 May 2010, Anna University, Coimbatore, India.
12. **VPS Naidu**, Abhilash, Madhuri and Giriga G., "Retinex Algorithm for High Dynamic Range Image Rendition", Proceedings of the 2nd International Conference on Intelligent Human Computer Interaction (IHCI2010), Organized by IIIT, Allahabad, Jan. 15-17, 2010, pp. 178-183, Published by Springer, ISBN:978-81-8489-540-7.
13. Madhuri and **VPS Naidu**, "A Study on Color Space Conversion", National Conference on Knowledge Science and Information Retrieval-2009, Organized by Atria Institute of Technology, Bangalore, 09-10 Oct. 2009, pp.68-73.
14. Hanumanth Abhilash, P. Swarnalatha and **VPS Naidu**, "A Study on Edge Detection Techniques in Retinex based Adaptive Filter", National Conference on Knowledge Science and Information Retrieval-2009, Organized by Atria Institute of Technology, Bangalore, 09-10 Oct. 2009, pp.63-67.
15. Mahuri, Abhilash and **VPS Naidu**, "A Study on Retinex Algorithm", First National Conference on Image Processing, Pattern Recognition and Computer Vision, 24-25 August 2009, Organized by PES College of Engineering, Mandya, India.
16. S K Kashyap, N. Shantha Kumar, **VPS Naidu**, Girija G., "Interacting Multiple Model Seeker Filter for Homing Guidance", Proceedings of ICEAE 2009, Organized by IISc, Paper No. GN36, 19-22 May 2009.
17. **VPS Naidu**, "Fusion of Radar and Infrared Search & Track Sensor Data using Kalman Filter for 3D Target Tracking", AIAA-2008-7428, AIAA Guidance, Navigation and Control Conference and Exhibit, 18-21 August 2008, Honolulu, Hawaii.
18. Shanthakumar N., Sudesh K. Kashyap, **VPS Naidu** and Girija G., "Interacting Multiple Model Seeker Filter for Tracking Evasive Targets", Paper No. INCAST2008-045, International Conference on Aerospace Sciences and Technology, Organized by NAL, Bangalore, 26-28 June 2008.
19. **VPS Naidu** and J.R. Raol, "Maneuvering Target Tracking using Fusion of Radar andIRST Data", Proceedings of the Second International Conference on Cognition and Recognition – ICCR08, Organized by PES College of Engineering, Mandya, pp. 631-645, 10-12 April 2008, Published by Allied Publishers Pvt. Ltd., New Delhi, ISBN:978-81-8424-307-9.
20. **VPS Naidu** and G. Girija, "Implementation of IMMPDAF Algorithm in LabVIEW for multi Sensor Single Target Tracking", Proceedings of the Second International Conference on Cognition and Recognition – ICCR08, Organized by PES College of Engineering, Mandya, pp. 242-249, 10-12 April 2008, Published by Allied Publishers Pvt. Ltd., New Delhi, ISBN:978-81-8424-307-9
21. Prabha Ravi and **VPS Naidu**, "Fusion of OUT of Focus Images using Contrast Measure", Proceedings of the Second International Conference on Cognition and Recognition – ICCR08, Organized by PES College of Engineering, Mandya, pp. 234-241, 10-12 April 2008, Published by Allied Publishers Pvt. Ltd., New Delhi, ISBN:978-81-8424-307-9. (got best paper award).
22. **VPS Naidu** and J.R. Raol, "Object Tracking using Image Registration and Kalman Filter", Proceedings of the International Conference on Avionics Systems, pp.389-394, 22-23 Feb. 2008, RCI, Hyderabad.
23. **VPS Naidu** and Girija G., "Fusion Architecture for 3D Target Tracking using Radar andIRST Data", Proceedings of the International Conference on Avionics Systems, pp.357-363, 22-23 Feb. 2008, RCI, Hyderabad.
24. Arunraj K. and **VPS Naidu**, "Some Spatial and Transform Domain Image Resolution Enhancement Algorithms – A Comparative Study", Proceedings of National Conference

- and workshop on Soft and Intelligent Computing, pp. 12-16, Organized by Tamilnadu College of Engineering, Coimbatore, 23-25 Jan. 2008.
25. **VPS Naidu**, "*Evaluation of Acceleration and Jerk Models in Radar and IRST Data Fusion for Tracking Evasive Maneuvering Target*", Paper No. AIAA 2008-0877, 46th AIAA Aerospace Sciences Meeting and Exhibit, 7-10 Jan. 2008, Reno, Nevada.
 26. **VPS Naidu**, "*Decentralized Multi Passive Sensor System for 3D Target Tracking*", Paper No. AIAA 2008-0258, 46th AIAA Aerospace Sciences Meeting and Exhibit, 7-10 Jan. 2008, Reno, Nevada.
 27. **VPS Naidu**, Shanthakumar N., Sudesh K. Kashyap, Girija G. and J.R. Raol, "*Interacting Multiple Model Extended Kalman Filter for Tracking Target Executing Evasive Maneuvers*", Paper No. 69, pp.285-290, International Radar Symposium India-2007 (IRSI-07), 10-13, Dec. 2007, Bangalore, India.
 28. **VPS Naidu** and C.K. Narayanappa, "*Real Time R-point Detection Algorithm in LabVIEW*", Proceedings of International Conference on Applied BioEngineering (iCAB07), Organized by Sathyabama University, Chennai, Paper No. BMI1, 5-7 Dec. 2007.
 29. **VPS Naidu** and Uma Arun, "*ECG Factorization Filtering Algorithm*", International conference on Modeling and Simulation "CITICOMS-2007", organized by Coimbatore Institute of Technology, Coimbatore, pp.151-156, 27-29 Aug. 2007.
 30. **VPS Naidu**, Girija G. and N. Santhakumar, "*Three Model IMM-EKF for Tracking Targets Executing Evasive Maneuvers*", Paper No. AIAA 2007-1204, 45th AIAA conference on Aerospace Sciences, Reno, USA, 2007.
 31. **VPS Naidu** and Sundari Tribhuvanam, "*Power Spectral Techniques for ECG Signal Analysis*", Sonata's International Conference on Computer, Communication and Controls, organized by Dept. of ECE, RVCE, Bangalore, 23-25, Nov. 2006.
 32. Sudesh, N. Shanthakumar, **VPS Naidu**, Girija G. and J.R. Raol, "*Integrated Multi Sensor Multi Target Data Fusion Analysis Software*", International Radar Symposium, India, Bangalore, 19-22 Dec. 2005.
 33. **VPS Naidu** and Prabhu Ravikala Vittal, "*ECG Smoothing based on DST and Optimal Filter*", Proceedings of the Second Control Instrumentation System Conference CISON2005, pp.518-522, 11-12 Nov. 2005.
 34. **VPS Naidu**, Mohammed Mudassar, Girija G. and J.R.Raol, "*Target Location and Identity Estimation and Fusion using Disparate Sensor Data*", AIAA Guidance, Navigation and Control Conference and Exhibit, Paper No. AIAA 2005-5841, San Francisco, California, 15-18 Aug. 2005.
 35. **VPS Naidu**, Girija G. and J.R.Raol, "*Target Tracking and Fusion using Imaging Sensor and Ground based Radar Data*", AIAA Guidance, Navigation and Control Conference and Exhibit, Paper No. AIAA 2005-5842, San Francisco, California, 15-18 Aug. 2005.
 36. **VPS Naidu** and Mahalakshmi P, "*Real Time 50Hz Multi Notch Filter for ECG Signal: Is it Really Required?*", 28th National System Conference, Vellore Institute of Technology, Vellore, pp.167-169, Paper id: NSC2004-36, 16-18 Dec. 2004.
 37. **VPS Naidu** and Mahalakshmi P, "*Time-Frequency Analysis of Heart rate Time Series*", International conference IEEE TENCON-04, Chingmai, Thailand, Nov. 21-24, 2004.
 38. Darshan Jotawar, and **VPS Naidu**, "*System Parameter Estimation in Frequency Domain*", Proceedings of PG Fest-2004, NMAMIT, Nitte, pp.EC16-19, May-2004.
 39. Vijay Kanannavar and **VPS Naidu**, "*Target Tracking with Segmentation for Imaging Sensor*", Proceedings of PG Fest-2004, NMAMIT, Nitte, pp.EC12-15, May-2004.
 40. Muhammed Muddassir, and **VPS Naidu**, "*Modeling of Infrared and Acoustic Sensors for Target Tracking*", Proceedings of PG Fest-2004, NMAMIT, Nitte, pp.CS40-43, May-2004.
 41. Sudesh Kumar Kashyap, **VPS Naidu**, Jatinder Singh, Girija G., and Raol J. R., "*Multiple Target Tracking Using IMMPDAF*", National Workshop on Tactical Missile Guidance (NWTMG), DRDL, Hyderabad, India, Feb., 2004.
 42. **VPS Naidu**, Girija.G and J.R. Raol, "*Determination of Start and End Points of a Flight Trajectory using UD Filter and R-T-S Smoother*", National system Conference, Indian Institute of Technology, Kharagpur, 16-19, Dec.,2003.

43. **VPS Naidu** and Prabha Ravi, "On-line R-point Detection Algorithm using Savitzky-Golay Smoothing Filter", National conference SPIN-03, MSRIT, Bangalore, Dec. 4-5, 2003.
44. **VPS Naidu**, P.Mahalakshmi and M.R.S.Reddy, "Sensitive Spectral Parameters in Heart Rate Time Series Analysis", National conference SPIN-03, MSRIT, Bangalore, Dec. 4-5, 2003.
45. **VPS Naidu** and M.R.S.Reddy, "Autoregressive (AR) based Power Spectral Analysis of Heart Rate Time Series Signal (HRTS signal)", International conference IEEE TENCON-03, Bangalore, Oct. 15-17, 2003.
46. **VPS Naidu**, Girija G. and J. R. Raol "Evaluation of Data Association and Fusion Algorithms for Tracking in the Presence of Measurement Loss", AIAA international Conference on Navigation, Guidance and Control, Paper No. AIAA 2003-5733, Austin, USA, August-2003.
47. **VPS Naidu**, Girija.G, J. R. Raol and R. Appavu Raj, "Data Association and Tracking for a Multi-sensor Multi-target Scenario", Symposium on "Modern Trends in Radar Technology – RADSYM-2002, JAMNAGAR, Dec-2002.
48. Girija.G, Parameswaran.V, Saraswathi, Shantha kumar.N, Jatinder Singh, Basappa, **VPS Naidu** and Sudesh Kashyap, "Modeling, Parameter Estimation and Sensor Data Fusion", Aerospace technologies and NAL – symposium in honor of Dr. T.S Prahlad, pp189-191, May-2002.
49. **VPS Naidu** and M.R.S.Reddy, "Time-Frequency Distribution of Heart Rate Time Series Signal by Morlet Transform Technique in Controls and Myocardial Infarction Patients", All India seminar on advances in Computer medicine and Medical electronics, The Institution of Engineers (I), Bhubaneswar, pp.1-5, 3rd March-2002.
50. **VPS Naidu** and M.R.S.Reddy, "STFT Analysis of HRV Signals", International conference on Biomedical Engineering, Anna University, Madras, 2001.
51. **VPS Naidu**, R.Promod and Bindu.E, "HRV Signal Through Net", International conference on ASIA-PACIFIC TELECOM-2000, Vellore Engineering college, Vellore, Dec-2000.
52. **VPS Naidu** and P.Mahalakshmi, "Design and Development of a PC-Add-On Card for dual Channel Voice Record and Play Back", International conference on ASIA-PACIFIC TELECOM-2000, Vellore Engineering college, Vellore, Dec-2000.
53. **VPS Naidu**, Mahalakshmi.P and M.R.S.Reddy, "Extraction of a Noise Free Single Cardiac Beat by Signal Averaging Technique", Proceeding of the National conference and work shop on technology today in cardiac and neurosciences, Anna University, Chennai, Dec. 2000.
54. **VPS Naidu**, Bindu.E and M.R.S.Reddy, "An Efficient Technique for R-point Detection", Proceeding of the National conference and work shop on technology today in cardiac and neurosciences, Anna University, Chennai, Dec. 2000.
55. Mahalakshmi.P **VPS Naidu** and M.R.S.Reddy, "Coronal Plane Cardiac Vector Analysis", Biomedical conference 2000, Roorkee, April 21-22, 2000.
56. **VPS Naidu**, Bindu.E, Mahalakshmi.P and M.R.S.Reddy, "Spectral Analysis of Heart Rate Variability in Myocardial Infected Patients", International conference on medical diagnostic techniques and procedures, IIT Madras, Chennai, pp.76-81, Dec.1999.
57. **VPS Naidu**, Karpagam.S and M.R.S.Reddy, "Blissymbols based Communication Aid for Spastic Children", National conference on Biomedical instrumentation, Kota, Feb-21, 1999.
58. **VPS Naidu**, "Design and Development of an Intra-aortic Balloon Pump", IX National Conference of The Society for Biomaterials & Artificial Organs (INDIA) "New Horizons in biomaterials' Research", Indian Institute of Chemical Technology, Hyderabad, 3&4 Oct. 1997.
59. **VPS Naidu**, "Effective Safety Circuit for IABP", National Conference on Bio-Medical Engineering, Anna University, Chennai, 28&29 March 1997.

Project Documents:

1. **VPS Naidu**, Narayana Rao P. and Girija G., "Image Pre-Processing, Registration and Fusion Algorithms for Enhanced Vision System", PD FC 1205, March 2012.

2. Shantha Kumar N, Sudesh K. kashyap, **VPS Naidu**, Vishal Ravindra and Girija G., "Techniques for Automatic Target Recognition", PD FC 1202, Jan. 2012.
3. Girija G., N. Shanthakumar, Sudesh K. Kashyap, VPS Naidu and PN Rao, "Proceedings of two day workshop on Unmanned Aircraft Systems Technologies", SP 1112, Dec. 2011.
4. Shantha Kumar N, PN Rao, VPS Naidu and Girija G., "New Fuel Gauging Technique for LCA", PD FC 1003, August 2010.
5. Shanthakumar N, Sudesh K Kashyap, **VPS Naidu** and Girija G., "Seeker Filter and Fusion for Maneuvering Target using IMM: Comprehensive Project report", PD FC 0808, Oct. 2008.
6. Girija G., Shanthakumar N., Sudesh K Kashyap and **VPS Naidu**, "Proceedings of two day workshop on Enhanced and Synthetic Vision for Transport Aircraft", NAL SP 0811, April 2008.
7. **VPS Naidu** and J.R. Raol, "Pixel-level Image Fusion using Wavelets and Principal Component Analysis", PD FC 0705, July 2007.
8. **VPS Naidu**, N. Shanthakumar, Sudesh K. Kashyap, G. Girija and J.R.Raol, "Interacting Multiple Model Extended Kalman Filter for Tracking with Evasive Maneuvers", PD FC 0704, July 2007.
9. **VPS Naidu**, Girija G. and N. Shanthakumar, "Three Model IMM-EKF for Tracking Targets Executing Evasive Maneuvers", PD FC 0701, Feb. 2007.
10. **VPS Naidu** and J.R. Raol, "Fusion of Radar and Infrared Search & Track Sensor Data using Kalman Filter", NAL PD FC0517, Dec. 2005.
11. **VPS Naidu**, Girija G. and J. R. Raol, "Estimation of Launch and Impact Points of a Flight Trajectory using UD Kalman Filter/Smoothing", NAL PD FC0512, July 2005.
12. **VPS Naidu** and Girija G., "Acceleration and Jerk Models for Tracking Maneuvering Targets", NAL PD FC0506, March 2005.
13. **VPS Naidu**, Girija G. and J. R. Raol, "Centroid Tracking and Target Identity Estimation using Image Sensor Data", NAL PD FC0503, March 2005.
14. **VPS Naidu**, J. Dharshan and Girija G., "On-line Parameter Estimation Using Recursive Discrete Fourier Transform", NAL PD FC0407, Sep. 2004.
15. N. Shanthakumar and **VPS Naidu** "In-Flight Estimation of Position and Attitude using INS/GPS Fusion on HANSA/AVRO", NAL PP FC040, Aug. 2004.
16. Sudesh Kumar Kashyap, **VPS Naidu**, and N. Shanthakumar, "Simulation and Estimation of Formation Flight Trajectories using IMM/DAF-Multi Sensor Multi Target Approach", NAL PD FC0405, July 2004.
17. **VPS Naidu**, G. Girija, J.R. Raol, "Evaluation of Data Association and Fusion Algorithm for Tracking in the presence of Measurement Loss", NAL PD FC0315, Oct. 2003.
18. **VPS Naidu**, N. Shanthakumar, Girija G., "Multisensor Multitarget (MSMT) state estimation", NAL PD FC0310, May 2003.

Internal Reports:

1. L. Garlin Delphina and **VPS Naidu**, "Implementation of video stabilization using bit plane matching and three step search algorithm in Simulink", MSDF Report No.: 1113/IESVS05, 22nd August 2011.
2. L. Garlin Delphina and **VPS Naidu**, "Video Stabilization using bit plane matching and three step search algorithms", MSDF Report No.: 1112/IESVS04, 20th July 2011.
3. L. Garlin Delphina and **VPS Naidu**, "Detection of Airport Runway Edges using Line Detection Techniques", MSDF Report No.: 1110/IESVS02, 27th May 2011.
4. **VPS Naidu**, "A novel Image Fusion Technique using DCT based Laplacian Pyramid", MSDF Report No.: 1107/IESVS01, 27th May 2011.
5. Narayana Rao P. and **VPS Naidu**, "Vision sensors for integrated enhanced synthetic vision system (IESVS): A survey", MSDF Report No.: 1103/IEVS28, 22nd March 2011.
6. L. Garlin Delphina and **VPS Naidu**, "Assessment of color and Infra-red images using no-reference image quality metrics", MSDF Report No.: 1102/IEVS27, 10th March 2011.
7. **VPS Naidu**, "A Study on Joint Segmentation Technique", MSDF Report No.: 1018/ATR10, 7th Nov. 2010.

8. **VPS Naidu**, "Aircraft Altitude estimation using Un-Calibrated Onboard Cameras", MSDF Report No.: 1017/IEVS25, 29th Nov. 2010.
9. **VPS Naidu**, "Image Fusion using the Measure of Focus", MSDF report No. 1011/ATR07, 6th May 2010.
10. **VPS Naidu**, "Image Pre-processing for Automatic Target Recognition", MSDF report No. 1010/ATR06, 5th May 2010.
11. **VPS Naidu**, "Evaluation of Architectures for Image Data Fusion from Dissimilar Sensors", MSDF report No. 1009/IEVS21, 5th May 2010.
12. **VPS Naidu**, P. Narayana Rao and Sudesh Kumar Kashyap, "Enhanced Vision System: Experimentation with Prototype Unit", MSDF report No. 1008/IEVS20, 4th May 2010.
13. **VPS Naidu**, P. Narayana Rao and Sudesh Kumar Kashyap, "Image Acquisition from Sensoray Frame Grabber using Simulink", MSDF report No. 1007/IEVS19, 4th May 2010.
14. P. Narayana Rao, Sudesh K. Kashyap and **VPS Naidu**, "NavStream SHARPE XR6 GPS Receiver: A Lab Setup", MSDF report No. 1006/IEVS18, 3rd May 2010.
15. N. Shanthakumar, Narayana Rao and **VPS Naidu**, "Fuel Quantity Estimation by Least Squares Method: Further Improvements", MSDF report No. 1003, 3rd March. 2010.
16. **VPS Naidu** and Adhilash, A Study on Edge Detection Techniques in RETENEX based Adaptive Filter", MSDF report No. 0916/ATR02, 20th Nov. 2009.
17. **VPS Naidu**, "Discrete Sine Transform based Image Fusion Algorithm", MSDF report No. 0915/ATR01, 19th Nov. 2009.
18. Madhuri and **VPS Naidu**, "A study on color space conversions", MSDF report No. 0913/IEVS13, 26th August 2009.
19. Abilash, Madhuri and **VPS Naidu**, "Adaptive Retinex Algorithm for High dynamic Range image rendition", MSDF report No. 0912/IEVS12, 23rd July 2009.
20. Madhuri, Abhilash and **VPS Naidu**, "Retinex Algorithm", MSDF report No. 0911/IEVS11, 14th July 2009.
21. A Ashwini Shanthi and **VPS Naidu**, "Generation of fuel height to fuel volume relationship for F1A tank using CATIA and ProE", MSDF report No. 0910, 14th July 2009.
22. **VPS Naidu**, Narayana Rao P, Ashwini Shanthi and N Shanthakumar, "Fuel Estimation by Least Squares", MSDF report No. 0907, 25th June 2009.
23. Geetha G and **VPS Naidu**, "A Study on Edge Detection", MSDF report No. 0909/IEVS10, 22nd June 2009.
24. Geetha G and **VPS Naidu**, "Infrared Contrast Enhancement using histogram Equalization", MSDF report No. 0908/IEVS09, 22nd June 2009.
25. **VPS Naidu**, "Detection of Fuel Gauging Probe Failure", MSDF report No. 0904, 25th Feb. 2009.
26. **VPS Naidu** and Ashwini Shanthi, "LCA Fuel Gauging by Least Square Estimation Filter", MSDF report No. 0903, 23rd Feb. 2009.
27. Geetha C.N. and **VPS Naidu**, "Image Contrast Enhancement using Adaptive Plateau Equalization", MSDF report No. 0901/IEVS06, 4th Feb. 2009.
28. A Ashwini Shanti and **VPS Naidu**, "Aircraft Fuel Tank Modeling and Analysis using ProE Tool", MSDF report No. 0814, 21st Nov. 2008.
29. Geetha C.N. and **VPS Naidu**, "A Study on Video Fusion using Wavelets", MSDF report No. 0813/IEVS05, 21st Nov. 2008.
30. Geetha C.N. and **VPS Naidu**, "A Study on Image- and Video-Registration using Point Mapping Procedure", MSDF report No. 0811/IEVS04, 18th Nov. 2008.
31. Jitendra Kumar and **VPS Naidu**, "Fuel Tank Modelling and Analysis for Aircraft Fuel Gauging", MSDF report No. 0809, 18th July 2008.
32. **VPS Naidu**, "Towards Vision Fusion for Integrated Enhanced Vision System – Presentation Slides", MSDF report No. 0807/IEVS01, 28th April 2008.
33. **VPS Naidu**, N. Shanthakumar and Girija G., "Improvement for LCA Fuel Gauging System: Study of possible approaches", MSDF report No. 0806, 8th April 2008.
34. Girija G., Sudesh K. Kashyap and **VPS Naidu**, "Workshop on Multi Sensor Data Fusion at MSRIT, Bangalore", MSDF report No.0803/TFYP10, 2nd Jan. 2008.
35. Girija G., Sudesh K. Kashyap and **VPS Naidu**, "Multi Sensor Data Fusion – Principles and Applications", MSDF report No.0802/TFYP09, 2nd Jan. 2008.

36. Girija G., Sudesh K. Kashyap and **VPS Naidu**, "*Aerospace Model for Advanced Integrated Vehicle Health Management*", MSDF report No.0801/TFYP08, 2nd Jan. 2008.
37. Sudesh K. kashyap, **VPS Naidu**, Girija G. and Shanthakumar N., "*Presentation Slides of 2nd PRC Meeting at TMS, DRDL, Hyderabad*", MSDF report No. 0713/TMS(DRDL) 15, 13th Dec. 2007.
38. Sudesh K. kashap and **VPS Naidu**, "*Robustness Evaluation on IMM-AEKF*", MSDF report No. 0712/TMS(DRDL) 14, 23rd Nov. 2007.
39. **VPS Naidu**, "*Decentralized Multi Passive Sensor System for 3D target Tracking*", MSDF report No. 0707B/TFYP09, 21st August 2007.
40. **VPS Naidu**, "*Variable Structured Augmented (VS AIMM) Algorithm*", MSDF report No. 0707A/TFYP08, 21st August 2007.
41. **VPS Naidu** and T. Vijeesh, "*Bearings and Frequency Data Association for Tracking (BearDAT)*", MSDF report No. 0707/TFYP07, 21st August 2007.
42. **VPS Naidu** and Arunraj K., "*Some Spatial and Transform Domain Image Resolution Enhancement Algorithms – A Comparative Study*", MSDF report No. 0706/TFYP06, 3rd July 2007.
43. **VPS Naidu** and Seema Bhaskar, "*Implementation of Mathematical Models of Ground based Radars and Formation Flight Data Simulation in LabVIEW*", MSDF report No. 0705/TFYP05, 2nd July 2007.
44. **VPS Naidu**, Arunraj K. and Seema Bhaskar, "*Estimation Flight Trajectory using IMMPDAF – Multi Sensor Single Target Approach*", MSDF report No. 0704/TFYP04, 8th June 2007.
45. N. Shanthakumar, Sudesh and **VPS Naidu**, "*Integration of IMM-MAEKF with DRDL ASTRA 6DOF Simulation Code for Closed Loop Performance Evaluation*", MSDF report No. 0701/(DRDL)12, 8th March 2007.
46. **VPS Naidu** and Seema Bhaskar, "*LabVIEW based PC to PC Communication using UDP*", MSDF report No. 0701/TFYP 03, 16th January 2007.
47. **VPS Naidu** and N. Shanthakumar, "*Performance of IMMEKF with Constant Turn Model for Tracking Target Executing Evasive Maneuver*", MSDF report No.:0609/TMS(DRDL)08, 25th August 2007.
48. **VPS Naidu** and Ravi Prakash, "*Image Registration Algorithms for Target Tracking*", MSDF report No. 0607/TFYP02, 27th July 2006.
49. **VPS Naidu** and N. Shanthakumar, "*Performance Evaluation of IMM-EKF with Realistic Seeker Noise Characteristics and Higher Maneuver Magnitudes*", MSDF report No.:0602/TMS(DRDL)04, 17th April 2006.
50. **VPS Naidu** and Girija G., "*Three model IMM-Extended Kalman filter for Tracking Targets Executing Evasive Maneuvers*", MSDF report No.:0601/TMS(DRDL)03, 24th Jan 2006.
51. **VPS Naidu** and Hema V., "*Comparison of Search Algorithms for Image Registration*", MSDF report No.:0503/TFYP01, 22nd Feb 2005.
52. Sudesh Kumar Kashyap, **VPS Naidu**, and N.Shanthakumar, "*Simulation of plot Data based Multisensor Tracking Scenario and Fusion-feasibility*", MIE: report No.: 0404/(IACCS 01), 14th May 2004.
53. **VPS Naidu**, N.Shanthakumar, Girija.G, "*Fusion of Multi Target Track Data from SF and MAP radars*", MIE: report No.: 0402/(DRDL 21), 22th April 2004.
54. Sudesh K kashyap, **VPS Naidu** and Jatinder Singh, "*Algorithms for Multiple Maneuvering Target Tracking in Clutter*", MIE: report No.:0304/DRDL 19), 21st Oct. 2003.
55. **VPS Naidu**, N.Shanthakumar, Girija.G, "*IMM Algorithm Evaluation by Monte Carlo Simulation*", MIE: report No.: 0301/(ITR 04), 5th Nov. 2003.
56. **VPS Naidu**, N.Shanthakumar, Girija.G, "*Detection and Tracking of Maneuvering Targets*", MIE: report No.: 0303/(ITR 03), 24th April 2003.
57. **VPS Naidu**, Girija.G, "*Clarification on ITR Program for State Estimation in MSMT Scenario*", MIE: report No.: 0213/(ITR 02), 11th Nov. 2002.
58. **VPS Naidu**, Girija.G, "*Program for Data Association in a Multi Sensor – Multi Target Scenario*", MIE: report No.: 0212/(ITR 01), 30th August 2002.
59. **VPS Naidu**, Girija.G, "*Estimation of Launch and Impact points of a Flight Trajectory using UD filter and T-T-S Smoother*", MIE: report No.: 0206/(DRDL 10), 10th June 2002.

60. **VPS Naidu**, "Noise Characterization of Data from GPS and KAMA Radars", MIE: report No.: 0203/(DRDL 07), 19th April 2002.
61. Shantha Kumar.N, Jatinder Sigh, **VPS Naidu** and Girija.G, "Second PRC meeting presentation material", MIE: report No.: 0203/(DRDL 05).

Books/Chapter/Papers

1. A paper in Springer, ISBN:978-81-8489-540-7.
2. "Chapter-10: Pixel and feature level image fusion concepts and algorithms and Chapter-11: Performance evaluation of image-based data fusion systems" an invited chapters in the edited volume titled "Multi-sensor data fusion with Matlab", edited by Dr. JR Raol, CRC Press, Taylor & Francis group, 2010. ISBN 978-1-4398-0003-4.
3. Proceedings of "Two Day Workshop on Enhanced and Synthetic Vision for Transport Aircraft", SP 0811, 25-26 April 2008, Editors: Girija G., Shanthakumar N., Sudesh K. Kashyap and VPS Naidu.
4. Abstract: Towards Vision Fusion for Integrated Enhanced Vision System, Book of Abstracts, *Two Day Workshop on Enhanced and Synthetic Vision for Transport Aircraft*, Organized by MSDF Group, FMCD, NAL, Bangalore during 25-26 April 2008.
5. A paper in "Modeling and Simulation", Vol.II, pp.151-156, ISBN 81-8424-219-0, Allied Publishing pvt. Ltd., Chennai, 2007.
6. A paper in "Medical Diagnostic Techniques and Procedures", pp.76-81, ISBN 978-81-7319-350-7, edited by Dr. Meghasingh et.al., Published by Narosa, 2000.

Invited Lectures:

1. Keynote speech on "Digital Image Processing Applications" on the occasion of one day workshop on Digital Image Processing at Atria Institute of Technology, Bangalore on 17th March 2012
2. Keynote speech on "Multi Sensor Data Fusion", on the occasion of National Conference on Advances in Communication and Computing (NCACC)-2011, Karpagam College of engineering, Coimbatore, on 1st Oct. 2011.
3. Invited lecture on "Towards Vision Fusion for Integrated Enhanced Vision System", Two day workshop on Enhanced and Synthetic Vision for Transport Aircraft, 25-26 April 2008, Organized by Multi Sensor Data Fusion Group, National Aerospace Laboratories, Bangalore.
4. Invited lecture on "Heart Rate Time Series Analysis", Medsym-2008 (technical symposium) organized by MSRIT, Bangalore, 8th March 2008.
5. Invited lecture on "Circulatory Assist Devices", Medsym-2008 (technical symposium) organized by MSRIT, Bangalore, 8th March 2008.
6. Invited lecture on "Image Tracking and Fusion", work shop on Multi Sensor Data Fusion organized by MSRIT, Bangalore, 27-28 Dec. 2007.
7. Invited lecture on "Evaluation of Data Association and Fusion Algorithm for Target Tracking", at Annual Technical Symposium Organized by IEEE student branch of Gogte Institute of Technology, Belgaum on 18th March 2006.
8. Invited lecture on "Intra-aortic Balloon Pump", at Annual Technical Symposium Organized by IEEE student branch of Gogte Institute of Technology, Belgaum on 18th March 2006.
9. Invited lecturer on "Multisensor-Multitarget Tracking: Principle & Practice", at ITR, Chandipur as part of CEP course on 17th Sep. 2003.
10. Invited lecture on "Intra-aortic Balloon Pump", Workshop on Medical technologies-A new dimensions at Dept. of Medical Electronics, MSRIT, Bangalore.
11. Invited lecture on "Intra-aortic Balloon Pump", Short term training program on recent advances in medical diagnostic techniques at MA college of Engg., Kothamangalm, Kerala.

ME/M.Tech Thesis Guided:

1. Venkatesh Chandra Naik, "Feature level image fusion", M.Tech student, Dept. of Elec. And Comm. Engg., MSRIT, Bangalore, June 2011.
2. Visvesvaran, "Region based Multimodal Image Fusion", ME student, Dept. Avionics, Madras Institute of Technology, Anna University, Chennai, May 2010.
3. Praveen Sindagi, "Low Observable Target Motion Analysis in Presence of Clutter", M. Tech student, Dept. of ECE, BMS College of Engg., Bangalore, June 2008.
4. Jyothirmai Garapati, "Study of Image Pyramids and Centroid Detection Algorithm Towards Object Tracking", M.Tech Student, Dept. of ECE, Bapatla Engg. College, Bapatla, May 2008.
5. Virupaxi B Dalal, "Development of sensor Mathematical models", M.Tech student, Dept. of ECE, Gogte Institute of Technology, Belgaum, May 2006.
6. Umamaheshwarayya S. Hiremath, "Development of Obstacle Avoidance System", M.Tech student, Dept. of ECE, Gogte Institute of Technology, Belgaum, May 2006.
7. Muhammed Muddassir, "Estimation of target Location and Identity using Sensor Data", M. Tech student, Dept. of Studies in Computer science, University of Mysore, Mysore, Oct. 2004.
8. Sundari Tribuvanam, "ECG Signal Analysis and Classification based on Power Spectral Techniques", M.E student, Dept. of ECE, UV College of Engineering, Bangalore, Aug. 2004.
9. Vijay Kanannavar, "Target Tracking with Imaging Sensor", M. Tech student, Dept. of PG studies, NMAMIT, Nitte, June 2004.
10. J. Dharshan, "On-line Parameter estimation Using Recursive Discrete Fourier Transform", M. Tech student, Dept. of PG studies, NMAMIT, Nitte, June 2004.

AMIE: Guided 9 projects**Awards:**

1. IETE-Student's Journal award – 2011 for the paper titled "Maneuvering Target Tracking using Fusion of Radar and IRST Sensor Measurements", IETE Journal of Education, Vo. 51, May-Dec. 2010.
2. INSA Visiting Scientist at IIT, Kharagpur from 19th July to 18th Nov.2010.
3. IETE-Student's Journal award – 2009 for paper titled "Performance Evaluation of interacting multiple model Kalman filter" co-authored by J.R.Raol, IETE journal of education-2009.
4. Award for EXCELLENCE in "RESEARCH", for Design, Development and Evaluation of kinematic and image data fusion techniques for tracking a moving target, by National Aerospace Laboratories, 2009.
5. Best paper award for paper titled "Fusion of OUT of Focus Images using Contrast Measure", co-authored by Prabha Ravi from MSRIT at Proceedings of the Second International Conference on Cognition and Recognition – ICCR08, Organized by PES College of Engineering, Mandya, 10-12 April 2008
6. Award for Outstanding Performance in Design, Development and Project Execution for Development of Algorithms for Characterization and Fusion of Sensor Data for Multi Sensor Multi Target Applications-2005.
7. Team member, CSIR Technology Shield, by CSIR, 2003.

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1. GUI based multisensory multitarget – MsmtDat v1.0, (475/05 cosw).

Service Rendered

1. Editor, International Journal of Electronic Communication and Computer Engg., International Journal of Wired and Wireless Communication, International Journal of Information Engineering (ISSN:2225-8442)
2. Member, Board of Studies in Computer Science and Engineering (M.Tech), Amrita School of Engg., Amrita Vishwa Vidyapeetham University, Kollam, from Jan.2012
3. Chief Guest and keynote speaker, National Conference on Advances in Communication and Computing (NCACC)-2011, Karpagam college of engineering, Coimbatore, on 1st Oct. 2011.
4. Session chair and Project evaluator, 34th series of Students Projects Programme (SPP), Organized by Karnataka State Council of Science and Technology (KSCST), IISC Campus, Bangalore at PESITM, Shimoga, Aug. 19-20, 2011.
5. Session Chair, National Conference on Knowledge Science and Information Retrieval-2009, Organized by Atria Institute of Technology, Bangalore, 09-10 Oct. 2009.
6. Session chair and Project evaluator, 32st series of Students Projects Programme (SPP), Organized by Karnataka State Council of Science and Technology (KSCST), IISC Campus, Bangalore, during 2009.
7. Member, Board of Studies in Medical Electronics, MS Ramaiah Institute of Technology, Bangalore, during 2008-09.
8. Reviewer, Defence Science Journal, DESIDOC, New Delhi, 2008-09
9. Reviewer, AIAA guidance, Navigation and Control conference-09
10. Reviewer, ISIEA-09, ISIEA2011, ICFOCS2011
11. Liaison officer, AeroIndia-03 and 09
12. Session chair and Project evaluator, 31st series of Students Projects Programme (SPP), Organized by Karnataka State Council of Science and Technology (KSCST), IISC Campus, Bangalore, during 2008.
13. Internal Member, Divisional Scientific Committee for Flight Mechanics and Control Division, National Aerospace Laboratories, Bangalore, during 2007-till date.
14. Jury member and Project evaluator, Students Projects Programme (SPP), Organized by Karnataka State Council of Science and Technology (KSCST), IISC Campus, Bangalore, during 2007.
15. Member Secretary, Divisional Scientific Committee for Flight Mechanics and Control Division, National Aerospace Laboratories, Bangalore, during 2004-2007.
16. Member, Board of Studies in Electronics and Communication Engineering, Vellore Institute of Technology, Vellore, during 2003-2005.
17. Question paper setter and examiner, National Institute of Foundry and Forge Technology, Ranchi in 2003 & 2005.