Praveen Babu Choppala

B.Tech., M.E., PhD

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My delight is in unravelling the mysteries of nature through scientific thought and multidisciplinary research

ACADEMIC SUMMARY

Count	Item
06	Books
06	Patent grants (1) / patent publications (5)
88	Google Scholar impact 88 citations
06	Google Scholar h-index
56	Peer Reviewed Journal/ conference proceedings
10	Countries visited on academic purposes
5,00,000	Worth industrial research projects
06	Academic awards totalling over INR 44,00,000
Senior Member	IEEE

I. EXPERIENCE AND EDUCATION

EXPERIENCE

S.No	Organisation	Designation	Period	Duration
1	Wellfare Institute of Science Technology and Management, Visakhapatnam	Professor, Dept. of E.C.E.	18/4/2019 – Present	4Y 3M
2.	Anil Neerukonda Institute of	Associate Professor, Dept. of E.C.E.	20/11/2017 – 17/04/2019	1Y 5M

	Technology and Science, Visakhapatnam			
3.	University of New South Wales, Sydney, Australia	Postdoctoral Fellow (equivalent Assistant Professor Scale)	16/09/2015 – 15/08/2017	2Y 0M
4.	Victoria University of Wellington, New Zealand	Postdoctoral Research Assistant	20/07/2014 – 10/07/2015	1Y 0M
5	Victoria University of Wellington, New Zealand	Academic Tutor & Full-time Research Scholar	01/07/2011 – 26/06/2014	3Y 0M
6	Raghu Engineering College, Visakhapatnam	Associate Professor	21/03/2011 – 28/04/2011	0Y 1M
7	Raghu Engineering College, Visakhapatnam	Assistant Professor	27/08/2008 – 20/03/2011	2Y 7M

EDUCATION

S.No	Degree	Specialisation	Board/ University	CGPA	Year of passing	Merit
1	PhD	Engineering and Computer Science	Victoria University of Wellington, New Zealand	N/A	11/12/2014	Doctoral Completion Award
2.	M.E.	VLSI Design	Karunya University	9.28 CGPA	05/07/2008	Chancellor Award & First with Distinction
3.	B.Tech.	Electronics & Communication Engineering	JNTU, Hyderabad	70.99	01/06/2005	First with Distinction
4	Intermediate	Maths, Physics, Chemistry	Sri Chaitanya Junior College, Visakhapatnam	86.20 %	06/06/2001	First with Distinction
5	S.S.C	School	S.F.S. High School, Visakhapatnam	79.50 %	10/06/1999	First

II. RESEARCH AND PUBLICATIONS

BOOKS/ THESES

1. **Praveen Babu Choppala**, Srinivasa Gantenapalli, and James Stephen Meka, "Recent Developments in Reducing Random Valued Impulse Noise in Color Images - The need for speed," Lambert Academic Publishing, 2023. ISBN: 978-620-6-75245-5.

2. **Praveen Babu Choppala** and James Stephen Meka, "Seven Innovative Technologies Towards Human Advancement and Smart Living," Kindle Direct Publishing, 2022, ISBN: 979-83-55323-90-5.

3. James Stephen Meka, **Praveen Babu Choppala**, Demudunaidu Chukka, "Filtering methods to remove noise in digital colour images", GCS Publishers India, 2022, ISBN: 978-93-94304-34-5.

4. **Praveen Babu Choppala** and James Stephen Meka, "Probability Theory and Random Processes," Kindle Direct Publishing, 2021, ISBN: 9798791067487. https://www.amazon.com/dp/B09P29RLKY.

5. James Stephen Meka and **Praveen Babu Choppala**, "Fundamentals of Image Processing," Kindle Direct Publishing, 2021, ISBN: 9798401307514.

https://www.amazon.com/dp/B09Q1V9447.

6. **Praveen Babu Choppala**, "Bayesian multiple target tracking," PhD Thesis, Victoria University of Wellington, New Zealand, 2014.

PATENTS

1. James Stephen Meka, Joseph Noel, **Praveen Babu Choppala**, and Prasad Reddy PVGD, "Smart Plastic Waste Management Machine," Indian Patent, Issued by the Government of India, CBR 202536, Applied on 25/02/2023. Issued on 17/05/2023, Design Number 380128-001.

2. **Praveen Babu Choppala** Manikanta Gudivada, Sowmya Injeti, "A Smart Drip Irrigation System Based on Web-of-Things (WoT) and Method Thereof," Indian Patent Application Number 202341007076 A, Publication Date 24/02/2023.

3. Mohammed Ashik, **Praveen Babu Choppala**, and Ramesh Manapuram, "A method for tracking electrocardiogram signals using a resampling-free particle filter," Indian Patent Application No. 202341019107 A, Publication Date 31/03/2023.

4. Srinivasa Rao Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, "A system for random valued impulse noise reduction in digital colour images using sliced median filtering technique," Indian Patent Application Number 202341015447 A, Publication Date 17/03/2023.

5. James Stephen Meka, **Praveen Babu Choppala**, Demudunaidu Chukka, Pallam Setty, and Prasad Reddy PVGD, "A Probabilistic Method for Reducing Impulse Noise in Digital Color Images," Indian Patent Application Number No.202241013042 A. Publication Date : 18/03/2022.

6. James Stephen Meka, **Praveen Babu Choppala**, Srinivasa Rao Gantenapalli, Y. Vushnu Tej, and Prasad Reddy PVGD, "A system for noise reduction in colour images," Indian Patent Application Number 202241004435 A, Publication Date 04/02/2022.

PEER-REVIEWED JOURNAL PUBLICATIONS

1. Srinivasa Rao Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, "Random valued impulse noise reduction in satellite colour images using fast degree of aggregation filtering approach," accepted for publication in the International Journal of Intelligent Systems and Applications in Engineering, Vol 11, No. 3S, pp. 1--7, 2023. ISSN: 2147-6799, Impact Factor: 0.742. (Scopus Indexed).

2. Nagarujuna Tanikonda, **Praveen Babu Choppala**, and Chilakala Sudhamani, "Analyzing the Characteristics of MIMO Antennas: Enhancing Isolation and Employing Soft Computing Techniques via a Systematic Review," accepted for publication in the International Journal of Intelligent Systems and Applications in Engineering, 2023. ISSN: 2147-6799, Impact Factor: 0.742. (Scopus Indexed).

3. Srinivasa Rao Gantenapalli and **Praveen Babu Choppala**, "Accelerated Impulse Noise Reduction in Digital Color Images using Sliced Anomaly Detection and Multi-Channel Median Filtering," manuscript accepted for publication in Bulletin of Electrical Engineering and Informatics, 2023.

4. Demudunaidu Chukka, **Praveen Babu Choppala**, James Stephen Meka, and Srinivasa Rao Gantenapalli, "NEWS Directional Filtering for Noise Reduction in Digital Color Images with Application to Medical Diagnostics in MRI Scanning," Journal of European Chemical Bulletin, Vol 12 (Special Issue 10), pp. 1573--1583, 2023. DOI: - 10.48047/ecb/2023.12.si10.00186. ISSN: 2063-5346. Impact Factor 0.4. (Scopus Indexed).

5. Vijaya Nirmala Gera, Rajesh Kumar P., and **Praveen Babu Choppala**, "A study of efficient classification of soil images using Gabor convolutional neural networks," Journal of European Chemical Bulletin, Vol 12 (Special Issue 10), pp. 1584--1593, 2023. DOI: - 10.48047/ecb/2023.12.si10.00187. ISSN: 2063-5346. Impact Factor 0.4. (Scopus Indexed).

6. Mohammed Ashik, Ramesh P. Manapuram, and **Praveen Babu Choppala**, "Monte Carlo based Kalman filtering with proper weighting estimation," Journal of European Chemical Bulletin, Vol

12 (Special Issue 1, Part -- B), pp. 1862--1872, 2023. DOI: 10.31838/ecb/2023.12.s1-B.182. ISSN: 2063-5346. Impact Factor 0.4. (Scopus Indexed).

7. **Praveen Babu Choppala**, "A weight-based cutoff resampling method for accelerated particle filtering," Journal of Fluctuation & Noise Letters, Vol. 22, No. 5, pp. 2350037(1)--2350037(13), October, 2023. DOI: 10.1142/S0219477523500372. ISSN: 1793-6780, Impact Factor: 1.652. (Web of Science & Scopus Indexed).

8. Mohammed Ashik, Ramesh P. Manapuram, and **Praveen Babu Choppala**, "Observation leveraged resampling-free particle filter for tracking of rhythmic biomedical signals," International Journal of Intelligent Systems and Applications in Engineering, Vol. 11, No. 4S, pp. 616--624, Feb 2023. ISSN: 2147-6799. Impact Factor: 0.742. (Scopus Indexed).

9. Mohammed Ashik, Ramesh P. Manapuram, and **Praveen Babu Choppala**, "A study of Bayesian filtering methods applied for biomedical signal diagnosis," International Journal of Neuroquantology, Vol. 20, No. 16, pp. 5917--5931, Sep 2022. DOI: 10.48047/NQ.2022.20.16.NQ880602. ISSN: 1303-5150. Impact Factor: 0.442. (Scopus Indexed).

10. Demudunaidu Chukka, James Stephen Meka, Pallam Setty, and **Praveen Babu Choppala**, "Bayesian selective median filtering for reduction of impulse noise in digital colour images," International Journal of Image and Graphics, Vol 22, No. 05, pp. 2450026(1)--2450026(33), 2022. DOI: 10.1142/S0219467824500268. ISSN: 1793-6756. Impact Factor 1.469. (Scopus Indexed).

11. Anil Katta and **Praveen Babu Choppala**, "A Modified Bow-Tie Slot Loaded Cavity Backed Antenna Based on SIW," J. Progress in Electromagnetics Research C, Vol. 125, 25-34, 2022, DOI:10.2528/PIERC22071601. ISSN: 1937-8718. Impact Factor 1.68. (Web of Science & Scopus Indexed).

12. Anil Katta and **Praveen Babu Choppala**, "Development of a Low Profile Wideband SIW Cavity-Backed I-Shaped Slot Antenna," J. Progress in Electromagnetics Research C, Vol. 123, pp. 227-236, 2022. DOI: 10.2528/PIERC22072601. ISSN: 1937-8718. Impact Factor 1.68. (Web of Science & Scopus Indexed).

13. **Praveen Babu Choppala** Paul Teal, and Marcus Frean, "Resampling and Network Theory," IEEE Transactions on Signal and Information Processing Over Networks, Vol. 8, pp. 106-119, 2022. DOI: 10.1109/TSIPN.2022.3146051. ISSN: 2373-776X. Impact Factor 3.301, Cite Score 7.7. (Web of Science & Scopus Indexed).

14. Y. Vishnu Tej, James Stephen Meka, P.V.G.D. Prasad Reddy, and **Praveen Babu Choppala**, "A Novel Methodology for Denoising Impulse Noise in Satellite Images through Isolated Vector Median Filter with k-means Clustering," International Journal of Engineering Trends and Technology (Scopus Indexed), Vol. 70, No. 8, pp. 272-283, 2022. DOI: 10.14445/22315381/IJETT-V70I8P229. ISSN: 2231-5381. Impact Factor 0.72. (Scopus Indexed).

15. Srinivasa Rao Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, “Selective mean filtering for reducing impulse noise in digital colour images,” International Journal of Image and Graphics (Scopus Indexed), Vol. 22, No. 5, 2022. DOI: 10.1142/S0219467823500493. ISSN: 1793-6756. Impact Factor 1.469. (Scopus Indexed).

16. Srinivasa Rao Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, “Anomaly Detection and Interpolation Algorithm for Random Valued Impulse Noise Reduction in Digital Color Images,” Journal of NeuroQuantology, Vol. 19, No. 12, pp. 318–328, December 2021. DOI:10.48047/nq.2021.19.12. NQ21223. ISSN: 1303-5150, Impact Factor 0.442. (Scopus Indexed).

17. Srinivasa Rao Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, “An extensive survey of the most effective methods for removing impulsive noise from digital colour images,” Journal of Interdisciplinary Cycle Research, Vol. 13, No. 8, pp. 1891–1917, 2021. DOI:18.0002.JICR.2021.V13I8.008301.317123409. ISSN: 0022-1945, Impact Factor 6.2. (UGC Care Approved Group II).

18. Demudunaidu Chukka, James Stephen Meka, Pallam Setty, and **Praveen Babu Choppala**, “The Role of Machine Learning and Deep Learning Tools on Medical Image Processing Approaches: An Analytical Review,” Journal of Cardiovascular Disease Research, Vol. 12, No. 3, pp. 3239–3254, 2021. DOI: 10.31838/jcdr.2021.12.03.425. ISSN: 0976-2833, Impact Factor 0.15. (Scopus Indexed).

19. Demudunaidu Chukka, James Stephen Meka, Pallam Setty, and **Praveen Babu Choppala**, ``A survey of impulse noise reduction methods in digital images," Journal of Critical Reviews, Vol. 7, No. 8, pp. 3783–3800, 2020. DOI: 10.31838/jcr.07.08.596. ISSN-2394-5125. Impact Factor 1.091. (Scopus Indexed).

20. **Praveen Babu Choppala**, James Stephen Meka, and P.V.G.D. Prasad Reddy, “Isolated Vector Median Filtering for Noise Reduction in Digital Color Images,” International J. Advanced Science and Technology, Vol. 29, No. 6, pp. 8305--8317, 2020. ISSN: 2207-6360, Impact Factor 0.475. (Scopus Indexed).

21. Hari Buddha, James Stephen Meka, and **Praveen Babu Choppala**, ``OCR image enhancement and implementation using the CLAHE algorithm," Mukt Shabd Journal, Volume 9, No. 4, April, 2020. DOI: 10.37896/MSJ. ISSN 2347-3150. Impact Factor 4.6. (UGC Care Approved).

22. **Praveen Babu Choppala**, James Stephen Meka, and P.V.G.D. Prasad Reddy, “Vector Isolated Minimum Distance Filtering for Image De-Noising in Digital Color Images,” International J. Recent Technology and Engineering, Vol. 8, No. 4, pp. 2402-2405, 2020. DOI: 10.35940/ijrte.D7174.118419. ISSN: 2277-3878. Impact Factor. 0.675. (Scopus Indexed).

23. **Praveen Babu Choppala**, David Gunawan, Jun Chen, Minh-Ngoc Tran, and Robert Kohn, "Bayesian inference for state space models using block and correlated pseudo marginal methods," arXiv 1612.07072, 2016. DOI: 10.48550/arXiv.1612.07072.

CONFERENCE PROCEEDINGS

1. Vijaya Nirmala Gara, **Praveen Babu Choppala**, Hemasree P., and Rajesh Kumar P., "Soil classification using GABOR convolutional neural network," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQ1LFF.

2. **Praveen Babu Choppala** et al., "Performance comparison of sorted weighting lookahead particle filter and minimalistic resampling particle filter," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

3. Srinivasa Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, "Deep learning based image denoising for medical images: A convolutional neural network approach," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

4. Nagarjuna Tanikonda, **Praveen Babu Choppala**, and Chilakala Sudhamani, "A systematic review on characteristics of MIMO antenna with isolation enhancement techniques and soft computing approaches," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

5. Anil Katta and **Praveen Babu Choppala**, "A study of performance improvement methods for cavity backed SIW slot antennas," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

6. **Praveen Babu Choppala** et al., "Polyhouse control using IoT," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

7. **Praveen Babu Choppala** et al., "Geo-fencing in vehicles using Arduino," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

8. **Praveen Babu Choppala** et al., "A study on Bayesian filters for state estimation," in Proc. National Conference on Design Thinking: Trans-Disciplinary Challenges and Opportunities (in Engineering), Visakhapatnam, July 2023. ASIN: B0CB9KQLFF.

9. Nagasubhadra Uppalapati, **Praveen Babu Choppala**, and Lakshmi Krishnan, "Sequential Monte Carlo with 3σ state space limited sampling for Bayesian estimation of latent Markov processes," manuscript accepted for publication in 26th IEEE International Conference on Signal Processing – Algorithms, Architectures, Arrangements and Applications, Poland, 2023.

10. Ashik Mohammed, Ramesh Manapuram, and **Praveen Babu Choppala**, "Resampling-free fast particle filtering with application to tracking rhythmic biomedical signals," in Proc. 9th IEEE International Conference on Biosignals, Images, and Instrumentation, Chennai, India, March 2023.

11. **Praveen Babu Choppala**, Srinivasa Gantenapalli, James Stephen Meka, and Paul Teal, "Fast image denoising using peer group filtering applied to weather forecasting in radar imagery," in Proc. 3rd IEEE (DRDO organised) International Conference on Range Technology, Chandipur, India, February 2023.

12. Srinivasa Gantenapalli, **Praveen Babu Choppala**, Vandana Gullipalli, and James Stephen Meka, "Row-wise corrective median filtering for fast impulse noise reduction in colour images," in Proc. 8th IEEE International Conference on Signal Processing and Communication, Lucknow, India 2022. DOI: 10.1109/ICSC56524.2022.10009225.

13. **Praveen Babu Choppala**, Vandana Gullipalli, Srinivasa Gantenapalli, and James Stephen Meka, "A fast method for reducing noise in digital colour images using anomaly detection and interpolation," in Proc. IEEE International Conference of Multimedia, Signal Processing and Communication Technologies, Aligarh, India, 2022. 10.1109/IMPACT55510.2022.10029141.

14. Srinivasa Gantenapalli, **Praveen Babu Choppala**, Vandana Gullipalli, James Stephen Meka, and Paul Teal, "Fast degree of aggregation filter for reducing impulse noise in satellite images," in Proc. IEEE Conference on Information and Communication Technology, Gwalior, India, 2022. DOI: 10.1109/CICT56698.2022.9997912

15. Srinivasa Gantenapalli, **Praveen Babu Choppala**, Vandana Gullipalli, James Stephen Meka, and Paul Teal, "A fast method for impulse noise reduction in digital colour images using anomaly median filtering," in Proc. IEEE International Conference on Image Processing, Applications and Systems, Italy, 2022. DOI: 10.1109/IPAS55744.2022.10052947.

16. Srinivasa Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, "A Review of Vector Median Filter Methods for Denoising Digital Color Images," in Proc. IEEE International Conference on Emerging Techniques in Computational Intelligence, India, 2022.

17. Srinivasa Gantenapalli, **Praveen Babu Choppala**, and James Stephen Meka, "Vector median Filtering Methods for Denoising Digital Color Images: A review," in Proc. Springer International Conference on Advances in Communications, Computing & Electronic Systems, India 2022.

18. Vijaya Gera, **Praveen Babu Choppala**, Rajesh Kumar P., and Paul Teal, "Approximate Kalman filtering for Bayesian state estimation in nonlinear measurement models," in Proc. IEEE

International Conference on Range Technology (organised by DRDO, India), pp. 1-6, 2021. DOI: 10.1109/ICORT52730.2021.9582108.

19. Ramakrishna Gurajala, **Praveen Babu Choppala**, James Stephen Meka, Paul Teal, "A sorted weighting lookahead sampling scheme for accurate and fast particle filtering," in Proc. IEEE International Conference on Range Technology (organised by DRDO, India), pp. 1-6, 2021. DOI: 10.1109/ICORT52730.2021.9581396.

20. Ramakrishna Gurajala, **Praveen Babu Choppala**, James Stephen Meka, and Paul Teal, "Derivation of the Kalman filter in a Bayesian filtering perspective," in Proc. IEEE International Conf. on Range Technology (organised by DRDO, India), pp. 1-5, 2021. DOI: 10.1109/ICORT52730.2021.9581918.

21. Ramakrishna Gurajala, **Praveen Babu Choppala**, James Stephen Meka, and Paul Teal, "A Fast and Unbiased Minimalistic Resampling Approach for the Particle Filter," in Proc. IEEE International Conference on Signal and Image Processing Applications (ICSIPA), Malaysia, pp. 227-232, 2021. DOI: 10.1109/ICSIPA52582.2021.9576807.

22. **Praveen Babu Choppala**, Vandana Gullipalli, Manikanta Gudivada, and Bhargav Kandregula, "Design of Area Efficient, Low Power, High Speed and Full Swing Hybrid Multipliers," in Proc. IEEE International Conference on Computing, Communication, and Intelligent Systems (ICCCIS), 2021. DOI: 10.1109/ICCCIS51004.2021.9397106.

23. **Praveen Babu Choppala**, Paul Teal, and Marcus Frean, "Adapting the multi-Bernoulli filter to phased array observations using MUSIC as pseudo-likelihood," in Proc., IEEE 17th International Conference on Information Fusion, Spain, 2014.

24. **Praveen Babu Choppala**, Paul Teal, and Marcus Frean, "Particle filter parallelisation using random network based resampling," in Proc., IEEE 17th International Conference on Information Fusion, Spain, 2014.

25. **Praveen Babu Choppala**, Paul Teal, and Marcus Frean, "Soft systematic resampling for accurate posterior approximation and increased information retention in particle filtering," in Proc. IEEE Workshop on Statistical Signal Processing, Australia, 2014. DOI: 10.1109/SSP.2014.6884625.

26. **Praveen Babu Choppala**, Paul Teal, and Marcus Frean, "Soft resampling for improved information retention in particle filtering," in Proc. 38th IEEE International Conf. on Acoustics, Speech and Signal Processing (ICASSP), Vol. 13, 2013, pp. 4036--4040. DOI: 10.1109/ICASSP.2013.6638417.

27. **Praveen Babu Choppala**, "Soft resampling," in Proc. IEEE NZ Central Section Post Graduate Student Conference, Wellington, New Zealand, 2012 (Best presentation award).

28. Karthigai Kumar, P. Bhaskaran, and **Praveen Babu Choppala**, “A novel argument to use 8-bit media processor for low power VLSI design,” in Proc. IAENG 1st International Conference for Engineers and Computer Scientists, Hong Kong, 2008.

29. **Praveen Babu Choppala**, ``8-bit media processor for low power VLSI design,” in Proc. National Conference on System on Chip (SoC), India, 2007.

30. GMV Prasad, and **Praveen Babu Choppala**, “Design of Eurocom A to V.35 converter,” in Proc. IETE & SEMCE International Conference on Biomedical Engineering, Electronics and Telecommunications., India, 2004.

31. **Praveen Babu Choppala**, “Coherent acoustics coding system,” in Proc. IETE & SEMCE, National Conf. on Electronics and Advanced TeleCommunications, India, 2004.

32. **Praveen Babu Choppala**, “Fuzzy logic based ECG pattern recognition,” in Proc. IETE National Conference on Information, Communication and Entertainment, India, 2003.

33. **Praveen Babu Choppala**, “BioRobotics in open heart surgery,” in Proc. IETE & SEMCE National Conference on Advanced Communications, India, 2002.

PUBLICATIONS UNDER REVIEW

1. **Praveen Babu Choppala** et al., “Auxiliary particle filtering with lookahead support for univariate state space models,” manuscript under review for publication in J. of Applied Science and Engineering (Web of Science Indexed), 2023. ISSN: 2708-9967. Impact Factor: 0.816.

2. **Praveen Babu Choppala** et al., ``Isolated Vector Median Filtering using k-means clustering for impulse noise reduction in digital colour images applied to target tracking," manuscript under review for publication in International Journal of Engineering Trends and Technology (Scopus Indexed), 2023.

3. **Praveen Babu Choppala** et al., “Particle filtering with improved sampling and a fully deterministic and unbiased resampling,” manuscript under review for publication in IEEE Transactions on Biomedical Engineering (Web of Science & Scopus Indexed), 2023.

4. **Praveen Babu Choppala** et al., “Approximate Kalman filtering for tracking real electrocardiogram signals,” manuscript under review for publication in Journal of Fluctuation & Noise Letters, 2023. ISSN: 1793-6780, Impact Factor: 1.652. (Web of Science & Scopus Indexed)

(a) IAENG conference, HongKong, 2008 (b) IEEE ICASSP, Canada, 2013

RESEARCH CONSULTANCY

S.No.	Title	Agency	Duration	Year of Completion	Amount
1	Development of smart burglar alarm system using electronic sensors and motion tracking	Aayushman Hospital, Visakhapatnam	2 years	2023	INR 2,50,000
2	Development of Kalman and particle filter tracking software for autonomous industrial robots	Yes Lab Technologies Private Limited, Vijayawada	1.5 years	2023	INR 1,50,000
3	Automatic attendance system using multimedia processing	Innovative Technologies Limited, Vijayawada	3 month	2021	INR 50,000
4	Development of compact and portable oxygen cylinder - Research	Sahuwala Cylinders P. Limited	1 year	2020	INR 1,00,000

RESEARCH IDENTITIES

Platform	**Identity**
Google Scholar	l6SYatoAAAAJ

Scopus	55967668600
Web of Science	AAF-8663-2019
Orcid	0000-0002-7360-1822
LinkedIn	2a657270

III. PROFESSIONAL ACTIVITIES/ AWARDS

ADMINISTRATIVE POSITIONS

S.No.	Position	Institute	From – To
1	Chairman, Board of Studies (U.G. Electronics)	Andhra University	08/04/2021 – Present
2	Head, Department of E.C.E.	Wellfare Institute of Science Technology and Management	18/04/2019 – Present
3	Convener, IQAC	Wellfare Institute of Science Technology and Management	18/04/2019 – Present
4	Chairman, Signal and Image Processing Group	Anil Neerukonda Institute of Technology and Sciences	20/11/2017 – 17/04/2019
5	Member, Academic Council	Anil Neerukonda Institute of Technology and Sciences	20/11/2017 – 17/04/2019

MEMBERSHIPS

S.No.	Membership	Institute	From
1	Senior Member	IEEE	Since 2012
2	Member	IEEE Signal Processing Society & Biomedical Society	Since 2012
3	Member	International Society for Information Fusion	Since 2014
4	Member	Australian Research Council	2015 - 2017

ACTIVITIES

S.No.	Role	Institute	Year
1	Publication Chair	National Conference on Design Thinking, Andhra University	2023
2	Reviewer	IEEE International Conference on Range Technology, 2021, 2023	2021, 2023
3	Advisory Committee	IEEE International Conference on Range Technology, 2021	2021
4	Session Chair	IEEE International Conference on Range Technology, 2021	2021
5	Editorial Reviewer	Journal of Frontiers in Signal Processing for Communications	Since 2022
6	Reviewer	IEEE Transactions of Signal Processing, Signal Processing Letters	Since 2014
7	Reviewer	Elsevier Journals	Since 2021
8	Reviewer	MDPI Journals	Since 2016

AWARDS/ SCHOLARSHIPS

S.No.	Award	Agency	Year
1	Best paper award	IEEE International Conference on Range Technology	2021
2	Doctoral completion award NZD 6000	Victoria University of Wellington, New Zealand	2014
3	3 Travel Grants NZD 9000	Victoria University of Wellington, New Zealand	2013, 2014
4	Best paper award	IEEE NZ central section conference	2012
5	IRL Science Scholarship NZD 75,000	Industrial Research Limited (now Callaghan Innovation), New Zealand	2011
6	Chancellor Award	Karunya University	2008

INVITED TALKS

Title of Talk	Invitee	Date
Introduction to particle filtering	Victoria Univ. Wellington, New Zealand	28/09/2011
Statistical modelling of fuzzy natural language statements for tracking applications	Victoria Univ. Wellington, New Zealand	21/03/2012
Track-before-detect particle filter	Victoria Univ. Wellington, New Zealand	06/08/2012
A soft resampler for particle filtering	Victoria Univ. Wellington, New Zealand	25/02/2013
Multi-target particle filtering using MUSIC as pseudo-likelihood	Victoria Univ. Wellington, New Zealand	01/07/2013
Particle filter parallelisation using random network resampling	Victoria Univ. Wellington, New Zealand	23/02/2014
Particle filters for real-time object tracking: recent developments	IIIT, Sri City	21/04/2018

WORKSHOPS and FDPS

3. Six month internship on Design and Development of Eurocom A to V.35 converter, Susee Space Tek Private Limited, Hyderabad, India, 2004.

2. One Week Faculty Development Program on Recent advances in 5G technologies, Anil Neerukonda Institute of Technology and Sciences, 2017.

1. AICTE Institution's Innovation Council Regional Meet, 10 August, 2022, Andhra University.

IV. SUPERVISION

PhD SUPERVISION (for Andhra University scholars)

SNo	Name	Relation	Status	Output	Title
1	Ashik Mohammed	Co-guide	Thesis submitted	Scopus: 3 Patents: 1	Fast particle filtering for tracking biomedical signals
2	Srinivasa	Guide	Ready to	Scopus: 8	Development of fast novel

	Gantenapalli		submit	Patents: 2	methods for impulse noise removal in digital colour images
3	Anil Katta	Guide	Ready to submit	Scopus: 2	Bandwidth improvement strategies in substrate integrated waveguide slot antennas
4	Ramakrishna Gurajala	Guide	Ongoing	Scopus: 3	Lookahead strategies for Sequential Monte Carlo
5	Vijaya Nirmala Gera	Co-guide	Ongoing	Scopus: 2	Soil classification using neural networks
6	Subhadra Devi Uppalapati	Guide	Ongoing	Scopus: 1	Big data modelling using particle methods
7	Nagarjuna Tanikonda	Guide	Ongoing	Scopus: 1	AI based antenna subsystems for 6G wireless communications

IV. RESEARCH OUTREACH FOR SOCIETAL ADVANCEMENT

1. **Department Head and Project Leader, WISTM, 2019 – 2023**

Developed technology transfer and consultancy projects - including electronic egg incubator, to Gorapalli Village Panchayat, Pendurthi Mandal, Visakhapatnam. Organised technical awareness camps in the village to apprise farmers of the use of technology in farming and other applications.

I was instrumental in incubating start-up ideas in electronic and computer science applications: smart egg incubator, IoT smart home appliances, smart sanitiser, Android App development for museums touring and smart real estate. A few ideas are under consideration by Hobel Bellows Pvt. Ltd., Visakhapatnam for potential investment. The smart electronic egg incubator we have developed has been donated to Gorapalli Village Development Office, Pendurthi, Visakhapatnam. The incubators are still in use by the local farmers.

S.No.	**Project**	**Impact**
1	Automated drip irrigation system	Prototype developed and passed to semifinals in AICTE India Innovation Contest 2019.
2	Smart electrical appliances	Donated to Gorapalli Village Panchayat.
3	Smart door locking system	Installed in WISTM college.

4	Smart surveillance robot	Installed in WISTM college.
5	Electronic autonomous parking system	Installed in WISTM college.
6	Smart notice board	Installed in WISTM college.
7	Smart session reminder	Installed in WISTM college.
8	Solar powered chemical sprayer	Donated to Gorapalli Village Panchayat.
9	Electronic egg incubator	Donated to Gorapalli Village Panchayat.
10	Polyhouse using IoT	Prototype developed.

Automated Drip Irrigation System:

The drip irrigation system currently operational in India requires farmers to manually release and stop water from pipes to the farm consequently, burdening the farmers to an extent of Rs 1,00,000 (one lac Indian rupees). We developed a novel automated drip system using IoT technology with an arrangement of the valves and pipes that is optimal in water usage and manpower requirement. The proposed system lets the water be utilised more optimally and relieves the farmer of around 90% of the additional monitoring costs. We have been awarded USD400 by Texas instruments to develop a prototype.

Our research contribution to society has been published in media.

Development of the automated drip irrigation system (first). Won USD400 worth equipment from Texas instruments to implement the design (second).

Visakhapatnam,
Dt: 8-8-22

From
The Panchayat Secretary,
Gorapalli Panchayati,
Pendurthi Mandal(R),
Visakhapatnam

This is to certify that the **Electronic Egg Incubator** has been donated by Wellfare Institute of Science Technology and Management, Pendurthi, Visakhapatnam to the Gorapalli village panchayat in 2020. I hereby congratulate and thank Professor James Stephen, Principal, Dr Praveen Choppala, HoD, ECE Dept., Mr G Manikanta, Asst. Professor, ECE Dept., and Dr K Jayarao, NSS Programme Officer and the students for their technical expertise in developing this project and their commitment to social and economic advancement of rural people.

My contribution to the development of start-up ideas for human advancement and smart living (also the appreciation letter from the Gorapalli village development officer)

2. **Coordinator, India Innovation Council's Regional Meet, Andhra University, Aug 2022.**

Coordinated the organisation and presentation of nearly 10 startup ideas from students of computer science and engineering, electronics, and mechanical engineering at the meet.

(a) Students presenting their ideas.

(b) Praveen Choppala with Dipan Sahu of AICTE

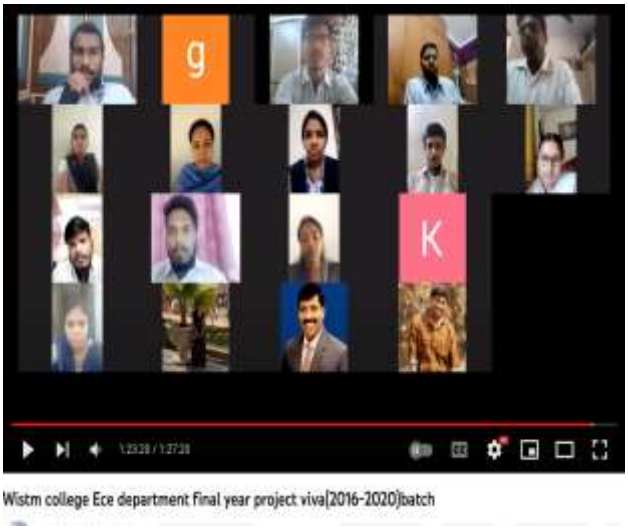
CO-CURRICULAR ACTIVITIES

1. Chairman, Online viva for April 2020 B.Tech. passouts.

Took a pioneering initiative, along with my associate coordinator Vandana Gullipalli, in the entire state of Andhra Pradesh, in organising online project viva for outgoing students during April 2020 Covid pandemic and facilitated their timely course completion despite long lockdown.

(YouTube Link: https://bit.ly/3ALycH5)

(video gained nearly 27,000 views)



2. President, ECE Department Day, Wellfare Engineering College, 26 Nov 2022,

Ideated, organised and chaired the WISTM ECE Department Day, November 26, 2022, first time in the history of the institute. It was a full day packed with 180 students and 420 parents/guardians (total 600) with project expo, games, awards and gifts and valedictory. (Report attached.)

(YouTube Link: bit.ly/3WsDfW5)

3. **Coordinator, Vijay Diwas Program, Welfare Engineering College, 16 Dec 2021.**

Organised the Vijay Diwas program to commemorate India's victory over Pakistan in 1971 and the sacrifices of the Indian defence forces.

https://www.youtube.com/watch?v=XIgHjCtGNJw&t=712s

4. Coordinator, Paper bag day, Wellfare Engineering College, 12 July 2022,

Organised paper bag day to create awareness on the harmful impact of using plastic bags. Innovatively organised an auction sale of paper bags made by students.

WISTM-ECE-Paper Bag Day Celebration Event

https://www.youtube.com/watch?v=mym0b48URQc&t=2127s

5. **Coordinator, Experiential Learning of Signals and Systems Course, 2018, ANITS.**
As Chairman of the Signal/Image Processing group, I coordinated an experiential learning drive by facilitating students in developing real online signal processing projects for audio processing applications like music generation, Fourier series creation, etc.

IV. OTHERS

SKILLSET

Type	Softwares
Documentation	1. All Microsoft tools offline and Google versions. 2. Inkscape. 3. Latex with overleaf.
Programing	C, C++, MATLAB, Python, R, Julia
Hardware design	VHDL, Verilog, Embedded C
Pedagogy	Google classroom, Moodle (expert level), Digital board

COURSES TAUGHT
Signals & systems, Digital signal processing, digital logic design, cellular and mobile communications, VLSI design, Digital IC design.

REFERENCES

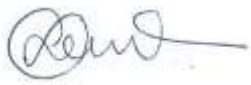
S.No.	Name	Relation	Designation & Address
1	Paul Teal	Primary PhD Supervisor	Associate Professor, School of Engineering and Computer Science, Victoria University of Wellington, New Zealand Email: paul.teal@vuw.ac.nz Phone: 0064212046854

2	Ramoni Adeogun	Research collaborator	Associate Professor, Department of Electronic Systems, Aalborg University, Denmark Email: ra@es.aau.dk Phone: 004591443446
3	Arvid Hunze	Manager @ Robinson Research Institute	CEO, Research Flow New Zealand. Email: arvid@grantconsultingnz.com Phone: 00642108210184

PERSONAL PROFILE

Name	**Praveen Babu Choppala**
S/o	Mohana Rao Choppala (Late)
Gender	Male
DoB	31/08/1984
Languages	English, Telugu, Hindi
Nationality	India
Address	DNo.1-111-16, MVP Colony, Visakhapatnam 530017

I hereby certify that all the information provided above is true to the best of my knowledge.



PRAVEEN BABU CHOPPALA

Visakhapatnam