

Dr. Meghana Kulkarni

Chairperson

Dept. of Electronics and Communication Engg.

“Inana Sangama”,

Visvesvaraya Technological University, Belagavi- 590018, Karnataka



Education

- Ph.D. in VLSI Design, Visvesvaraya Technological University, Belagavi, Karnataka.
- M.Tech. in VLSI Design and Embedded Systems, Visvesvaraya Technological University, Belagavi, Karnataka.
- B.E. Electrical and Electronics Engineering, Karnataka University, Dharwad, Karnataka.

Total Experience in Years

Teaching	Industry	Research
30 years	--	15 years

Administrative

1. Academic Senate Member, VTU Belagavi from June 2022 to June 2025.
2. Chairperson BoS in Electrical Engineering Sciences, for PG programs and University Departments UG Programs.
3. Chairperson, Dept. of E & C Engg. VTU Belagavi, from July 2021.
4. Academic Nodal Officer, TEQIP 1.3, VTU Belagavi.
5. Member BoE 2016-17, E & C Board, VTU Belagavi.
6. Member, B.O.E., 2012-2013, Visvesvaraya Technological University, Belgaum

Research Profile- (Candidates Guided/Guiding)/ Research Funding

1. Guided and Guiding Research Scholars
2. Received the grant of 18 Lakhs under VGST KFIST Level-I scheme.
3. (Project Completed)
4. Received the grant from MeitY for “Information Security, Education and Awareness-Project Phase – III”.

Papers Published in Journals /Conferences (National/International)

1. R Sai Meghana, Meghana Kulkarni, "Schematic and Functional Verification for Secure Hardware Design", IEEE International Conference on Smart and Sustainable Technology, June 2025.
2. Smitha M. U, Meghana Kulkarni, "Analysis of c17 Benchmark Circuit using Modified Logic Locking Technique" IEEE International Conference on Smart and Sustainable Technology, June 2025.
3. R Sai Meghana, Meghana Kulkarni, "Design and Analysis of Secure ALU: Detection of Malicious Modifications", IEEE 6th International Conference of Emerging Technology, May 2025.
4. R Sai Meghana, Meghana Kulkarni, "Raspberry Pi-Based Assistive Technology for Visually Impaired: Navigation and Emergency Support", International Research Journal of Engineering and Technology (IRJET), Volume: 11 Issue: 07 | July2024, e-ISSN: 2395-0056, p-ISSN: 2395-0072, pp-1221-1227.
5. R Sai Meghana, Meghana Kulkarni, "Smart System with Descriptive Video Service and Spoken Dialogue System for Visually Impaired Individuals", 28th International Symposium on VLSI Design and Test (VDAT), IEEE, 2024.
6. R Sai Meghana, Meghana Kulkarni, "A Wearable Solution for the Visually Impaired: Real Time Obstacle and Text Detection", First International Conference on the Emerging Technologies in Science and Engineering (ICETSE), Grenze International Journal of Engineering and Technology, Special Issue, pp- 25-31 ,2024.
7. Jayashree More, Meghana Kulkarni, "Two Way Sign Language Translator", Novyi Mir Research Journal, Volume 9, Issue 8, August 2024, ISSN: 0130-7673.
8. Mandar D. Sontakke, Meghana Kulkarni, "Nonlinear Noise Delineation in Medical Images", GIS SCIENCE JOURNAL VOLUME 8, ISSUE 6, 2021 ISSN NO: 1869-9391, VOLUME 8, ISSUE 6, 2021.
9. Vikrant Shende, Meghana Kulkarni, "Application of Machine Learning in Cryptography", International Journal of Advanced Trends in Computer Science and Engineering, vol 9, No. 3, May – June 2020.
10. Mandar D. Sontakke, Meghana Kulkarni, "FPGA Based Image Enhancement using KNN and PSO with BM3D", international Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249-8958, Volume-9, Issue-4, April 2020.
11. V. Vijendra, Meghana Kulkarni, "Automatic ECG Signals Recognition Based on Time Domain Features Extraction Using Fiducial Mean Square Algorithm", Computational Intelligence: Theories, Applications and Future Directions – Volume I, pp 81-94, 2019.
12. Vikrant Shende, Meghana Kulkarni, "A Comprehensive evaluation and Implementation of AES, RSA, and Hybrid Cryptographic Algorithms on a portable Device", International Journal of Engineering and Advanced Technology (IJEAT), ISSN : 2249 – 8958, volume-9, Issue-1, October 2019.

13. Mandar D. Sontakke, Meghana Kulkarni, "KNN Classification Based Nonlinear Noise Delineation in Color Image using Optimized BM3D Filter", International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-10, August 2019
14. Vijendra, Meghana Kulkarni and Rajesh Murgan "ECG Pattern Recognition and beat Classification using Internet of Things (IoT) and Hardware Acceleration on Zynq (SOC) Platform with High Performance computational PCIe Protocol" Published in BIODEVICES 2019 - 12th International conference on Biomedical Electronics and devices, 22nd -24th February 2019 at Prague, Czech Republic. Extended versions of presented papers in Springer CCIS Series book, Indexing in Thomson Reuters, SCITEPRESS digital Library.
15. Vijendra and Meghana Kulkarni, "Automatic ECG Signals Recognition Based on Time Domain Features Extraction Using Fiducial Mean Square Algorithm" Springer Publications in Computational Intelligence: Theories, Applications and Future Directions - Volume I, Pages 18-94. Advances in Intelligent Systems and Computing book series (AISC, volume 798). ISBN 978-981-13-1131-4, © Springer Nature Singapore Pte Ltd. 2019
16. Vijendra and Meghana Kulkarni, "ECG Pattern Recognition and Optimized Deep Learning Algorithms using Machine Learning techniques: An Illustrative Survey" Published in IEEE Xplore Digital library - IEEE 4th International Conference for Convergence in Technology , IC4 conference at Mangalore, 27-28th October 2018.
17. ShrutiMugali, Meghana Kulkarni, "An Efficient Design and Verification of I2C Master Core", International Journal of Computer Science and Mobile Computing, vol 7, Issue 6, June 2018.
18. ShubhaHiremath, Meghana Kulkarni, "A Flexible FPGA Communication", International Journal of Engineering Trends and Technology, vol 51, No. 2, Sept 2017, ISSN:2231-5381.
19. Vikrant Shende, GiridharSudi, Meghana Kulkarni, "Fast Cryptanalysis of RSA Encrypted Data using A Combination of Mathematical and Brute Force Attack in Distributed Computing Environment", IEEE International Conference on Power, Control, Signals and Instrumentation Engineering (ICPCSI-2017)
20. Vikrant Shende, Meghana Kulkarni, "FPGA based Hardware Implementation of Hybrid Cryptographic Algorithm for Encryption and Decryption", 2017 International Conference on Electrical, Electronics, Communication, Computer and Optimization Techniques (ICEECOT)
21. PallaviLambe, Meghana Kulkarni, "Functional Verification of AMBA AHB LITE Interconnect using SystemVerilog", International Journal of Advanced Research in Electrical,

Electronics and Instrumentation Engineering, vol 6, Issue 7, July 2017, ISSN(Print): 2320-3765, ISSN(Online):2278-8875.

22. Avinash A. Kadam, Meghana Kulkarni, "Design and Analysis of Double Gate MOSFET Operational Amplifier in 45nm CMOS Technology", International Journal of Science, Technology and Engineering, vol 2, Issue 12, June 2016.
23. Vijendra V and Meghana Kulkarni, "ECG signal filtering using DWT Haar Wavelets coefficient techniques", Proceedings of the 1st International Conference on Emerging Trends in Engineering, Technology and Science, Published in IEEE digital Explore library with ISBN:978-1-4673-6725-7, KCE, Punalkulam, Thanjavur, Tamilnadu, INDIA, February 24-26, 2016 pp. 382-387.
24. Mandar D. Sontakke, Meghana Kulkarni, "IMAGE NOISE REMOVAL WITH EXTENSION TO BM3D", I J C T A, 9(41) 2016, pp. 609-616, © International Science Press
25. Ashwini Mekkalaki, Meghana Kulkarni, "Design of 16*16 High Speed MLM using KOM for Image Filter Application", International Conference on Electrical, Electronics and Optimization Techniques ICEEOT – 2016, held at DME College, Chennai, from 03.03.2016 to 05.03.2016. Paper will be published in IEEE xplore Digital Library.
26. Santosh S. Kulkarni, Meghana Kulkarni, "Smart System for Medium Scale Food Service", International Journal of Science, Technology and Engineering, vol 2, Issue 11, May 2016.
27. Mandar D. Sontakke, Meghana Kulkarni, "Multistage combined Image Enhancement Technique", IEEE International Conference On Recent Trends In Electronics Information Communication Technology, May 20-21, 2016, India.
28. Vijendra V and Meghana Kulkarni, "Fuzzy controlled ID Interpretation based Diagnostics systems", International Conference on Health and Technical Research(ICHTR) at Manipal institute of Technology(MIT) Dec 22-24th 2015, Udupi, Karnataka, INDIA. Peer review and publications in SCOPUS Indexed [American science Publishers - Volume 23, Number 3]
29. Manoj Kumar K, Meghana Kulkarni, "Implementation of high speed, low power vedic multiplier using reversible logic", International Journal of Advance research in science and Engineering, vol 04, Issue 03, March 2015.
30. Mandar D. Sontakke, Meghana Kulkarni, "IMAGES TYPES-FILE FORMATS-SOURCES OF NOISE-NOISE REMOVING FILTERS", International Journal of Advances in Management, Technology & Engineering Sciences, vol IV, Issue 5(I), February 2015, ISSN:2249-7455.
31. Vikrant Shende, Meghana Kulkarni, Giridhar Sudi, "An alternative method for forming the state matrix required for AES encryption algorithm to enhance security", International

Journal of Engineering Research in Electronics and Communication Engineering (IJERECE)
Vol. 1, Issue 2, January 2015.

32. Mandar D. Sontakke, Meghana Kulkarni, "Different Types of Noises In Images and Noise Removing Technique", International Journal of Advanced Technology in Engineering and Science, Volume No.03, Issue No. 01, January 2015, ISSN (online): 2348 – 7550.
33. Meghana Kulkarni, Shubha B Baravani, "A Comparative Study of PI and Split R PI model for CMOS Driver Receiver Pair for Low Energy on Chip Interconnects", International Journal of Scientific and Engineering Research Publications, Volume 3, Issue 9, September 2013.
34. Meghana Kulkarni, "Low Power Flash ADC Design", National Conference on Advanced Technologies on Electrical and Electronic Systems, ATEES 2012, GIT Belgaum, February 2012.
35. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "Optimized Flash Analog to Digital Converter using LCT Comparator", 15th VLSI Design and Test Symposium, 2011, Wipro Technologies, Pune.
36. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "The Quantized Differential Comparator in Flash ADC", International Journal of Computer Networks and Communications (IJCNC), 2010.
37. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "LCT Comparator in Low Power Flash ADC Design", International Journal of Recent Trends in Engineering, Academy Publisher, Finland, 2010.
38. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "4-Bit Flash Analog to Digital Converter Design using CMOS LTE Comparator", 2010 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS 2010), Kuala Lumpur, Malaysia.
39. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "CMOS –LTE Comparator in Flash Analog to Digital Converter Design", International Conference on Advances in Communication, Network and Computing - CNC 2010.
40. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "The QV Comparator in Flash Analog to Digital Converter Design", International Conference on VLSI Design & Communication Systems ICVLSICOM -10 held at MSEC Chennai from 8-10 January 2010.
41. "CMOS-LTE Comparator and 2:1 multiplexer in Flash ADC", 14th IEEE/VSI, VLSI Design and Test Symposium, VDAT 2010.

42. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "TIQ Technique Based Optimized Analog to Digital Converter", 13th IEEE VDAT-2009, VLSI Design & Test Symposium, Bangalore 8-10 July 2009.
43. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "A TIQ Technique Based Flash Analog to Digital Converter for SoC Applications", 3rd International Conference on Advanced Computing & Communication Technologies at Asia Pacific Institute of Information Technology Panipat 2008.
44. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "Design Reuse for System on Chip Applications", National Conference CISCON-2008 at MIT Manipal.
45. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "TIQ Technique Based Flash Analog to Digital Converter for SoC Applications", National Conference on VLSI, Communication and Networks, Dept. of Electronics and Communication Engg. Eshwari College of Engg. Chennai, September 2008.
46. Meghana Kulkarni, V. Sridhar, G.H. Kulkarni, "Reusable IC Design for System-on-Chip Applications", National Conference on Emerging Trends in Signal Processing and Communication, Dept. Electronics and Telecommunication, Maharashtra Academy of Engineering, Pune, December 2007.
47. Meghana Kulkarni, "Flash ADC Design for System-on-Chip Applications", Third National Control and Instrumentation Conference, November 2006.
48. Meghana Kulkarni, "Quantized Comparator approach for Low Power Flash AD Design", National Conference on Microelectronics and Communication, S.R.M. Institute of Science and Technology, Tamil Nadu, March 2006.

Workshop/Seminar/Conference Organized

1. Organized Bootcamp on "Hardware Security", ISEA Project Phase-III under the Meity (GoI), from 10th February to 14th February 2025.
2. Organized FDP on "Hardware Security", ISEA Project Phase-III under the Meity (GoI), from 7th January to 11th January 2025.
3. Organized webinar on "Boost your SKILL Set in VLSI Domain", on 23rd July 2021 by Mr. JaiprakashYadrami, Application Engineer, Synopsys India Pvt. Ltd.
4. Organizing Committee member of "TEQIP 1.3 Sponsored Orientation Program", conducted from 18th February to 11th March 2019.
5. Organized VGST Sponsored Faculty Development Program on "System Design using SystemVerilog", from 24th to 27th April 2018.

6. Organized Five Faculty Enrichment Programs under TEQIP – 1.3 project as per the schedule below:

Subject	Date
Signals and Systems (E & C Engg.)	16-Jan-2018 to 20-Jan-2018
Strength of Materials (Civil Engg.)	25-Jan-2018 to 29-Jan-2018
Power System Analysis – 1 (E & E Engg.)	24-Jan-2018 to 28-Jan-2018
Design and Analysis of Algorithms (Computer Science Engg.)	26-Jan-2018 to 30-Jan-2018
Mathematics(M2)	16-Jan-2018 to 20-Jan-2018

7. Organized Project Exhibition-cum-Competition, for UG Students on 28th June 2018.
8. “ARM Cortex-M0 Microcontrollers” on 30th Sept and 1st Oct 2015, in association with Codex Design Services and IIT Madras, SHAASTRA 2016.

Talks Delivered

1. Delivered talk on “The Chip Dilemma: Trust or Threat”, “Logic Locking”, “Hardware Trojan” and “Logic Design and Verification”, during the Bootcamp conducted on Hardware Security, 10th February to 14th February 2025, VTU Belagavi.
2. Delivered talk on “Introduction to Hardware Security”, Faculty Development Program, 7th January, VTU Belagavi.
3. Invited as Chief Guest on 22nd Nov 2022 @ 11.15 AM, for the Inauguration of IEEE, AESS Students Branch at Dept. of Electronics and Communication Engineering, JCE Belagavi.
4. “System Verilog for Verification”, 23rd March 2017.
5. “Chip Design Methodologies”, Faculty Development Program, P.E.S. College of Engineering, Mandya, February 2011.
6. “VLSI Technology”, Dept. of Electrical and Electronics Engg. G.I.T. Belgaum, February 2009.
7. “Reusable IPs”, in the Short Term Training Program, Sponsored AICTE and ISTE, P.E.S. College of Engineering, Mandya, July 2008
8. “Introduction to VLSI”, Govt. Polytechnic Belgaum, October 2006.

Contact Information

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