

Dr. S.SENTHILRANI , M.Tech., Ph.D.,

Professor/ Department of Electronics Engineering (VLSI Design and Technology)

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Educational Qualification:

- Ph.D in Information & Communication Engineering from Anna University Chennai in March 2017.
- M.Tech in VLSI Design with CGPA of 7.41 from SASTRA University in May 2005.
- B.E in Electrical and Electronics Engineering with an aggregate of 73.4 % from Madurai Kamaraj University in April 2003.

Experience in Years: 19 years

Employment History: (will be either in Table (or) Paragraph starting with current employer)

- Professor in Department of Electronics Engineering (VLSI Design and Technology) Velammal College of Engineering and Technology from 01.07.2024 to till date.
- Associate Professor in Department of Electrical and Electronics Engineering, Velammal College of Engineering and Technology from April 2020 to 30.06.2024.
- Assistant Professor in Department of Electrical and Electronics Engineering, Velammal College of Engineering and Technology from June 2010 to 31.03.2020.
- Senior Lecturer in Department of Electrical and Electronics Engineering, Velammal College of Engineering and Technology from June 2009 to May 2010.
- Lecturer in Department of Electrical and Electronics Engineering, Velammal College of Engineering and Technology from May 2008 to May 2009.
- Lecturer in Department of Electronics and Communication Engineering, PSNA College of Engineering and Technology from July 2005 to April 2008
- One year experience as project trainee in VikramSarabai Space Center, ISRO Satellite Center, Department of Space and Technology- Trivandrum since August 2004 as a part of the curriculum

Interested Research Areas: Image processing and computer vision, Machine learning,
Renewable Energy Engineering

Scholarships and Awards received:

1. Elite grade in NPTEL course on Introduction to research during October 2017.
2. Elite grade in NPTEL course on Outcome based pedagogic principles for effective teaching April 2018
3. Elite grade in NPTEL course on Product design and innovation during October 2018
4. Elite – Silver Medal in NPTEL course on TALE during April 2019
5. Elite grade in NPTEL course Selection of Nanomaterials for Energy Harvesting and Storage Applications during September 2019
6. Elite grade in NPTEL course on Inspection and Quality Control in Manufacturing during March 2021
7. Silver medal & Elite grade in NPTEL course on Stress Management during October 2021
8. Silver medal & Elite grade in NPTEL course on Patent drafting for beginners during April 2022
9. Silver medal & Elite grade in NPTEL course on Design thinking- A primer during October 2022
10. Silver medal & Elite grade in NPTEL course on Training of trainers during October 2022
11. Elite grade in NPTEL course on Understanding incubation and entrepreneurship during April 2023
12. Elite grade in NPTEL course on Soft Skills during October 2023
13. Top performing mentor for NPTEL course Soft Skills during October 2023
14. Elite grade in NPTEL course on Ethics In Engineering Practice during October 2023
15. Elite grade in NPTEL course on Effective engineering teaching in practice during March 2024
16. Elite with silver grade in NPTEL course on Introduction To Professional Scientific Communication during March 2024
17. Elite grade in NPTEL course Business development : From Start to Scale during April 2024
18. NPTEL motivated certificate of appreciation during Jan- April 2024

19. NPTEL Faculty domain – Advanced during April 2024
20. Mentor recognition for NPTEL course Leadership and team effectiveness during April 2024
21. Top performing mentor for NPTEL course Business development : From Start to Scale during April 2024

Funded Research Projects:

- Received Grant of Rs.10,000/- for conduct of Idea Harvest2024- idea pitching event conducted by Titan company and TBI-TCE during March 2024.
- Received grant of Rs. 34,000/- under Proof of concept by Quantanics and Edge Matrix
- Received Grant of Rs.7,500/-for Tamilnadu State Council For Science And Technology Student Project Scheme 2022- during March 2023.
- Received Grant of Rs.1,00,000/- for SPICES scheme , AICTE during March 2021.
- Received Grant of Rs.7,500/-for Tamilnadu State Council For Science And Technology Student Project Scheme 2019- during March 2020.
- Received Grant of Rs.30,000/- for Six days Anna University Sponsored FDTP on Transmission and distribution during November 2019.
- Received Grant of Rs.20,000/- for Energy awareness camp from TNSCST during May 2019.
- Received Grant of Rs.20,000/- for National Seminar from Institution of Engineers(India) during August 2017.
- Received Grant of Rs.40,000/- for “Entrepreneurship Awareness Camp” sponsored by Entrepreneurship Development Institute of India, Ahmedabad under the Department of Science & Technology, Govt. of India on Nov 2015.

Publications Details:

1. Patent Journal Publication Details:

- Design Patent “Solar Powered Patio Umbrella System” during January 2023.
- Design Patent “Spherical Ball Assisted Pen Mouse” during June 2023.

2. International Journal Publication Details:

- Unit vector template controlled grid integrated and solar fed BLDC drive-based water pumping system, e-Prime - Advances in Electrical Engineering, Electronics and Energy ,Volume 7, March 2024, 100489

- Review of electric vehicle (EV) charging using renewable solar photovoltaic (PV) nano grid, Energy & Environment, 1-29, 2023.
- A mathematical model to forecast solar PV performance, Journal of the Chinese Institute of Engineers, Volume 46, Issue 5,2023.
- Time series based photovoltaic power forecasting to optimize grid stability, Electric Power Components and Systems, Volume 49, 2021 - Issue 16-17,2022.
- Computer Vision-Based Cashew Nuts Grading System Using Machine Learning Methods, Journal of Circuits, Systems, and Computers (JCSC) Vol 32 No. 3, October 2022.
- Effectual Genetic Algorithm optimized PID Control Strategy based MPPT Controller for Extracting Optimal Power from PV system, Trends In Sciences 2022; 19(9): 3969.
- Modeling of Battery Management for Standalone PV System, Journal of Physics: Conference Series, 2115 (2021) 012027,November 2021.
- An Overview of Various Computer Vision-based Grading System for Various Agricultural Products, The Journal of Horticultural Science and Biotechnology, October 2021.
- MVCNN-CASHNET: Multi-View Convolution Neural Network for classifying WW, SW, Split Cashews, Solid State Technology, Volume. 64, issue. 2, March 2021.
- Smart farming using soil characterization, International Journal of Innovative Research in Electrical ,Electronics,Instrumentation and Control Engineering, Vol.9,Issue.3,March 2021.
- IoT based aquaculture monitoring system, International Journal of Innovative Research in Electrical ,Electronics,Instrumentation and Control Engineering, Vol.9,Issue.3,March 2021.
- Assessment Of Fruit Freshness Using DIP International Journal of Scientific Research and Engineering Development-- Volume 3 Issues 2 Mar- Apr 2020.
- AI Surveillance Based Platform Ticketing System With DBMS, International Journal For Research & Development In Technology, Volume-13,Issue-3(Mar-20).
- Automatic Fruit Grading System Using Computer Vision, International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 9, Issue 3, March 2020.
- Fruit Maturity Detection System Using Non-Destructive Testing, International Research Journal of Modernization in Engineering Technology and Science

Volume:02/Issue:03/March-2020

- Analysis of a solar wind integrated energy system, International Journal, IJSRD, March 2019.
- Control of Small Wind Turbine in the High Wind Speed Region, International Journal of Latest Engineering Research and Applications (IJLERA) ISSN: 2455-7137 Volume – 02, Issue – 03, March – 2017, PP – 118-122.
- Estimation of short circuit power dissipation in CMOS inverter, International Journal on Recent Technologies in Mechanical and Electrical Engineering, May.2016.
- MPPT based control of standalone wind battery system, International Journal Of Innovative Research in Electrical, Electronics, Instrumentation And Control Engineering Vol. 4, Issue 5, May 2016.
- Design and analysis of hybrid renewable energy for solar and wind energy systems, International Journal Of Innovative Research in Electrical, Electronics, Instrumentation And Control Engineering Vol. 4, Issue 5, May 2016.
- Network Traffics Reduction using a hybrid opto electronic switch with different packet classes, International Journal on Recent Technologies in Mechanical and Electrical Engineering, Dec.2015.
- Electrothermal Analysis Impact On Deep Submicron Devices In A Leakage Dominant Era”,International Journal of Applied Engineering Research , Vol. 10,Number 3, pp 6271-6284,2015.
- Remote monitoring and fault detection of induction motor in agriculture using GSM, International Journal of Advance Research in Electrical, Electronics and Instrumentation Engineering, Apr.2015.
- Investigation of self heating effects domination on power device reliability, Journal of Nanoelectronics& Optoelectronics, Vol.10, Nos.2, Apr.2015.
- Hybrid water pumping control system for irrigation using Arduino, International Journal Of Engineering Research & Technology,Mar.2015.
- Analysis and Implementation of PI Controller for DC link single phase PWM voltage source inverter” International Journal of Advanced Research Trends in Engineering and Technology, during Nov.2014.
- Analysis of deep submicron device parameters using T-sizing, ” International Journal of Advanced Research Trends in Engineering and Technology, during Nov.2014.

- Microcontroller based intelligent wheelchair design, International Journal of Research in Engineering & Advanced Technology, Apr-May.2014.
- Power Optimization Techniques for Deep Submicron Devices”,Journal of Nanoelectronics and Optoelectronics, Volume 8, Number 4, pp 383-389, Jun.2013.

3. International Conference Presentation Details:

- Battery Health Monitoring System in Electric Vehicles for Battery Swapping, IEEE Third International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS) organized by IEEE Student Branch [34451] of Kalasalingam Academy of Research and Education, Krishnankoil, India from 14th March, 2024 to 16th March, 2024.
- Grey wolf optimization based MPPT tracking of standalone PV system for BLDC applications, IEEE Third International Conference on Intelligent Techniques in Control, Optimization and Signal Processing (INCOS) organized by IEEE Student Branch [34451] of Kalasalingam Academy of Research and Education, Krishnankoil, India from 14th March, 2024 to 16th March, 2024.
- Bidirectional Power Flow Grid-to-Vehicle & Vehicle-to-Grid (G2V&V2G) in Electric Vehicle, 2023 International Conference on Energy, Materials and Communication Engineering (ICEMCE),page 1-5.
- Chatbot: A Voice Based Virtual Assistant, 2023 International Conference on Energy, Materials and Communication Engineering (ICEMCE),page 1-5.
- Fault assessment and early performance prediction of PV module using machine learning , 7th International Joint Conference on Advances in Computational Intelligence (IJCACI 2023) ,Oct 14-15, 2023 ,South Asian University, India
- Energy management in a standalone pv system with priority controller, International Conference on Smart Engineering for Renewable Technologies, EDP Web of Conference, 2023
- Performance Prediction of Solar Cell using Virtual Production Simulation, XVIII Control Instrumentation System Conference, CISCON-2021, MIT Manipal, November 2021.
- A Review on Fusion Methods for Multimodal Medical Image Fusion, 2nd International Symposium on Computer Vision and Machine Intelligence in Medical Image Analysis , Sikkim Manipal Institute of Technology, 11-12 Nov, 2021.

- Computer Vision Based Method for Counting Various Food Products with Different Shapes and Size,, International Web Conference on Innovations in Communication and Computing, ICICC '20, October 2020.
- Thermal Aware Device Design Using Hotspot Analysis, International Conference on Automation, Signal Processing, Instrumentation and Control-iCASIC-2020 (February 27-28, 2020)
- Computer vision based Vehicle Detection and Tracking, International Conference on Automation, Signal Processing, Instrumentation and Control-iCASIC-2020 (February 27-28, 2020)
- Performance Prediction and Suitability Determination of Parabolic Trough Collector Based CSP Generation in Coimbatore, IRTME 2019, Velammal College of Engineering and Technology, October 2019.
- Control of four tank system using model predictive controller, ICSCAN2019, ManakulaVinayagar Institute of Technology, March 2019
- Robust H-infinity controller for two degree of freedom helicopter, ICSCAN2019, ManakulaVinayagar Institute of Technology, March 2019
- An optimized cashew nut grading using deep CNN and data augmentation, ICSCAN2019, ManakulaVinayagar Institute of Technology, March 2019
- An improvised algorithm for computer vision based cashew grading system using deep CNN, IEEE International Conference on System , Computation, Automation & Networking 2018.
- Monitoring and Protection of Distribution Transformer Using GSM Modem, AICTE Sponsored International Conference on Power and Energy Systems organized by Velammal College of Engineering & Technology during December 2017.
- Design and analysis of a solar wind integrated energy system, International Conference on Power and Energy Systems, organized by Velammal College of Engineering & Technology during April 2017.
- Non destructive measurements for fault identification of emergency diesel engine in nuclear power plant, International Conference on Power and Energy Systems-ICPES'13,Dec.2013
- Control scheme designing for maximum power PV tracker, International Conference on Emerging Research and Advances in Mechanical Engineering, ERA 2009, Velammal College of Engg, Chennai,Mar.2009.

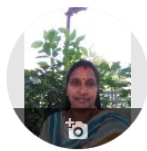
- A novel idea for designing a maximum power photovoltaic tracker, International Conference on Energy Engg , ICEE 2009, PondicherryEngg College,Jan.2009.
- An effective energy management to maximize profit, International conference on Energy Engg , ICEE 2009, PondicherryEngg College
- Design of MPTT using HDL ,International conference on advances in Mechanical Engineering, Dec 2008, SV NIT ,Surat,Dec.2008.
- A novel idea of using USB interface for a three phase series parallel uninterrupted power supply system International conference on digital factory-ICDF 2008, CIT, Coimbatore.

4. National Conference Presentation Details:

- Smart farming using soil characterization, National level virtual conference on Recent Developments in Electronics and Electrical Engineering, organized by Solaimalai Engineering College, March 2021.
- Weed detection and fertigation using image processing,Virtual conference on Smart computing & Advanced Communication (SCAC'21) organized by PSNACET, March 2021.
- Design & Fabrication of Automatic Inspection Unit for Timing Pulley in Quality Control, TEQIP - III sponsored National Seminar on Energy &Earth ,School of Engineering Harcourt Butler Technical University, Kanpur, Uttar Pradesh, India and Thiagarajar College of Engineering, Madurai, November 2019.
- Control of DC Link Voltage of Single Phase Grid Connected Solar PV System'2018,Proceedings of IEEE Sponsored Sixth National Power Engineering Conference NPEC-18, March 2018.
- Phase Locked Loop for controlling inverter interfaced with grid connected solar PV System',2018, Proceedings of IEEE Sponsored Sixth National Power Engineering Conference NPEC-18, March 2018.
- Smart mine monitoring and alarm system, National Level Conference on Emerging Trends in Engineering Design & Manufacturing “ ETEDM -2019”, March 2019.
- Design and control of standalone wind energy conversion system, National Conference on Power and Renewable Energy Systems- NCPRES'16, Jan.2016.
- Design and analysis of solar PV module, National Conference on Power and Renewable Energy Systems- NCPRES'16, Jan.2016.

- Remote monitoring and fault detection of induction motor in agriculture using GSM, National Conference on Emerging Trends in Electrical Engineering, ETEE'15, Mar. 2015.
- Mitigation of voltage sag using dynamic voltage restorer with photovoltaic cell, ETPIR'14, March 2014.

5. Google Scholar report:



Senthilrani.S

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