



# SRM Valliammai Engineering College

SRM Nagar, Kattankulathur-603203, Kancheepuram District, Tamil Nadu

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## Department of Electronics and Communication Engineering

### Personal Details

<b>Name :</b>	Dr.G.Udhayakumar
<b>Designation :</b>	Associate Professor
<b>Educational Qualification :</b>	M.E., Ph.D.
<b>Experience:</b>	17 years 8 Months
<b>Area of Specialization :</b>	Embedded System, Biomedical Signal and Image Processing
<b>Date of Joining :</b>	16/06/2004
<b>Email ID :</b>	udhayakumarg.ece@valliammai.co.in udhay_ganesan@yahoo.co.in
<b>Contact Numbers :</b>	09444142141, 044- 27454784



### Educational Details

S.No	Degree	Branch/Specialization	Institution / University	Year
1	B.E	Electronics and Communication Engineering	Adhiparasakthi Engineering College, University of Madras, Melmaruvathur	1997
2	M.E	Embedded System	College of Engineering, Guindy, Anna University, Chennai	2004
3	Ph.D	Biomedical Image Processing	College of Engineering, Guindy, Anna University, Chennai	2013

### Professional Society Memberships

1. Indian Society for Technical Education(ISTE) - Life Member(LM-98897)
2. Institute of Electronics & Telecommunication(IETE) - Life Member(M-227365)
3. Computer Society of India– Life Member(I1505880)
4. Indian Science Congress Association(ISCA) - Annual Member
5. International Association of Engineers(IAENG) -Member(150631)
6. International Association of Computer Science and Information Technology(IACSIT)-Member(80350005)

### Publication Details

#### Journals:

1. Udhayakumar G, Sujatha C M and Ramakrishnan S, "Trabecular architecture analysis in femur radiographic images using fractals", Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, Vol. 227, No. 4, pp. 448-453, 2013.
2. Udhayakumar G, Sujatha C M and Ramakrishnan S, "Comparison of two interpolation methods for Empirical Mode Decomposition based evaluation of Radiographic Femur Bone Images", Acta of Bioengineering and Biomechanics. Vol. 15, No. 2, pp. 73-80, 2013.
3. Udhayakumar G, "Analysis of Trabecular Structure in Radiographic Bone Images Using Empirical Mode Decomposition and Extreme Learning Machine", Lecture Notes in Computational Vision and Biomechanics, 28, 259-265, 2018
4. Lokesh S and Udhayakumar G, "Analysis of QRS detection in ECG signal using entropy and edge detection", Journal of International Pharmaceutical Research, Vol.46, No.3, 902-905, 2019

5. Pandian A and Udhayakumar G, "Multiple Sclerosis Lesions Segmentation of MR Image Using Particle Region Growing Algorithm", i-manager's Journal on Image Processing, Vol. 6 | No. 4, 11-17, 2019
6. Udhayakumar G, Sujatha C M and Ramakrishnan S, "Analysis of Trabecular Structure in Radiographic Bone Images Using Bi-Dimensional Empirical Mode Decomposition", Journal of Biomedical Sciences Instrumentation, Vol. 47, pp. 82-87, 2011.
7. Gopisivaraman. P and Udhayakumar.G, " Palmprint Recognition using Adaptive Histogram Equalization and Discrete Curvelet Transform", International journal of Innovative Research in Computer and Communication Engineering, Vol.2, 1, pp.50-55, 2014.
8. R.S. Sundaramoorthy, G.Udhayakumar, Power Quality Improvement in Modified Solid State Transformer System Using Statcom, International Journal of Engineering and Computer Science, 5(5), 16686-16691, 2016
9. S.S. Vignesh and G. Udayakumar, Voltage Equalization for partially Shaded Photovoltaic Generators with Coordinated Control and Protection for Islanded Hybrid Microgrid System, Middle-East Journal of Scientific Research, 24(S2), 372-381, 2016
10. Muthuvel. M & Udhayakumar. G, "Optimal Location of Doubly-Fed Induction Generator and Unified Power Flow Controller with PSO Algorithm", International Journal of Innovative Technology and Exploring Engineering, Vol. 8, No. 7, pp. 7-11, May 2019
11. Muthuvel. M & Udhayakumar. G, "Power System Stability using Doubly-Fed Induction Generator and Unified Power Flow Controller", International Journal of Engineering Development and Research, Vol. 6, No. 4, pp. 74-85, Dec' 2018
12. Arunmozhi Devan.E, Balasekaran.T.K, Gukan.V & Udhayakumar.G, "Floating Oscillator based Electric Generator using Mechanical Energy Harvesting", International Research Journal of Engineering & Technology, Vol. 6, No. 3, pp. 1168-1172, March 2019
13. Poovendan.K, Sathishkumar.S, Selvinraj, Shanmuga Sundaram.S & Udhayakumar.G, "Solar Energy Powered Mobile Charging Station Using Bismuth Telluride-based Thermoelectric Generator", International Research Journal of Engineering & Technology, Vol. 6, No. 3, pp. 1085-1088, March 2019
14. Aravind R, Arun Kumar E, Harisudhan R K, Karan Raj G, and Dr.G.Udhayakumar, "Load Cell based Fuel Level Measurement using Arduino Uno Microcontroller", International journal for Research & Development in Technology, Vol.3, No.3, pp.159-164, Mar-18
15. Jaison Isaac Prince P, Kishoritha K. R, Ganesh B, Gokulprashanth P and Dr.G.Udhayakumar, "Electronic Voting Machine with Facial Recognition and Fingerprint Sensors", International journal for Research & Development in Technology, Vol.3, No.3, pp.165-170, March-2018
16. G.Udhayakumar et al, "Smart Health Band with Alert System, International Research Journal of Engineering and Technology, 7, 2020
17. Udhayakumar.G et al., Embedded System Based Emergency Evacuation System, International Journal of Innovative Technology and Exploring Engineering, 9, 2020

### Conferences:

1. Udhayakumar G, Sujatha C M and Ramakrishnan S, "A Method of Analysing Radiographic Femur Bone Images using Fractal and Empirical Mode Decomposition", presented in 'International conference on Signal, Image and Video processing -2012 on 13-15 Jan' 2012 at Indian Institute of Technology- Patna, pg 1-6, 2012.
2. Udhayakumar G, Sujatha C M and Ramakrishnan S, "Analysis of Trabecular Structure in Radiographic Bone Images using Empirical Mode Decomposition and Support Vector Machines", IEEE - Bioengineering, Proceedings of the Northeast Conference, Philadelphia, Vol. 38, pp. 376-377, 2012

3. Udhayakumar G and Ramakrishnan S, "Proposal of an authentication system using facial recognition" presented in National Conference on " Control, Communication and Information Systems" held on 23-24 Jan' 2004 at Goa College Of Engineering, Goa.
4. Amala B, Dhanalakshmi, Gowthami C and Udhayakumar G, "Development of Authentication System using Finger vein images", presented in "National conference on Recent Trends in Wireless Communication and Networking, 7-8 March, 2014, at Valliammai Engineering college-Chennai, pp-91-95, 2014.
5. S.S. Vignesh and G. Udayakumar, An integrated three layer hierarchical control and protection of photovoltaic generators in microgrid, IEEE International Conference on Emerging Trends in Engineering, Technology and Science (ICETETS), 24-26 February 2016, Kings College of Engineering Thanjavur, Tamil Nadu, India
6. R.S. Sundaramoorthy, G.Udhayakumar, Power management using modified solid state transformer for AC distribution system, IEEE International Conference on Emerging Trends in Engineering, Technology and Science (ICETETS), 24-26 February 2016, Kings College of Engineering Thanjavur, Tamil Nadu, India
7. Lokesh S and Udhayakumar G, "Analysis of QRS Peak and Edge detection in ECG signal using Entropy", International Conference on Smart Automation in Computer, Electrical, Electronics And Communication Engineering September 6-7, 2019
8. Pandian A and Udhayakumar G, "Texture Analysis of Reaction Diffusion Level Set Evolution Of Multiple Sclerosis Lesions In Brain MR Images ", Seventh IEEE International Conference on Biosignals, Images, and Instrumentation (ICBSII 2021), March 25 - 27, 2021

### Research and Development Details

1. No. of Research Projects Completed: Nil
2. No. of Patents Filed: Nil
3. No. of Ph.D candidates guided/guiding: 2
  1. Mr. S.Lokesh-16144997403 – Part Time Research Scholar
  2. Mr. A.Pandian -17134997440 – Part Time Research Scholar
- \* Centre for Research, Anna University, Chennai recognized as a Supervisor (Ref. No: 2330263) for guiding Ph.D. and M.S.(By Research) scholars of this university under the Faculty of Electrical Engineering in the field of Bio-medical Signal and Image Processing,
4. No of Conferences Convened: 2

### Other Particulars

1. Participated & Completed successfully AICTE Training And Learning (ATAL) Academy Online FDP on "Internet of Things (IoT)" from 2020-12-7 to 2020-12-11 at GOVERNMENT COLLEGE OF TECHNOLOGY.
2. Attended 2 day Workshop on "Medical Devices Entrepreneurship, Intellectual Property Rights and Patents", held on 18th and 19th February 2021, organized by Department of Biomedical Engineering, College of Engineering and Technology, SRM Institute of Science and Technology.
3. Delivered a lecture titled "Analysis of Images towards Healthcare" for the IEEE sponsored Workshop on "Emerging Trends and Future Perspective in Image Processing and Computer Vision", 3rd January 2018 at Department of ECE, Sri Sairam Engineering College

4. Delivered a lecture titled “Neural Support Vector Machine”, for the AICTE sponsored virtual Short Term Training Programme on “Modern Optimization tools used in Engineering Field-I”, 8th October 2020 at Department of EIE, SRM Valliammai Engineering College
5. Delivered a lecture titled “Design and Implementation of Digital Circuit using Circuitverse”, for the AICTE sponsored Short Term Training Programme on “A Hands - on Approach for Design & Implementation of Digital Circuits using Open Source Computer Aided Design (CAD) Tools - II”, 5th November 2020 at Department of ECE, SRM Valliammai Engineering College
6. Delivered a lecture titled “Machine Learning Techniques for HV Applications”, for the AICTE-ISTE sponsored six days Induction Programme on “Recent Advancements in High Voltage Engineering”, 3rd February 2021 at Department of EEE, SRM Valliammai Engineering College
7. Delivered a lecture titled “Deep Learning in IoT”, for the AICTE sponsored Short Term Training Programme on “Internet of Things and its Applications”, 26th November 2020 at Department of IT, SRM Valliammai Engineering College
8. Delivered a Special Lecture in the Webinar Titled “Experimental Approach of Tuned Amplifiers and Multivibrators”, 9<sup>th</sup> June 2021 at Department of ECE, Loyola Institute of Technology, Chennai
9. I successfully completed Following NPTEL Courses
  - Biomedical Signal Processing with a score of 71% (Elite) in Jan-Apr 2018.
  - Machine Learning with a score of 69% (Elite) in Feb-Apr 2020.
  - Introduction to Biostatistics with a score of 75 % (Elite+Silver) in July-Sep 2019.
  - Medical Image Analysis with a score of 85 % (Elite+Silver) in Feb-Apr 2017.
  - Design for Internet of Things with a score of 81 % (Elite+Silver) in July-Sep 2021.
10. Delivered a Few topics in Value added course and FDP at SRM Valliammai Engineering College
  - Machine Learning-Introduction
  - Embedded System
  - Linear Integrated Circuits-ADC & DAC
  - Digital Signal Processing – Classification of signals and System, Fourier Transform
  - Microprocessor and Microcontroller- Microcontroller Interfacing
11. No of Symposium Convened : 05
12. No of National Seminar Organized: 01
13. Conducted a Value added course on “EMBEEDED SYSTEMS” from 05.02.2016 to 23.02.2016.
14. Conducted a Special lecture organized on the topic “Image Processing and Pattern Recognition” by Dr. Andrew Bosch, Lecturer, Griffith School of Engineering, Nathan Campus, Griffith University, Australia on 10-02-2014.