



**UNIVERSITY COLLEGE OF ENGINEERING PATTUKKOTTAI  
(A CONSTITUENT COLLEGE OF ANNA UNIVERSITY)  
RAJAMADAM -614701**

**FACULTY PROFILE**



- 1) NAME (Capital Letters) : Dr. K. SWAMINATHAN
- 2) DESIGNATION : TEACHING FELLOW
- 3) DEGREE : ME., Phd.,
- 4) DEPARTMENT : Electronics And Communication

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Ayyampatti (po),  
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- 1) MAIL ID : [swaminathan.vinoth@gmail.com](mailto:swaminathan.vinoth@gmail.com)
- 2) PHONE NO. : 9003313408
- 3) RESEARCH GUIDANCE : -
- 4) PUBLICATIONS (International & National) : 25
- 5) CONFERENCES/WORKSHOPS/SEMINAR/ SHORT TERM REFRESHER COURSE ATTENDED : 15
- 6) CONFERENCES/WORKSHOPS/SEMINAR ORGANIZED :
- 7) OTHER CONTRIBUTION (IF ANY) : Patent – International -01, National – 07.
- 8) Editorial Board : For IGI Book Chapter (3)
- 9) Scopus Id: <https://www.scopus.com/authid/detail.uri?authorId=59009482100>
- 10) Orcid id: <https://orcid.org/0000-0002-8116-057X>
- 11) GoogleScholarId  
[https://scholar.google.com/citations?hl=en&view\\_op=list\\_works&gmla=AETOMgG3uKzIQ5tF5a-KXNd2Lq8sbxbFjsma7T6eofPqm\\_FWMNrus1Ex2qAPFhiYkK9PIDe5gKjYzDLyhdKB0V1vWsYT6Yza3eYYhvUi9hUL&user=NPkC6QgAAAAJ](https://scholar.google.com/citations?hl=en&view_op=list_works&gmla=AETOMgG3uKzIQ5tF5a-KXNd2Lq8sbxbFjsma7T6eofPqm_FWMNrus1Ex2qAPFhiYkK9PIDe5gKjYzDLyhdKB0V1vWsYT6Yza3eYYhvUi9hUL&user=NPkC6QgAAAAJ)
- 12) BOOK Published: 01



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## 1. Publication.

1. A paper titled “**Implementation of Reconfigurable IDCT Architecture on FPGA For Multiple Video Standards(MPEG)**” published in a conference “**International conference on science & engineering trends**” on December 13-14 2012
2. The paper “**A 2-D IDCT Architecture Using Skew Registers For Video Codec Application**” is accepted for publishing in conference “**International Conference Research And Development Prospects On Engineering & Technology**” on March 29-30 2013
3. A paper with ” **A 2-D IDCT Architecture without Memory Registers For Multiple Video Standards** “ in **National Conference On Advanced Computational Intelligence System- NCACIS’13-2013** on March 02 2013
4. A paper entitled as “**A 2-D IDCT Architecture Using Skew Registers For Video Codec Application** “ in **National Conference On Advanced computational Intelligence System- NCACIS’13-2013** on March 02 2013
5. In a national level conference conducted by **KCET National Level Conference On Recent Trends In Emerging Trends** on March 06 2012, paper titled “**Implementation of IDCT Architecture**” is published
6. In a national level conference conducted by **JJCET National Level Conference On Signal Processing& Communication** on March 06 2012, paper titled “**Reconfigurable IDCT Architecture**” is published
7. A paper entitled "**Self-Healing FIR Filter using Error Sustain Adder and Synthesizable Multiplier**" has been Published by: **The Mattingley Publishing Co., Inc.** in **May –June 2020** with ISSN Number : 0193-4120 Page No. 26777-2678626777
8. A paper entitled "**Holistic Near Field Communication (NFC) Approach Digital access Based on IoTize**" in **May-June 2020**, Published by: **The Mattingley Publishing Co., Inc.** ISSN: 0193-4120 Page No. 10920 - 10926-10920
9. Published a paper in **IEEE Xplore** with entitled as “ **IoT-Based Smart Transformer Monitoring System with Raspberry Pi**” on February 2022



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10. A paper titled “ **Design and Implementation of PV Powered Air Cooler System Using Thermoelectric Cooler**” has been published in IEEE Xplore on February 2022.
11. Swaminathan, K., Ravindran, V., Ram Prakash, P., Satheesh, R. (2022). **A Perceptive Node Transposition and Network Reformation in Wireless Sensor Network**. In: Iyer, B., Crick, T., Peng, SL. (eds) Applied Computational Technologies. ICCET 2022. Smart Innovation, Systems and Technologies, vol 303. Springer, Singapore. [https://doi.org/10.1007/978-981-19-2719-5\\_59](https://doi.org/10.1007/978-981-19-2719-5_59).
12. Swaminathan, K., Ravindran, V., Ponraj, R., Satheesh, R. (2022). **A Smart Energy Optimization and Collision Avoidance Routing Strategy for IoT Systems in the WSN Domain**. In: Iyer, B., Crick, T., Peng, SL. (eds) Applied Computational Technologies. ICCET2022. Smart Innovation, Systems and Technologies, vol 303. Springer, Singapore. [https://doi.org/10.1007/978-981-19-2719-5\\_62](https://doi.org/10.1007/978-981-19-2719-5_62).
13. Swaminathan, K., Vennila, C., & Prabakar, T. N. (2021). Novel routing structure with new local monitoring, route scheduling, and planning manager in ecological wireless sensor network. J. Environ. Protect. Ecol, 22(6), 2614-2621.
14. **An efficient SAR image detection based on deep dense-mobile net method** R. Bhavani ; V. Ramkumar ; V. Ravindran<sup>3</sup> ; R. Sindhuja ; K. Swaminathan 7th International Conference on Computing in Engineering & Technology (ICCET 2022), 2022 p. 92 – 95 Conference: 7th International Conference on Computing in Engineering & Technology (ICCET 2022).
15. K.Swaminathan, Dr.B.Rajappa, **A Novel Mixed Routing Methodology (MRM) For Heterogeneous Sensor Network Using Machine Learning** Neuro Quantology September 2022 Volume 20, Issue 9, Page 2435-2445, doi: 10.14704/nq.2022.20.9.NQ4428.
16. Paranthagan B, Vijay Ravindran , M.Marimuthu, Satheesh Raguathan, Swaminathan K Ramkumar V, **Design and Implementation of PV Powered Air Cooler System Using Thermoelectric Cooler**. 2021 Innovations in Power and Advanced Computing Technologies (i-PACT) | 978-1-6654-2691-6/21, 2021 IEEE | DOI: 10.1109/I-PACT52855.2021.9697007.



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17. Vijay Ravindran, Ramprakash Ponraj C. Krishnakumar, Satheesh Raguathan, Ramkumar V, Swaminathan K. **IoT-Based Smart Transformer Monitoring System with Raspberry Pi**, 2021 Innovations in Power and Advanced Computing.
18. **Prediction of EV battery SOC using a charging and discharging model** V. Ravindran ; A. Durgadevi R. P. Ponraj ; S. Raguathan ; K. Swaminathan 7th International Conference on Computing in Engineering & Technology (ICCET 2022), 2022 p. 306 – 310 , Conference: 7th International Conference on Computing in Engineering & Technology (ICCET 2022).
19. **An effective method for charging electric vehicles through wireless power transfersystem**, R. P. Ponraj ; K. Badrinath; V. Ravindran; S. Raguathan ; K. Swaminathan, 7th International Conference on Computing in Engineering & Technology (ICCET 2022), 2022 p. 302 – 305.
20. Swaminathan, K., Ravindran, V., Ponraj, R. P., Venkatasubramanian, S., Chandrasekaran, K. S., & Raguathan, S. (2023, January). A Novel Composite Intrusion Detection System (CIDS) for Wireless Sensor Network. In 2023 International Conference on Intelligent Data Communication Technologies and Internet of Things (IDCIoT) (pp. 112-117). IEEE.
21. Kalyanaraman, K. (2023). An Artificial Intelligence Model for Effective Routing in WSN. In Perspectives on Social Welfare Applications' Optimization and Enhanced Computer Applications (pp. 67-88). IGI Global.
22. Swaminathan, K., Ravindran, V., Ponraj, R. P., Vijayasarithi, N., & Bharanidharan, K. (2023, August). Optimizing Energy Efficiency in Sensor Networks with the Virtual Power Routing Scheme (VPRS). In 2023 Second International Conference on Augmented Intelligence and Sustainable Systems (ICAISS) (pp. 162-166). IEEE.
23. Ponraj, R. K. S. P., Ravindran, V. T., & Raguathan, S. S. (2024). Society 5.0 and explainable artificial intelligenced implications.
24. Kalyanaraman, S., Ponnusamy, S., & Harish, R. K. (2024). Amplifying Digital Twins Through the Integration of Wireless Sensor Networks: In-Depth Exploration. In S. Ponnusamy, M.



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- Assaf, J. Antari, S. Singh, & S. Kalyanaraman (Eds.), Digital Twin Technology and AI Implementations in Future-Focused Businesses (pp. 70-82). IGI Global. <https://doi.org/10.4018/979-8-3693-1818-8.ch006>.
25. Kasiviswanathan, H. R., Ponnusamy, S., & Swaminathan, K. (2024). Investigating Cloud-Powered Digital Twin Power Flow Research and Implementation. In S. Ponnusamy, M. Assaf, J. Antari, S. Singh, & S. Kalyanaraman (Eds.), Digital Twin Technology and AI Implementations in Future-Focused Businesses (pp. 176-194). IGI Global. <https://doi.org/10.4018/979-8-3693-1818-8.ch012>.
26. Kalyanaraman, K. & Prabakar, T. N. (2024). Enhancing Women's Safety in Smart Transportation Through Human-Inspired Drone-Powered Machine Vision Security. In S. Ponnusamy, V. Bora, P. Daigavane, & S. Wazalwar (Eds.), AI Tools and Applications for Women's Safety (pp. 150-166). IGI Global. <https://doi.org/10.4018/979-8-3693-1435-7.ch009>.
27. Kalyanaraman, S., Ponnusamy, S., & Harish, R. K. (2024). Amplifying Digital Twins Through the Integration of Wireless Sensor Networks: In-Depth Exploration. In S. Ponnusamy, M. Assaf, J. Antari, S. Singh, & S. Kalyanaraman (Eds.), Digital Twin Technology and AI Implementations in Future-Focused Businesses (pp. 70-82). IGI Global. <https://doi.org/10.4018/979-8-3693-1818-8.ch006>.
28. Kalyanaraman, S., Ponnusamy, S., Saju, S., Sangeetha, S., & Karthikeyan, R. (2024). Adversarial Learning for Intrusion Detection in Wireless Sensor Networks: A GAN Approach. In S. Ponnusamy, J. Antari, P. Bhaladhare, A. Potgantwar, & S. Kalyanaraman (Eds.), Enhancing Security in Public Spaces Through Generative Adversarial Networks (GANs) (pp. 39-52). IGI Global. <https://doi.org/10.4018/979-8-3693-3597-0.ch004>.
29. Kalyanaraman, S., Ponnusamy, S., Saju, S., Vijay, R., & Karthikeyan, R. (2024). GAN-Depends Privacy Protection for Public Data Sharing in Wireless Sensor Networks. In S. Ponnusamy, J. Antari, P. Bhaladhare, A. Potgantwar, & S. Kalyanaraman (Eds.), Enhancing Security in Public Spaces Through Generative Adversarial Networks (GANs) (pp. 259-273). IGI Global. <https://doi.org/10.4018/979-8-3693-3597-0.ch018>.



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## **2. FDP/WORKSHOP ATTENDED:**

1. A FDP on “**Internet of things- Concepts and implementation**” organized by SVKM’S NMIMS SCHOOL OF BUSINESS MANAGEMENT under AICTE sponsor between Dec13 – Dec17, 2021.
2. Attended a Faculty Development program(FDP) organized by SHIVANI INSTITUTE OF TECHNOLOGY on 29<sup>th</sup> & 30<sup>th</sup> Dec-2009.
3. A seminar was attend in “**Printed Circuit Board & fabrication Process**” Conducted at JJ COLLEGE OF ENG. & TECH on 10<sup>th</sup>, 11<sup>th</sup> Dec-2012.
4. A seminar on **ANDROID** Conducted JJCET on FEB-2013 was attended.
5. An AICTE sponsor FTP on “**Principal of Artificial Intelligence, Machine Learning and Deep learning**” conducted by Department of studies in Computer science, University of Mysore.
6. An International Webinar on “**Challenges in 500GW by 2030**” on 8- March 2022.
7. A FDP on “ **Internet of Things- Smart way to Future**” by “ Seshadri Rao Gudlavalluru Engg.College, Andhra Pradesh between 18-23 July 2022.
8. An **Intellectual Property Awareness** program organised by Intellectual Property Office,India on March 31, 2022.
9. “**Hands-On Workshop on Software Defined Radios**” organized by AICTE Training and Learning (ATAL) Academy at SHIV NADAR University between 07/03/2022 to 11/03/2022 was attended.
10. A one week Short term FDP by Ramrao Institute of Technology, Navi Mumbai on“**Internet of Things in Industry**” between June 8-12 ,2020.
11. An international Webinar “**Multimode Antennas for Future Wireless Networks**” ,Organized by Department of Electronics and Communication Engineering, SNS College of Technology, on 01.06.2020.



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12. **“Advances and Challenges in Industrial Automation, E-vehicles, Product and Process Controls Manufacturing in Electrical and Electronics engineering”** organized by the Department of Electrical and Electronics Engineering, from 3.06.2020 to 7.06.2020 was attended.
13. **“Recent Trends in Technology & Digital Education”** organized by Department of Electronics & Telecommunication Engineering in association with ISTE from 27th May to 29th May 2020.
14. A Webinar on **“Emergence of Data Analytics and its impact on Data Warehouse”** held on 31<sup>st</sup> May, 2020, organised by Computer Engineering Department, VIVA Institute of Technology, Virar, and Maharashtra. Was successfully finished.
15. Online **Quiz on “Digital System Design with ASM Charts”** conducted on 5/29/2020 with 65 % score by Holy Mary Institute of technology and science, Telugana.
16. **“Internet of Things: Concepts and Implementation”** conducted by **AICTE Training and Learning (ATAL)** Academy between 13/12/2021 to 17/12/2021 at SVKM'S NMIMS SCHOOL OF BUSINESS MANAGEMENT – INDORE was attended.
17. **“Principles of Artificial Intelligence, Machine Learning, and Deep Learning”** by **AICTE Training and Learning (ATAL)** Academy from 26/11/2021 to 30/11/2021 at Dept. of Studies in Computer Science.
18. A One Week International Faculty Development Programme on **“Cyber Forensics and Information Security”** held from 24-02-2022 to 03-03-2022 by DWARAKA DOSS GOVERDHAN DOSS VAISHNAV COLLEGE (AUTONOMOUS) Chennai – 600 10.
19. **“Research proposal writing for funded projects”** by Dr.V.Lingasamy, Manager, Research and Development Rakuten Mobile Inc, Bangalore on 07.11.2022.
20. **“Digital Circuit Design using Verilog”** a webinar conducted by “Coimbatore Institute of Technology” on 10-july-2023.



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21. “Challenges & Future direction for MIMO Communication System” by “Coimbatore Institute of Technology” conducted on 11-July-2023(FN).
22. “ Role of Multi antenna Signal Processing Technique for futuristic wireless Communication” a webinar conducted on 11-July-2023(AN) by “Coimbatore Institute of Technology”
23. An intellectual property awareness program conducted by “ National IP Awareness Program” on 26- September 2023 was successfully attended by **Intellectual Property of India.**

## **Patent Published.**

### **National Patent :**

- **Title:** AI based vision Gadget for Visually Impaired people.  
**Date:** 07/05/2020. **Status:**  
Published. **Inventor**  
**position: 3.**
- **Title :** A integrated IoT based speed control and Crash Avoidance system  
**Date:** 30/12/2022 **Status:**  
Published. **Inventor**  
**position: 2.**
- **Title:** Energy efficient Heating based INSTANT RICE PREPARATION.  
**Date:** 28/10/2022 **Status:**  
Published. **Inventor**  
**position: 6.**
- **Title:** AI techniques applied IoT monitored Vertical Gardening System.  
**Date:** 29/07/2022. **Status:**





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Published. **Inventor**

**position: 7.**

- **Title:** IoT based Retractable Roofing system cum solar power generation using Foldable solar panel.

**Date:** 11/04/23 **Status:**

published. **Inventor**

**position: 1**

- **Title:** A smart baggage Trolley enabled with IoT connectivity.

**Date:** 18/09/23 **Status:**

published. **Inventor**

**position: 1**

**International patent**

1. **Name : Smart Mobility Assistive and Posture Correction Chair** **Country: UK**

**Number: 6345656**

**Professional Body Membership.**

- **Technical body name: Institution of Engineers (India) IEI**

**Member type:** Associate member.

**Member no** : AM 148793-3

- **Technical body name: Indian Society for Technical Education (ISTE) ISTE** **Member type:** Permanent member.

- **Technical body name: International Association of Engineers (IAENG).** **Member no:** 126163.



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- **Technical body name: Institute for Engineering Research and Publication**  
**Member type:** Professional Membership  
**Member no** : PM90814723.
  
- **Technical body name: Internet Society (ISOC)**  
**Member type:** Global Member  
**Member no** : 2271218.
  
- **Technical body name: European Society for Research on Internet Interventions (ESRII)**  
**Member no** : 55792IN.

## Reviewer position

- I am playing the Reviewer role of the “**Computational Intelligence and Neuroscience**” (ISSN: 6875273, 16875265). Review identifier - ID: **9131703**.
- I am the reviewer of the “**Perspectives on Social Welfare Applications’ Optimization and Enhanced Computer Applications**” IGI-Global International Academic Publisher

## Editorial position

- I am working as a editorial role for book chapter named “**Digital Twin Technology and AI Implementations in Future-Focused Businesses**” in **IGI Science and Technology, USA**” ISBN13: **9798369318188** , EISBN13: **9798369318195**.
  - I am playing a editorial role in journal “ **Spectrum Journal** “ ISSN :**2583-9306**
  - I am one of editorial board member for journal “**Journal of VLSI circuits and systems (ISSN; 2582-1458)**”.
  - I am one of the editorial role for book series named as “ **Enhancing Security in Public Spaces Through Generative Adversarial Networks (GANs)**” ISBN13: **9798369335970** , EISBN13: **9798369335987** in IGI Science and Technology, USA.
  - One of guest editor for issue named as “ **On Interdisciplinary Perspectives On Artificial Intelligence Systems: From Theory To Application** in journal “**Advances in Science, Technology and Engineering Systems Journal**”.
- **Text book published**
- Name of the Book: Computer Architecture and organisation** ISBN number: **9788196678234**