

Kavitha V

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Looking for a challenging opportunity that demands the best of my professional ability in terms of technical and analytical skills and helps me broaden and enhance my current skills and knowledge.

Experience

19.06.2007 – 20.11.2010

Software Engineer

L&T Infotech, Chennai.

02.07.2015 – 30.09.2016

Assistant Professor

J.J College of Engineering & Technology, Tiruchirappalli.

02.12.2016 – 30.05.2017

Assistant Professor

Mount Zion College of Engineering & Technology, Pudukkottai.

02.07.2018 – 30.04.2020

Assistant Professor

M.A.M College of Engineering & Technology, Tiruchirappalli.

25.08.2022 – 30.05.2023

Temporary Faculty

Indian Institute of Information Technology, Tiruchirappalli.

Education

PURSUING (AUGUST 2020 – TILL DATE) – Synopsis Submitted

Ph.D. / Indian Institute of Information Technology, Tiruchirappalli

Thesis Title: Deep Learning-based Spectrum Sensing in Cognitive Radio Networks.

Aggregate: 8.75 CGPA

AUGUST 2013 - MAY 2015

M.E/ College of Engineering, Guindy

University: Anna University, Chennai.

Aggregate: 7.51 CGPA

AUGUST 2003 - MAY 2007

B. E / Hindusthan College of Engineering and Technology, Coimbatore.

University: Anna University, Chennai.

Percentage: 71

JUNE 2002 - MAY 2003

HSC / Alagappa Matriculation HSS School, Karaikudi.

Percentage: 86.60

Journal Publications:

1. V. Kavitha and G. Seetharaman, "Effective energy detection using machine learning techniques for cooperative sensing in cognitive radio networks," *Multimedia Tools and Applications*, Springer, 2024. doi: [10.1007/s11042-024-20343-3](https://doi.org/10.1007/s11042-024-20343-3)
2. V. Kavitha and G. Seetharaman, "A novel hybrid deep learning approach of cooperative spectrum sensing for cognitive radio networks," *AEU – International Journal of Electronics and Communications*, Elsevier, (Accepted), 2024.
3. V. Kavitha and G. Seetharaman, "Stacked LSTM-based spectrum sensing in cognitive radio networks: Performance analysis of SNR and BER," *The Journal of Computer Science*, Science Publications, (Accepted, Scopus Indexed), 2024
4. V. Kavitha and G. Seetharaman, "Deep learning-driven compressed sensing using U-Net for cognitive radio spectrum detection," *Wireless Networks*, Springer, (Under Major Revision, SCIE), 2024.
5. V. Kavitha and R. Pitchaikkannu, "A VLSI architecture of realisation of a wireless endoscopy system," *International Journal of Embedded Systems and Applications*, vol. 9, no. 1, pp. 1–7, 2019.

Patent:

1. V. Kavitha and G. Seetharaman, *Revolutionizing Wireless Communications: Advanced Signal Processing Techniques for Cognitive Radio Networks*, Indian Patent Application No. 202441050031, Published, 2024 (granting in process).

Book & Book Chapter:

Book:

1. V. Kavitha, *Foundations of Electronics and Communication Engineering*. New Delhi, India: AG Publishing House, 2024. ISBN: 978-81-982845-8-7.

Book Chapter:

1. V. Kavitha and M. Murali, "A VLSI architecture of spectrum sensing system for cognitive radio," in *Advances in Automation, Signal Processing, Instrumentation, and Control*, 2021, pp. 2214–2224. Springer. doi: 10.1007/978-981-15-8221-9_206

Conferences:

1. V. Kavitha and M. Murali, "Spectrum sensing system for cognitive radio," in *Proc. Int. Conf. on Automation, Signal Processing, Instrumentation, and Control (ICASIC)*, Vellore Institute of Technology, Vellore, India, 2020.
2. V. Kavitha and R. Pitchaikkannu, "Realisation of a wireless endoscopy system," in *Proc. Int. Conf. on Signals, Systems and Communications (ICSSC)*, College of Engineering, Guindy, Chennai, India, 2019.
3. V. Kavitha and M. Murali, "FPGA implementation of Canny edge detection algorithm," in *Proc. AICTE Sponsored Int. Conf. on Recent Advancements in Electrical, Electronics, Computer and Communication Engineering (IConRAEECCCE'19)*, MEPCO, Sivakasi,

Areas of Interest:

- VLSI Design
 - Signals & Systems, DSP
 - Electric Circuits and Networks
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Skill Summary:

- Software Languages: C, C++, Python, MATLAB.
 - HDL: Verilog.
 - Tools: Xilinx, Vivado, Cadence, Quartus
 - Operating Systems: Windows, MacOS & Linux.
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Vision & Mission

Vision:

To foster excellence in teaching, research, and innovation in Electronics and Communication Engineering, with a special focus on VLSI and Cognitive Radio technologies, thereby nurturing future-ready engineers and contributing to national technological growth.

Mission:

1. To provide quality education in core ECE areas through innovative pedagogy, research orientation, and industry collaboration.
 2. To mentor students in problem-solving, critical thinking, and lifelong learning for academic, entrepreneurial, and societal contributions.
 3. To pursue cutting-edge research in VLSI, Cognitive Radio, and AI-driven communication systems.
 4. To contribute actively to Anna University's academic and research excellence.
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Trainings undertaken:

- Participated in seven days workshop on **“Hands-on Training on FPGA Architectures and Programming using Verilog HDL”** at National Institute of Technology, Tiruchirappalli.
- Participated in 40 hours FDP on **“AI Driven Semiconductor Design and Development for Next Generation Computing Systems”** sponsored by Meity and NIT Warangal.
- Completed 40 Hours FDP on **“Microsoft Power BI Data Analyst”** during 9th Dec to 13th Dec 2024 conducted by E & ICT Academy.
- Participated in 10 days FDP in **“Programming in C”** conducted by Codetantra.
- Participated in 10 days FDP in **“Programming in Python”** conducted by Codetantra
- Participated in one-day workshop on **“Deep Learning based RF Signal Classification: Hands-on”** at National Institute of Technology, Tiruchirappalli.
- Participated in Faculty Development Program on **System Design Methodologies for Embedded, IoT, AI, & HPC** using Intel FPGA from 19th to 30th April 2021 organized by “Scheme of financial assistance for setting up of Electronics and ICT Academies” of the Ministry of Electronics and Information Technology (MeitY), Government of India.
- Participated in Faculty Development Program on **Cognitive Machine Intelligence – The New World of Research Innovation** from 08th to 12th March 2021 organized by VIT, Chennai.

- Participated in Faculty Development Program **Advanced Communication and Antennas** from 15th to 26th February 2021 organized by “Scheme of financial assistance for setting up of Electronics and ICT Academies” of the Ministry of Electronics and Information Technology (MeitY), Government of India.
 - Participated in the Faculty Development Program **Sparse Signal Processing and its applications** from 18th to 22nd October 2021 organized by AICTE Training and Learning (ATAL) Academy.
 - Organized Five Days Hands-on Workshop on **NI Graphical System Design Platform for Engineering Education and Research** from 01st to 05th March 2021 at Indian Institute of Information Technology, Tiruchirappalli.
 - Participated in 2 days workshop on **“Analog and Digital IC Design using Cadence”** at Easwari Engineering College held on 21st and 22nd March 2015.
 - Participated in 2 days workshop on **“Analog IC Design using Cadence”** in VIT, Chennai held on 21st and 22nd November 2014.
 - Participated in 3 days Workshop on **“CAD Tools in VLSI”** at SRM University, held on 20th and 21st July 2014.
 - Attended one-day workshop on **“The Art of Writing Research Articles”** jointly Organized by M.A.M B-School and MAMCET on 19th November 2018.
 - Participated in 2 days hands-on training workshop entitled **“Xilinx vivado design Flow & High Level Synthesis Flow using Zynq”** Organized by K.L.N. College of Engineering in Association with CG-CoreEL Technologies, Bangalore from 25th and 26th September 2018.
 - Participated in a workshop on **"Thesis and Research paper writing using Latex"** in SKCET, Coimbatore.
 - Participated in three days workshop on **“Train the Trainer Workshop on INFYTQ based FP”** Organized by Infosys Limited from 24th to 26th June 2019.
 - Attended One Day Workshop on **Scilab, Python, C&C++, and R Programing** conducted by IITBombay (Spoken Tutorial).
 - Participated in a two-day national workshop on **“Hands-on Training on Artificial Neural Networks using MATLAB”** in VIT, Chennai.
 - Participated in Five Day FDP on **"Empowering Teachers in 21st Century Education”** in NIT, Trichy.
 - Participated in One Day Workshop on **VLSI Technology** conducted by Hindusthan College of Engineering and Technology.
 - Attended a workshop on **“Computer Hardware Assembly and Networking”** conducted by Hindusthan Institutions and Software Institute of Tamilnadu Private Limited.
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Projects:

1. **Realisation of a Wireless Endoscopy System**, Realized a wireless endoscopy system. Omni-vision OV6920 is used to capture images. The captured image is stored in SRAM of Altera DE2. Then, the captured image is compressed using Verilog coding. Compressed image is transmitted wirelessly
 2. **Digital Watermarking and Image Compression using SPIHT Algorithm**.
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Online courses undertaken:

- Completed a 30 hours Online course on **“Machine Learning for Data Science using Python”** conducted by “Dept. of CSE, NIT Warangal” in association with Centre for Continuing Education from 1st to 15th December 2022.
 - Successfully Completed **“Latex 101x”**, an online course conducted by **IIT Bombay** and got **“A+”** grade.
 - Attended and certified in **IIT Bombay FDP (FDP101x)** with a consolidated score of 74% on **“Foundation program in ICT for Education”**.
 - Attended and certified in **IIT Bombay FDP (FDP201x)** on **“Pedagogy for online and Blended Teaching - Learning process”**.
 - Completed a course in **“Embedded System Design using ATMEL 89C51”** and obtained **‘O’** grade.
 - Attended Code Tantra Online Course for **“C and JAVA programming Language”** organized by IIT Bombay.
 - Completed courses in **“Computer Foundation”** and **“Advanced Computer Foundation”** and got first class in the school level.
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Outreach Activities:

- Delivered a lecture on the topic **“Digital CMOS VLSI Design”** at **IEI Local Chapter, Trichy** on 19.11.2019.
 - Resource person for one-day seminar on Digital Circuits, M.A.M School of Engineering, Tiruchirappalli.
 - Resource person for a one-day seminar on Digital Signal Processing at J.J College of Engineering & Technology, Tiruchirappalli.
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Membership

- VSI (VLSI SOCIETY OF INDIA)
 - TOASTMASTER INTERNATIONAL
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Competitive Exams Cleared

- GATE 2013 (Score – 29.33).
 - UGC NET (Electronic Science) 2023 with a score of 170.
 - TANCET 2013 (Score – 53.23).
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NPTEL Courses Done:

- Completed a “Qualitative Research Methods and Research Writing” course successfully.
 - Completed a “Digital Circuits” course successfully and got “ELITE WITH SILVER”.
 - Completed a “CMOS Digital VLSI Design” course successfully and got “ELITE”.
 - Completed a “Control Systems” course successfully and got “ELITE”.
 - Completed a “Python for Data Science” course successfully and got “ELITE WITH GOLD”.
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Language Proficiency:

- English – Read, Write, and Speak
 - Hindi – Read, Write, and Speak
 - Tamil – Read, Write, and Speak
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Personal Traits

- Good analytical skills and ability to deal with people diplomatically.
 - Ability to solve comprehensive problems
 - Team Facilitation, Determination, dedication, and discipline.
 - Willing to learn and adapt to new opportunities and challenges
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Extra-Curricular Activities

- Got a certificate for an invaluable service rendered in making the fund raising program successful for “**HINDU MISSION HOSPITAL**” at the age of 8.
 - Attended and passed the SENIOR of “**ALL INDIA GENERAL KNOWLEDGE TEST2001**” conducted by the Andhra Pradesh Public Library Association.
 - Learnt Carnatic music for two years.
 - Won in Debates, Extempore, and Essay Writing at the school level.
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