

Dr.V.R.Ravi

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Objective

- With a unique blend of hardware and software expertise in state of the art technologies that includes Artificial Intelligence, Machine Learning, Deep Learning, Internet of Things, Process Control, Industrial Automation, Embedded system and an impeccable track record of enriching student's carriers, I would like,
 - To mould the student fraternity into competent professionals by imparting technical knowledge, social skills.
 - To groom the faculty community to pursue activities that includes availing grants from agencies, articles publishing and department growth oriented activities.
- With an exemplary industrial experience and administrative proficiency, I would like to contribute to the development and growth of the institution.

Key skills:

1. Design expert in i) Predictive controller, ii) AI based non-invasive medical device, iii) Edge AI, iv) AIoT
2. Strong program knowledge in MATLAB, LabVIEW and Python
3. Strong knowledge in NI Hardwares (NI USB DAQ-6009, NI CDAQ-9178 Compact DAQ, NI CRIO-9074 Compact RIO Controller, NI MYRIO 1900), Arduino Yun, Raspberry PI 4 Model B, ESP 32, NVIDIA Jetson Nano Development board, STM 32 development board
4. Ability to design and develop Innovative projects
5. Strong knowledge in interdisciplinary collaborative projects

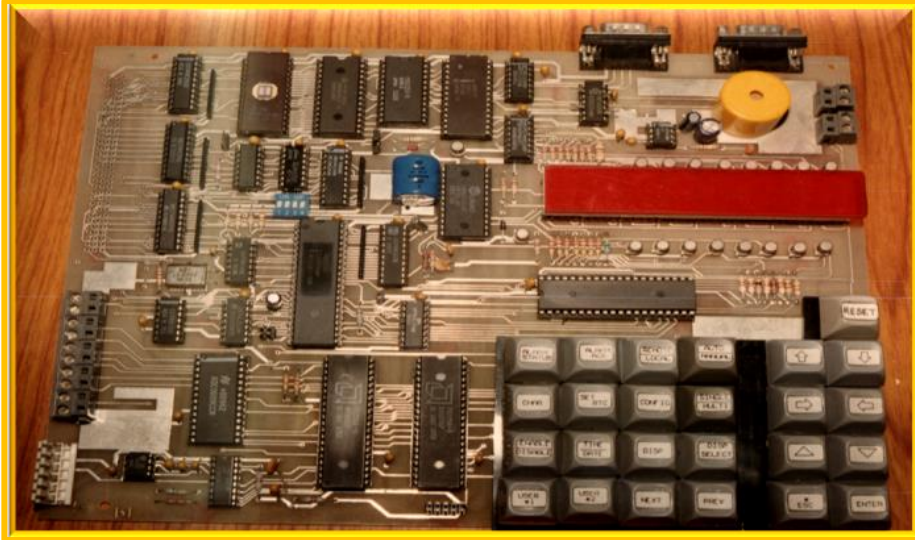
Personal Information

Father Name	P.RAMACHANDRAN
Date of Birth	17. 12. 1965
Sex	Male
Marital Status	Married
Languages Known	English, Tamil
Nationality	Indian
Community	MBC

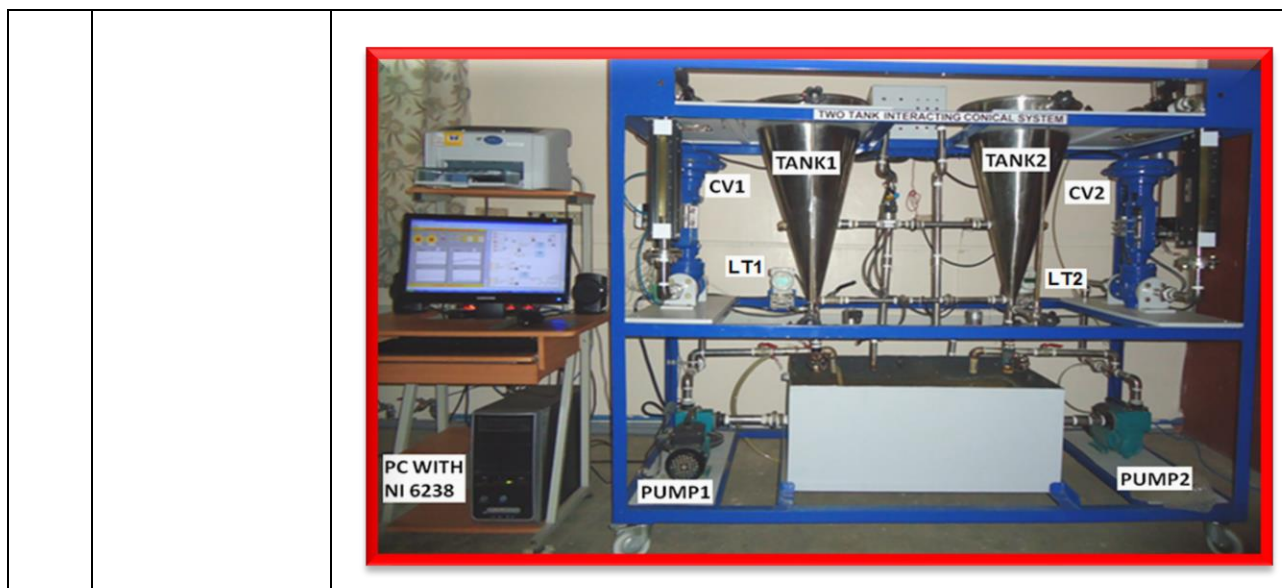
Academic Profile

Degree	Year of Passing	University	Area of Specialization	% of Mark	Institution where studied
Ph.D.	2013	Anna University, Chennai	Control System	---	Madras Institute of Technology, Anna University Campus, Chennai
ME Degree	1995	Bharathiyar University, Tamilnadu	Applied Electronics	73.4%	PSG College of Technology, Coimbatore
BE Degree	1988	Bharathiyar University, Tamilnadu	Instrumentation & Control Engineering	70.8%	Tamilnadu College of Engineering Coimbatore
+ 2	1983	Board of Higher Secondary Examination, Tamilnadu	Maths, Physics Chemistry and Biology	70 %	Sir Ramaswamy Mudhaliar Higher Secondary School, Chennai
S.S.L.C	1981	Board of Secondary Examination, Tamilnadu		88.8%	Government Higher Secondary School, Chennai

Project Work / Thesis

S.No	Project/Thesis	Title of Project / Thesis
1	UG Project	<p data-bbox="548 338 1430 369">8085 Microprocessor Based Maximum Demand Controller</p> <p data-bbox="570 422 1403 453">(Won the First Prize in State Level Best Project Award)</p> <p data-bbox="518 478 691 510"><u>Objectives:</u></p> <ul data-bbox="565 537 1463 888" style="list-style-type: none"> <li data-bbox="565 537 1463 615">• To Measure single phase AC voltage, AC current, phase angle, frequency, power factor, power and energy. <li data-bbox="565 653 1463 730">• Interfacing sensors with 8085 microprocessor-based development board <li data-bbox="565 768 1463 888">• Comparing present maximum demand value with sanctioned maximum demand value, the loads will be switched ON/OFF based on user defined load priority.
2	PG Thesis	<p data-bbox="591 924 1390 997">8051 Microcontroller based Universal Process Plant Monitoring System</p> <p data-bbox="518 1003 675 1035"><u>Objective:</u></p> <ul data-bbox="565 1062 1463 1094" style="list-style-type: none"> <li data-bbox="565 1062 1463 1094">• Design and Develop a miniature DCS for Process industries  <p data-bbox="518 1692 675 1724"><u>Features:</u></p> <ul data-bbox="565 1751 1419 1887" style="list-style-type: none"> <li data-bbox="565 1751 1419 1887">• Support Master and Slave Configuration (Master board and Slave controllers are 8051 based microcontroller boards)

		<ul style="list-style-type: none"> • Inputs & Outputs <ul style="list-style-type: none"> • 64 analog inputs & 16 analog outputs • 64 digital inputs & 64 digital outputs (TTL compatible) • 2 frequency inputs (TTL compatible) • Supports PID and ON/OFF controllers • Each board supports Hooter, operator keypad, 7 segment LED display and serial port • Each board have 32KB of EEPROM and 32KB of Battery back-up RAM • Support PC and Master board interfacing feature • Powerful PC based DCS programme (developed using PASCAL Language) provides Bar graph display, Mimic display, Alarm display, Group display, Process data logging / Printing features • Configuration of process parameters can be done through slave board or PC
3	Ph.D Thesis	<p style="text-align: center;">Regime Based Multi Model Adaptive Control Schemes for MIMO System</p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"> • Design and fabrication of Two Conical Tank interacting Level System (TCTILS) as Non-Linear TITO Benchmark setup • Design and implementation of Regime based Adaptive decentralised PID controller for TCTILS • Design and implementation of Regime based Adaptive Mixed Fuzzy Logic Controller for TCTILS • Design and implementation of Regime based Adaptive Dynamic matrix Controller for TCTILS • Implementation of all the above controllers in TCTILS experimental setup • Comparison of Simulation study and experimental study of performance evaluation of all the above controllers ✓ Simulation studies are carried out in MATLAB. Experimental studies are carried out using LabVIEW and National Instruments Hardware



Experience Profile

Teaching Experience

Post Held	Period		Name of the Department	Name of the Institution
	From	To		
Lecturer	29.09.88	30.06.95	Electronics & Instrumentation Engineering	Tamilnadu College of Engineering, Coimbatore
Senior Lecturer & Head of the Dept. Incharge	01.07.95	30.08.96	Electronics & Instrumentation Engineering	Tamilnadu College of Engineering, Coimbatore
Senior Lecturer	04.09.96	30.07.99	Instrumentation & Control Engineering	Crescent Engineering College, Chennai
Professor	02.07.07	14.10.16	Electronics & Instrumentation Engineering	Velammal Engineering College, Chennai
Professor & Head	15.10.16	11.11.19	Electronics & Instrumentation Engineering	Velammal Engineering College, Chennai
Professor	13.11.19	31.09.20	Electronics & Communication Engineering	Vel Tech High Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Chennai

Dean Academics & Dean – (School of Electrical and Computing Science)	01.10.20	Till date	Electronics & Communication Engineering	Vel Tech High Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Chennai
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Total Teaching Experience: 27 years 07 months

Industrial Experience

Post Held	Period		Name of the Department	Name of the Industry
	From	To		
General Manager <u>Responsibilities</u> - Marketing - Product Design & Production planning - Service & Maintenance of machines	31.07.99	23.06.07	Weaving Division	S.P. Garments Chennai

Total Industrial Experience: 7 years and 11 months

Total Experience

Teaching Experience = 27 years 07 months
 Industrial Experience = 7 years 11 months
35 years 06 months

Area of Interest

- ❖ PID Controller, Fuzzy Logic Controller, Neuro Controller, Predictive Controller, Multivariable controller Design
- ❖ Optimisation Techniques
- ❖ Industrial Automation
- ❖ Embedded Vision System Design using MATLAB & LabVIEW
- ❖ Controller design using FPGA implementation
- ❖ Machine learning
- ❖ Deep Learning
- ❖ Predivve Maintenance
- ❖ Edge AI & AIoT

- ❖ Process Control
- ❖ Smart Devices

Funded Projects

S.No	Project Title	Scheme/ Sponsoring Agency	Position Held	Amount Sanctioned (Rs)	Period	Status
1	Computerized Test Rig for Submersible and Monobloc Pumps	TAPTEC AICTE	Principal Investigator	6.6 Lakhs	1995-1997	Completed
2	Fuzzy Logic Based Split Range PH Control	Research & Development (R & D) AICTE	Co-Investigator	2.0 Lakhs	1999-2001	Completed
3	Implementation of Advance Controllers for Interacting Non-Linear System	MODROBS AICTE	Principal Investigator	8.0 Lakhs	2008-2010	Completed Ref: F.N: 8023 / RID / BOR / MOD – 339 / 2007-2008
4	Establishment of Centre of Excellence in Industrial Automation & IIoT	MODROBS AICTE	Principal Investigator	11.94 Lakhs	2019-2021	Ongoing Ref : F.No: 9-153/RIFD /MODROBS /Policy-1 /2017-18
5	Establishment of Centre of Excellence in Artificial Intelligence	MODROBS AICTE	Principal Investigator	Rs 7.41 Lakhs	2020 - 2022	Sanctioned
6	IDEA LAB	AICTE	Faculty Coordinator	Rs 76.00 Lakhs	2021	Cleared First level of Evaluation
7	Autonomous Wheelchair	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2017 - 2018	Completed

8	Efficient Arecanut Tree Climbing Machine	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2017 - 2018	Completed
9	Emotional Intelligence Adapting AI Techniques	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2018 - 2019	Completed
10	Smart Wrist Control for Home Automation	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2018 - 2019	Completed
11	IoT Based Saline Infusion Monitoring and Control System	BIRAC (PACE)	Principle Investigator	10.64 Lakhs		Not Accepted)
12	Smart Phone controlled Arecanut Tree Climbing Machine for Efficient Harvesting	DST Product Development (or) NABARD FSPF	Principle Investigator	17.25 Lakhs		Ready for Submission
13	Small Power Generation using Rooftop Air Ventilator with AFPM Generator	UGC Major Research Project Scheme	Principle Investigator	12 Lakhs		Under Preparation
14	AI based Smart Non-Invasive Glucometer	Institute Sponsored Project	Principle Investigator	1 Lakh	2023-24	Completed
15	AI based Smart Non-Invasive Hemoglobin Measurement	Institute Sponsored Project	Principle Investigator	1 Lakh	2024-25	In-Progress

Patent Submitted

S.No	Title of the patent	Status
1	Efficient Arecanut Tree Climbing Machine	Ready for Patent Filing

2	Smart Wrist Control for Home Automation	Ready for Patent Filing
3	Emotional Intelligence Adapting AI Techniques	Ready for Patent Filing
4	Smart Wheel Chair	Ready for Patent Filing
5	IoT Based Saline Infusion Monitoring and Control System	Under Preparation

Consultancy Projects

S.No	Project Title	Company Sponsored	Amount Sanctioned	Duration
1	Design and Development of Control Circuits for a 4 Axis Industrial Robot	Sharp Industries, Coimbatore	Rs 2.0 Lakhs	1989 - 1990
2	Microprocessor Based Test Rig for Analog Quarts Clock	Pricol, Coimbatore	Rs 0.5 Lakhs	1992 - 1993
3	PC Based Test Rig for Single Phase induction Motor	Best Pumps, Coimbatore	Rs 1.0 Lakhs	1993 - 1994
4	Magnetic Levitation System	National Instruments, Bangalore	Rs 5.2 Lakhs	2012-2013
5	Development of embedded (ARM Processor) C code based PID + Fuzzy Logic Controller for Temperature calibration System	Sansel Instruments and Control Pvt. Ltd., Chennai-95	Rs 0.25 Lakhs	2016-2017

Publications

International Journals (*Published – 10, Accepted -1, ready for Communication – 1*)

1. **V.R.Ravi** and T.Thyagarajan, Real Coded GA Tuned Adaptive Decentralized PI Controller for Two Conical Tank Interacting System, *Arabian Journal for Science and Engineering*, **SPRINGER**, Vol. 39 no. 12, 2014, pp. 8433-8451. (**ISI Journal**)

2. **V.R.Ravi** and T.Thyagarajan, Real Coded GA Tuned Practical Fuzzy Controller for Two Conical Tank Interacting System, *The Mediterranean Journal of Measurement and Control*, Vol. 8, no. 2, 2012, pp. 397-407. (**Scopus Indexed journal**)
3. **V.R.Ravi** and T.Thyagarajan, Modelling and Controlling of Two Conical Tank Interacting Level System using Regime based Multi Model Adaptive Concept, *International Review on Modelling and Simulation*, Vol. 6 no. 2, 2013, pp. 639-648. (**Scopus Indexed journal**)
4. **V.R.Ravi** , T.Thyagarajan and U.Darsana, Nonlinear Interacting System with Neuro-PID Controller, *Journal of Applied Mechanics and Materials*, Vol. 573, 2014, pp. 273-278. (**Scopus Indexed journal**)
5. **V.R.Ravi** e.tal, Sliding Mode Controller for Two Conical Tank Interacting Level System, *Journal of Applied Mechanics and Materials*, Vol. 573, 2014, pp. 229-234. (**Scopus Indexed journal**)
6. **V.R.Ravi** e.tal, A Real Time Quality Monitoring System for Engineering Industry: A Practical and Rapid Approach using Embedded Vision System with LabVIEW, *Journal of Applied Mechanics and Materials* , Vol. 592-594, 2014, pp. 639-648. (**Scopus Indexed journal**)
7. **V.R.Ravi** e.tal, Developing DC Motor Device Driver Block for Arduino using Simulink, *International Journal of Applied Engineering Research*, Vol. 10, No.22, 2015, pp. 20524-20531. (**Scopus Indexed journal**)
8. Mr.S.N.Sivaraj, N.Bharathi, **V.R.Ravi** and Mr.B.Karthikeyan, Implementation of real time climatic control inside a chamber by controlling temperature and relative humidity using output averaging method, *International Journal of Applied Engineering Research*, Vol. 10, No.55, 2015, pp. 903-906. (**Scopus Indexed journal**)
9. **V.R.Ravi** and A.Aathiya, Speed control of Solar Powered Separately Excited DC Motor, *International Journal of Control theory and Applications*, Vol.10, No. 16, 2017, pp. 357-367. (**Scopus Indexed journal**)
10. V.R.Ravi et al., Remaining serviceable life indicator of bearing, *Journal of Materials Today : Proceeding, Elsevier*, in press, 2020 (**Scopus Indexed journal**)
11. V.R.Ravi et al., Smart Bin for Garbage Monitoring in Smart Cities Using IoT System, *IOP conference series : Material Science and Engineering*, Vol. 1055, Feb 2021, (**Scopus Indexed journal**). doi:10.1088/1757-899X/1055/1/012078
12. **V.R.Ravi** and T.Thyagarajan, Adaptive Mixed Fuzzy Controller for Two Conical Tank Interacting Level System (**Ready for Communication to ISI Journal**)

International conference (Published – 18)

1. **V.R.Ravi** and R.Subramaiaam, Computerised Test Rig For Submersible and Monobloc Pumps, *in proceedings of International Conference on Trends in Industrial Measurements and Automation (TIMA 99)*, MIT, Chennai, 1999, pp. 153-162.
2. A.Balaji Ganesh, A.Lakshmi Sangeetha and **V.R.Ravi**, Network Model Based Automation of Thermal Processes using an Embedded Digital Control, *in proceedings of IEEE International Conference on Emerging Trends in Electronics and Photonic devices and Systems (ELECTRO 2009)*, Varanasi, 22-24 December, 2009, pp. 166-169. (ISBN: 978-1-4244-4846-3 (archived in IEEE Xplore Digital Library) (Scopus)
3. **V.R.Ravi** and T.Thyagarajan, Fuzzy Logic Controller for Interacting Non Linear System, *in proceedings of International Conference on System Dynamics and Control Engineering (ICSDC 2010)*, MIT, Manipal, 19-22 Aug 2010, pp. 645-650. (ISBN : 978-93-80578-58-3)
4. **V.R.Ravi** and T.Thyagarajan, Investigation on Controller Design for Interacting Non Linear Systems, *in proceedings of First International Conference on Modelling, Control, Automation and Communication (ICMCAC 2010)*, Velammal Engineering College, Chennai, 20-21 Dec 2010, pp. 77-82. (ISBN : 978-93-80697-35-2)
5. **V.R.Ravi** and T.Thyagarajan, A Decentralised PID Controller for Interacting Non linear Systems, *in proceedings of IEEE 2011 International Conference on Emerging trends in Electrical and Computer Technology (ICETECT 2011)*, Nagercoil, 23-24 March 2011, pp. 297-302. (IEEE catalog no : CFP1155K-CDR, ISBN : 978-1-4244-7925-2 (archived in IEEE Xplore Digital Library) (Scopus)
6. **V.R.Ravi** and T.Thyagarajan, Application of Adaptive Control technique for Interacting Nonlinear Systems, *in proceedings of IEEE 2011 3rd International conference on Electronics Computer Technology (ICECT 2011)*, Kanyakumari, 8-10 April 2011, pp. 386-392. (IEEE catalog no : CFP1195F-PRT, ISBN : 978-1-4244-8677-9 (archived in IEEE Xplore Digital Library) (Scopus)
7. **V.R.Ravi** and Vinoth Kumar, Fuzzy Logic Controller for Magnetic Levitation System, *in proceedings of International Conference on Mathematics and Computer Science (ICMCS 2011)*, Loyola College, Chennai, 7-8 Jan 2011, pp. 285-290. (ISBN:978-81-920490-0-7)
8. **V.R.Ravi** and T.Thyagarajan, A Multiple Model Adaptive Control Strategy for Model Predictive controller for Interacting Non Linear Systems, *in proceedings of IEEE 2011*

International conference on Process Control Automation and Computing (PACC 2011) , CIT, Coimbatore, 20-22 July 2011, pp. 1-8. (IEEE catalog no : CFP1166N-PRT, ISBN : 978-1-61284-762-7 (archived in IEEE Xplore Digital Library) (Scopus)

9. **V.R.Ravi** and T.Thyagarajan, Application of Hybrid Modelling Techniques To A Non Linear Hybrid System, *in proceedings of IEEE 2011 International conference on Process Control Automation and Computing (PACC 2011) , CIT, Coimbatore, 20-22 July 2011, pp. 1-7. (IEEE catalog no : CFP1166N-PRT, ISBN : 978-1-61284-762-7 (archived in IEEE Xplore Digital Library) (Scopus)*
10. **V.R.Ravi**, T.Thyagarajan and G.Uma maheshwaran, Dynamic Matrix Control of a Two Conical Tank Interacting Level System, *in proceedings of International Conference on Modelling , Optimization and Computing (ICMOC-2012), Noor Islam University, Nagercoil, 10-11 April 2012, Vol. 38, 2012, pp. 2601 – 2610. (archived in Procedia Engineering Digital Library, Elsevier) (Scopus)*
11. **V.R.Ravi**, T.Thyagarajan and B.Puviyarasi, Gain Scheduling Adaptive Fuzzy Logic Controller for Two Conical Tank Interacting Level System, *in proceedings of Fourth International Conference on Science , Engineering & Technology (SET-2012), VIT, Vellore, 3-4 May 2012.*
12. **V.R.Ravi**, T.Thyagarajan and S.Y. Priyadharshni, Gain Scheduling Adaptive Model Predictive Controller for Two Conical Tank Interacting Level System, *in proceedings of IEEE International Conference on Computing, Communication and Networking technology (ICCCNT-2012), Ramakrishna Engineering College, Coimbatore, July 26-28 2012, pp. 1-7. (IEEE Catalog Number: CFP1252J-PRT, ISBN : 978-1-4673-5693-0 (archived in IEEE Xplore Digital Library) (Scopus)*
13. **V.R.Ravi**, T.Thyagarajan and B.Puviyarasi, Centralised Neuro Controller for Two Conical Tank Interacting Level System, *in proceedings of 2012 IEEE International Conference on Advanced Communication Control and Computing Technologies – (ICACCCT 2012), Syed Ammal Engineering College, Ramanathapuram, 23-25 August 2012, pp. 343-347. (ISBN : 978-1-4673-2047-4 (archived in IEEE Xplore Digital Library) (Scopus)*
14. **V.R.Ravi** and T.Thyagarajan, Application of Hybrid Modelling and Control Technique to a Nonlinear Hybrid System, *in proceedings of IEEE International Conference on Green Computing, Communication and Conservation of Energy (ICGCE), RMD Engineering College, Chennai, December 12-14th , 2013, pp. 662 – 667. (ISBN : 978-1-4673-6126-2 (archived in IEEE Xplore Digital Library) (Scopus)*
15. M.Venkatesan and **V.R.Ravi**, Sliding Mode Observer based Sliding Mode Controller for Interacting Nonlinear System, *in proceedings of IEEE 2nd International*

Conference on Current Trends in Engineering and Technology (ICCTET), Akshaya College of Engineering & Technology, Coimbatore, July 8th 2014, pp. 1-6. **(archived in IEEE Xplore Digital Library) (Scopus)**

16. S.Divya, **V.R.Ravi** and Hema Latha, Embedded FPGA based Robotic arm controller for Material handling, *in proceedings of IEEE 2nd International Conference on Current Trends in Engineering and Technology (ICCTET)*, Akshaya College of Engineering & Technology, Coimbatore, July 8th 2014, pp. 167-173. **(archived in IEEE Xplore Digital Library) (Scopus)**
17. R.Bharathkumar, **V.R.Ravi**, T.Yoga Priya, Autonomous Vehicle Navigation System from Video Streaming, *in Proceedings of International Conference on Developments in Science, Management and Engineering (ICDSME 2016)* on 15 & 16, April,2016 at Trichy, India, Organized by International Organization of Scientific Research and Development (IOSRD), India, pp. 63-67.
18. T.Yoga Priya, **V.R.Ravi**, R.Bharathkumar, Unknown Road Detection from Video Streaming for Vehicle Navigation, *in Proceedings of International Conference on Developments in Science, Management and Engineering (ICDSME 2016)* on 15 & 16, April,2016 at Trichy, India, Organized by International Organization of Scientific Research and Development (IOSRD), India, pp. 267-272.
19. Dr. S. Hemajothi, **Dr. V. R. Ravi**, Transformative Advances in cervical cancer Diagnosis leveraging colposcopy imaging with ViT., *in Proceedings of International Conference on Recent Advances in Electrical, Electronics, Ubiquitous communication & computational intelligence*, **(Accepted to publish in IEEE Xplore Digital Library) (Scopus)**
20. **Dr. V. R. Ravi**, T. R. Dinesh Kumar, AI- based smart intrusion detector, *in Proceedings of International conference on circuit power and computing technologies 2024., kollam, Kerala*, **(Accepted to publish in IEEE Xplore Digital Library) (Scopus)**
21. R.Breasha, **Dr. V. R. Ravi**, Segmentation and classification of brain tumor using CNN algorithm, *in Proceedings of International Conference on circuit power and computing technologies 2024., kollam, Kerala*, **(Accepted to publish in IEEE Xplore Digital Library) (Scopus)**
22. **Dr. V. R. Ravi**, Ramaprabha, RIS and UAV aided spatial modulation for 6G Telecommunication system, *in Proceedings of International conference on circuit power and computing technologies 2024., kollam, Kerala*, **(Accepted to publish in IEEE Xplore Digital Library) (Scopus)**

23. Dr. V.R. Ravi, S. Mithun Varshan, G. Bhavani, M. Veeramukeshwaran, P. Sudhakar, M. Parthiban, in *Proceedings of International conference on circuit power and computing technologies 2024., kollam, Kerala, (Accepted to publish in IEEE Xplore Digital Library) (Scopus)*

National conference (Published – 12)

1. **V.R. Ravi** and T. Thyagarajan, Universal Process Plant Monitoring System, in *proceedings of The Twenty second National Systems conference*, Regional Engineering College, Calicut, 1998, pp. 245 – 250.
2. T. Thyagarajan and **V.R. Ravi**, Real Time Speed Control of DC Motor Using Fuzzy Logic, *National Symposium on Intelligent Measurement and Control (NSIMC – 2000)* MIT, Chennai, 2000, pp. 52 – 60.
3. **V.R. Ravi** e. tal, Gain Scheduling PID Controller for Interacting Non Linear Systems, *National Conference on Control, Communication and Information Technology (NCCCIT 2010)*, Easwari Engineering College, Chennai, 8-10 Dec 2010, pp. 49 – 53.
4. **V.R. Ravi** and S.Y. Priyadharshni, A Linear Model Predictive controller for Two Conical Tank Interacting Level System, *National Conference on Trends in Instrumentation & Automation (NCTIA-2012)*, Velammal Engineering College, Chennai, 12th April 2012.
5. **V.R. Ravi** and S. Vignesh, Design of Non Linear PI Controller Using Takagi-Sugeno Fuzzy Inference System, *National Conference on Modelling, Control and Optimization of Processes*, B.S. Abdur Rahman University, Chennai, 2nd April, 2013, pp. 40 – 43.
6. **V.R. Ravi** and S.Y. Priyadharshni, Design of Non Linear MPC Using Takagi-Sugeno Fuzzy Inference System, *Third National Conference on Control, Communication and Information Technology (NCCCIT-2013)*, Easwari Engineering College, Chennai, 6th May 2013, pp. 16 – 19.
7. **V.R. Ravi** and M. Monica, Design of Fuzzy Non Linear Kalman Filter for a Nonlinear System, *Third National Conference on Control, Communication and Information Technology (NCCCIT-2013)*, Easwari Engineering College, Chennai, 6th May 2013, pp. 6 – 11.
8. **V.R. Ravi** e. tal, Conventional Sliding Mode Controller for TCTILS, *National Conference on Trends in Instrumentation and Automation (NCTIA-2014)*, Velammal Engineering College, Chennai, 4th April, 2014.

9. M.Venkatesan and **V.R.Ravi**, Conventional Sliding Mode Controller for TCTILS, *National Conference on Trends in Instrumentation and Automation (NCTIA-2014)*, Velammal Engineering College, Chennai, 4th April, 2014.
13. R.Bharathkumar, **V.R.Ravi**, T.Yoga Priya, Autonomous Vehicle Navigation System from Video Streaming, National Conference on Modern Electronics & Signal Processing (NCMESP '16), Velammal Engineering College, Chennai, Feb 2016, pp. 127-130.
14. T.Yoga Priya, **V.R.Ravi**, R.Bharathkumar, Unknown Road Detection from Video Streaming for Vehicle Navigation Using LabVIEW, National Conference on Modern Electronics & Signal Processing (NCMESP '16), Velammal Engineering College, Chennai, Feb 2016, pp. 131-136

Total Publications

International Journals	= 12
International Conferences	= 23
National Conferences	= <u>12.</u>
	<u>47.</u>

Innovative Projects Developed

S.No	Innovative Project Title	Funded by	Position	Fund Received	Duration	Status
1	Autonomous Wheelchair	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2017 - 2018	Completed
2	Efficient Arecanut Tree Climbing Machine	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2017 - 2018	Completed
3	Emotional Intelligence Adapting AI Techniques	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2018 - 2019	Completed
4	Smart Wrist Control for Home Automation	DST - IEDC innovative Project	Faculty Mentor	2.5 Lakhs	2018 - 2019	Completed

5	Effective Delivery System Using Quad-Rotor Fixed-Wing Hybrid UAV For Remote Healthcare	Innovation Voucher Programme Entrepreneurship Development & Innovation Institute innovative Project	Investigator	2.0 Lakhs		Under preparation
6	IoT Enabled Multi Sensor Monitoring System	Innovation Voucher Programme Entrepreneurship Development & Innovation Institute innovative Project	Investigator	2.0 Lakhs		Under preparation

Text Book Published

S.No	Title of the Text Book	Authors	Publisher	Year of Publish
1	Computer Control of Process ISBN No: 9789382010517	Dr.V.R.RAVI Dr.Z.BRIJET	Sai Publisher, Chennai	2017

Undergraduate Projects Guided

1. 8085 Microprocessor Based Single Loop Process Controller
2. 8031 Microcontroller Based 8 Loop Process Controller
3. Universal Textile Counter and Controller using 8031 Microcontroller
4. PC based Data Acquisition System
5. 8031 Microcontroller based Universal Process Indicator
6. Intelligent Control of Air Heat Plant Using Fuzzy Controller

7. Speed Control of DC Motor using Fuzzy Logic control
8. PC Based Burner Management System
9. 8951 Microcontroller based PH Measurement
10. Design and Implementation of Hybrid Supervisory Control using Automation Petri Net (2009)
11. Design and Real Time Implementation of Neuro and Fuzzy Controllers for Two Tank Conical Interacting System (2010).
12. Design and Real Time Implementation of De-Centralised PID Controller, Optimal Controller and Model Predictive Controller for Two Tank Conical Interacting System (2010).
13. Design and Implementation of Adaptive Control Schemes for Two Tank Conical Interacting System (2010).
14. Design and Real Time Implementation of Model Predictive Controllers for Non-Linear Interacting Systems (2011)
15. All-Terrain Unmanned Reconnaissance Automation (Aura) (2011)
16. Design and Implementation of De-Centralised PID and Intelligent Controllers for Interacting Non-Linear Systems (2011).
17. Design and Development of Type-2 Fuzzy Logic Controller for Two Input Two Output Process (2012)
18. Design and Real Time Implementation of Nonlinear PID Controller for TCTILS (2012)
19. Machine Vision System for Quality Inspection in Production Line Station using LabVIEW (2014)
20. Multi Model Adaptive Sliding Mode Controller for Two Conical Tank Interacting Level System (2014)
21. Implementation of Internet of Things (IoT) in Air Heat Plant (2015)
22. Embedded FPGA controller based Medically Assisted Wheel Chair for Elderly People (2015)
23. Gesture control of Robotic Arm using Kinect sensor (2016)
24. Implementation of PLC using LabVIEW and NI Hardware (2017)

25. Smart Wheel Chair (2017)
26. Design & Development of Efficient Arecanut Tree Climbing Machine (2018)
27. Design of AI Assisted Emotional Intelligence System (2018)
28. Smart Wrist Watch Control of Home Automation (2019)
29. AI Based Predictive Maintenance of a Rotating Element Bearing (2020)
30. Smart Bin for Garbage Monitoring in Smart Cities Using IoT System (2020)

Post graduate Projects Guided

1. Design and Implementation of Adaptive Model Predictive Controller for Interacting Non-Linear Systems (2011).
2. Design and Implementation of De-Centralised Fuzzy Logic Controller and Neuro Controller for Interacting Non-Linear Systems (2011).
3. State Feedback Controller Design for Nonlinear System using Fuzzy Kalman Filter (2012).
4. Design and Implementation of Adaptive Traditional Fuzzy Controller and Adaptive Mixed Fuzzy Controller for Interacting Non-Linear Systems (2012).
5. Design and Implementation of Adaptive Dynamic Matrix Controller for Two Conical Tank Interacting Level System (2012).
6. Design of Nonlinear PI Controller using Takagi-Sugeno Fuzzy Inference System (2012).
7. Design of Nonlinear Model Predictive Controller using Multiple Linear Models (2012).
8. Design and Implementation of Adaptive Model Predictive Controller for Interacting Non-Linear Systems (2012).
9. Design of Non-Linear MPC Controller using Takagi-Sugeno Fuzzy Inference System (2013).
10. Design of Nonlinear State Estimation Scheme and Sliding Mode Controller Techniques for Two Conical Tank Interacting Level System (2013).
11. Design of Nonlinear Interacting System with Neuro PID Controller (2013)
12. Design of State Estimation Scheme with Conventional Observer for Two Conical Tank Interacting Level System (2013).

13. Sensors State Monitoring and Recording in Wireless Sensor Networking using LabVIEW (2014)
14. Sliding Mode Observer based Sliding Mode Controller for Nonlinear Interacting System (2014)
15. Autonomous Vehicle Navigation System from Video Streaming using MATLAB (2015)
16. Unknown Road Detection from Video Streaming for Vehicle Navigation using LabVIEW (2015)

Department Developments

1. Establishment of **Centre of Excellence**

1. **Centre of Excellence in Virtual Instrumentation**

Supported by Institution - Rs 40 Lakhs

Established in 2010

2. **Centre of Excellence in Industrial Automation & IIoT**

Supported by AICTE – Rs 11.94 Lakhs

Established in 2020

3. **Centre of Excellence in Artificial Intelligence & IoT**

Supported by AICTE – Rs 7.41 Lakhs

2. **Laboratory Equipment Developed**

- Design and Development of Mobile Level Process Control Workstation
- Design and Development of Mobile Temperature Process Control Workstation
- Design and Fabrication of calibration Kit for I/P Converter using HART Communicator
- Design and Development of Speed Control of DC MOTOR using
 - PID Controller
 - FUZZY Logic Controller
- Design and Development of Two Conical Tank Interacting Level System with regime based advance controllers

3. Software packages developed

- PROSOFT - Software package developed for Process control Applications using C Language
- MATRCGA - MATLAB programme for Real Coded Genetic Algorithm
- MATDMC – MATLAB programme for Multivariable Dynamic matrix Controller

4. Laboratories Developed

- Microprocessor Lab
- Advanced Microprocessor Lab
- Process Control Lab
- Control Lab
- Virtual Instrumentation Lab
- Digital Control and Instrumentation Lab (for PG degree)

5. Laboratory Manuals Prepared

- Microprocessor Lab
- Process Control Lab
- Control Lab
- Digital Control and Instrumentation Lab (for PG degree)

Workshop / Seminar / FDP / STTP / Conference organised

S.No	Name of the workshop / conference	Position held	Funding agency & amount received	Year
1	DRDO sponsored one day National Workshop on Recent Trends in Sensor Technology	Convener	DRDO Rs 0.3 Lakh	July 2009
2	First International Conference on Modelling, Control, Automation and Communication (ICMCAC 2010)	Organising Secretary	NI : Rs 2 Lakhs TCS : Rs 1 Lakhs CSTR : Rs 0.5 Lakhs AICTE : Rs 0.5 Lakhs IEEE : Rs 0.2 Lakhs	December 2010

3	AICTE sponsored Three-day National Workshop on Design and Implementation of Advance Controllers for Non-Linear System using LabVIEW	Convener	AICTE Rs 1 Lakh	June 2011
4	Two Days Pre-Conference Workshop on Autopilot Programming using Arduino with MATLAB	Convener	Self-support	March 2015
5	Anna University Sponsored FDP on applied Soft Computing	Convener	Self-support	12.06.17 to 18.06.17
6	BRNS Sponsored Two Day National Workshop on Internet of Things (IoT) for Industrial Applications	Organising Secretary	BRNS Rs 0.80 Lakh	19 – 20 th January 2018
7	ICMR Sponsored Two Day National Seminar on Deep Learning in Bioinformatics and Healthcare informatics	Organising Secretary	ICMR Rs 0.40 Lakh	June 13-14 2018
8	Anna University Supported Two-week FDP on Control System	Convener	Self-support	26.11.18 to 08.12.18
9	Two Day workshop on Skill Approach to Industrial Circuits	Coordinator	Self-support	11.01.19 to 12.01.19
10	Five Day National Workshop on LabVIEW CORE- I & II - "HANDS ON APPROACH"	Coordinator	Self-support	17.06.19 to 21.06.19
11	Short Term Training Programme on "High Intensive Course on Machine Learning with MATLAB"	Coordinator	AICTE 2.04 Lakhs	Dec 2020

Training Courses organised

S.No	Name of the training course	No of students trained	Position held	Year
1	LabVIEW Core I LabVIEW Core II	36	Course Instructor & Organiser	2011
2	LabVIEW Core I LabVIEW Core II	38	Course Instructor & Organiser	2012
3	LabVIEW Core I LabVIEW Core II	36	Course Instructor & Organiser	2013
4	LabVIEW Core I LabVIEW Core II	38	Course Instructor & Organiser	2014
5	LabVIEW Core I LabVIEW Core II	36	Course Instructor & Organiser	2014
6	LabVIEW Core I LabVIEW Core II	36	Course Instructor & Organiser	2015
7	Hands on experience in Arduino	40	Course Instructor & Organiser	April 2014
8	Hands on experience in Arduino	40	Course Instructor & Organiser	July 2014
9	Hands on experience in Arduino	40	Course Instructor & Organiser	March 2015
10	Hands on experience in Arduino	40	Course Instructor & Organiser	March 2016
11	Real Time Projects with Arduino	53	Course Instructor & Organiser	Feb 2018
12	Raspberry Pi – Hands on Approach	52	Course Instructor & Organiser	July 2019
13	Build your own IoT device using Raspberry PI	52	Course Instructor & Organiser	Aug 2019
14	Hands on Training on ESP 8266 : Cloud Monitoring, Web services and Mobile APP	110	Course Instructor & Organiser	Feb 2020
15	Practical Training Course on Machine Learning using MATLAB	98	Course Instructor & Organiser	Feb 2020

16	Hands on experience in Arduino	108	Course Instructor & Organiser	Mar 2020
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Chairmanships at National/International conference

S.No	Title of Academic Session	Title of Conference	Organised by
1	"Control System" Technical session	National Conference on Control, Communication and Information Technology	Easwari Engineering College, Chennai 18.04.11
2	"Instrumentation" Technical Session	International Conference on Communication, Computing and Power Technologies (ICCCPT 2015)	Dept. of EEE Velammal engineering College, Chennai 22.0415

Invited as Chief Guest

S.No	Title of the Event	Topic	Organised by
1	Workshop on Introduction to MATLAB for Control System Application	Inaugural Address	Dept. of EIE SRI SAI RAM Engineering College, Chennai, 20.02.16
2	One-week FDP on Process Modelling and Control	Inaugural Address	Dept. of EIE SRI SAI RAM Engineering College, Chennai, 11.06.19

Invited Lecture at seminar/FDP/Workshop

S.No	Title of the FDP / workshop	Invited Lecture Topic	Organised by
1	Faculty Development Program on Advanced Control system	Multi variable System, RGA Analysis, Decoupling and Decentralised PID Control Design	Dept. of EEE Anna University CEG Campus, Chennai

			10.06.09
2	DRDO Sponsored Two Day National Workshop on MATLAB and LabVIEW for Electrical and Process Control Application	Control Design and Simulation Using LabVIEW	Dept. of EEE, Easwari Engineering College, Chennai 18.12.09
3	Two Day National Workshop on System Identification and Control Design	Design and Real Time Implementation of Advanced Controllers for Non-Linear interacting systems using LabVIEW	Dept. of Instru. and Control Systems Engineering PSG College of Technology Coimbatore 23.04.10
4	Faculty Development Program on Control System	Time Response Analysis, PID Controller	Dept of EIE, Velammal Engineering College, Chennai 01.12.09 to 04.12.09
5	Workshop on MATLAB and LabVIEW for electrical & Process Control Applications	Control Toolbox in LabVIEW, Level Control using LabVIEW	Dept. of EIE, Easwari Engineering College, Chennai 18.12.09
6	Faculty Development Program on Soft Computing	Non-Linear MIMO Controllers - Fuzzy & Neuro Controllers	Dept of Electrical Engineering, Anna University, Chennai 12.06.10
7	Faculty Development Program on LabVIEW and its applications in Engineering	Control System Design using LabVIEW	BMS College of Engineering, Bangalore 14.07.11
8	Faculty Development Programme on Applied Soft Computing	Nonlinear MIMO Controllers – Fuzzy & Neuro Controllers	Dept. of EEE Anna University CEG Campus, Chennai 26.11.10 (AN)

9	Faculty Development Programme on Applied Soft Computing	Design of Fuzzy & Neuro Controller using MATLAB	Dept. of EEE Anna University CEG Campus, Chennai 26.11.10 (FN)
10	CSIR Sponsored National Workshop on Intelligent Modelling and Control using MATLAB and LabVIEW	Control Design using LabVIEW	Dept. of EIE, Easwari Engineering College, Chennai 27.08.11
11	National Level Seminar cum Workshop on Intelligent Controllers for Power Converters in Renewable Energy Systems	PID and Fuzzy Controller design for DC to DC Converter	Dept. of EEE Jeppiaar Engineering College 05.10.13
12	Two Days National Workshop on MATLAB & LabVIEW for Engineering Applications in Association with ISOI and ISTE	PI Controller design Fuzzy Controller design GSA PI Controller design using MATLAB & LabVIEW	Dept. of EIE SRI SAI RAM Engineering College Chennai 17-18 Jan 2014
13	ISTE approved short term programme on HANDS ON EXPERIENCE IN MATLAB	Real time Interface with MATLAB	Dept. of EIE Annamalai University 04.12.2014
14	One day National Workshop on Neural Networks & Fuzzy Applications in Engineering	Hands on Session in Neural Network & Fuzzy Applications	Saveetha School of Engineering Saveetha University 06.02.15
15	National Seminar on recent Trends in Controller Design and system Identification	Fuzzy Logic Controller	Saveetha Engineering College, Chennai 20.02.15
16	National Workshop on Artificial Intelligence and its Applications	Application of AI technique in Control Application	Dept. of EIE Annamalai University 17.09.16
17	ISRO sponsored Two Day National Seminar on Contemporary Research Avenues	Design of Fuzzy controller & Neuro Controller	SAAD Francis Xavier Engineering College

	and Challenges in Intelligent Control System using LabVIEW		08.10.16
18	National Level Workshop on LabVIEW Applications in Electrical Engineering	Hands on session in LabVIEW based Modelling and Design of PID & Fuzzy Logic Controller in Electrical Applications	Prathyusha Engineering College Dept. of EEE 12.11.16
19	DST sponsored FDP on Control Strategy Prediction between Conventional and Intelligent Controllers	Neural Network Case study	Saveetha Engineering College, Chennai Dept. of EIE 23.04.18
20	Seven Day Anna University sponsored FDP on Linear Integrated Circuits	Fixed & variable Power Supply design & SMPS	KCG College of Engineering Chennai
21	EE-6502 Microprocessors and Microcontrollers	Study on need, Architecture, Configuration and Interfacing with ICs 8255 & 8259	Sri Venkateshwara College of Engineering Chennai 12.06.18
22	One-week FDP on Process Modelling and Control	Recent Trends in Process Modelling and Control	Dept. of EIE SRI SAI RAM Engineering College Chennai 11.06.19

Guest Lecture delivered

1	Systematic Design of PID Controller	Dept. of EIE, Easwari Engineering College, Chennai, (11.02.10)
2	System Identification Toolbox using MATLAB	Dept. of EIE Easwari Engineering College, Chennai, (13.10.14)
3	Control System Design using LabVIEW	Dept. of EIE Easwari Engineering College, Chennai, (02.02.15)

Industrial Training Attended

S.No	Name of the Industry	Details of Study	Period
1	South India Viscose Coimbatore	To study about Paper instrumentation and DCS Applications	15.07.92 to 21.07.92
2	SPIC Tuticorin	To study about Process instrumentation and Calibration of Transmitters	06.10.97 to 11.10.97
3	Institute for Design of Electrical Measuring Instruments Mumbai	Control Valves and Application	22.01.98 to 23.01.98
4	Indo – US Collaboration for Engineering Education (IUCEE) Infosys Mysore	Advanced Graphical System Design with LabVIEW II	06.07.09 to 10.07.09
5	National Instruments Bangalore	LabVIEW Real Time & FPGA	21.06.10 to 25.06.10
6	National Instruments Bangalore	LabVIEW Machine Vision and Image	01.07.10 to 02.07.10

Workshop / Seminar/Tutorial attended

S.No	Name of the workshop / Seminar/Tutorial attended	Organised by	Period
1	Workshop on RFID and its Application	TIFAC CORE Velammal Engineering College Chennai	27.07.07 – 28.07.07
2	Workshop on Virtual Instrumentation	Jaya Engineering College	31.08.07 – 01.09.07
3	Workshop on Wireless Embedded System and its Industrial Application	TIFAC CORE Velammal Engineering College Chennai	11.10.07 – 12.10.07
4	6 th National Conference on Virtual Instrumentation	National Instruments, Bangalore	26.10.07
5	Short term course on " Embedded system design	TIFAC CORE Velammal Engineering College	17.12.07 – 21.12.07

	and analysis of wireless embedded technology	Chennai	
6	Two Day Workshop on Research Methodologies	TIFAC CORE Velammal Engineering College Chennai	23.02.09 – 24.02.09
7	Tutorial on Advanced Automation	Control & Instrumentation Group, CDAC, Thiruvananthapuram and Dept. of Instrumentation Engineering, MIT Campus, Anna University, Chennai	18.12.09
8	2nd National Seminar on Automation Systems Technology	Control & Instrumentation Group, CDAC, Thiruvananthapuram and Dept. of Instrumentation Engineering, MIT Campus, Anna University, Chennai	19.12.09
9	National Workshop on VxWorks 6.6	TIFA CORE, Velammal Engineering college, Chennai	24.09.09 - 25.09.09
10	Workshop on System Identification and Control Design	PSG-NI Virtual Instrumentation Centre, PSG college-NI systems (India) Pvt. Ltd.	22.04.10- 23.04.10
11	3 Day Short term training programme on Advanced Process Control	Dept of Instrumentation Engineering, MIT, Chennai	22.12.10 - 24.12.10
12	Workshop on Trends in Process Control	Dept. Chemical Engineering, IIT Madras, Chennai	03.03.12
13	MATLAB & Simulink for Engineering Education	MathWorks India Bangalore	09.04.13
14	Seminar on Siemens Education Day	Siemens and Vi Microsystems Pvt.Ltd., Chennai	12.09.13
15	Big Data Analytics and Signal Processing using MATLAB	MathWorks India Bangalore	08.07.15
16	Deep Learning for Big Data Analytics	Sri Venkateshwara College of Engineering, Sriperumbudur	09.11.17 - 10.11.17
17	EDUMEET on Factory Automation	MITSUBISHI ELECTRIC & MIT - Anna University, Chennai	08.08.19

Online Courses Studied

S.No	Course Title	Organised by	Status
1	Python 101 for Data Science	edX	Completed. Certificate received
2	IBM: ML0101EN Machine Learning with Python: A Practical Introduction	edX	Completed

Association & Co-Curricular Activities

- Served as Technical **Co-ordinator** in State Level Science Exhibition “**SCIENCE FOR YOU’ 93** “ held in Coimbatore, 1993.
- Served as Paper Presentation session **Judge** in “**CYGNUS ‘ 97** “ held in Crescent Engineering College, 1997.
- Served as Project Presentation session **Judge** in “ **PRECISION + 98** “ held in Crescent Engineering College, 1998.
- Served as Project Presentation session **Judge** in “MEACON 11 “ held in Velammal Engineering College, 2011.
- Served as Project Presentation session **Judge** in “MEACON 13 “ held in Velammal Engineering College, 2013.
- Served as Project Presentation session **Judge** in “**MEACON 15** “ held in Velammal Engineering College, 2015.

Awards and Merits Received

- Received **National Merit Scholarship** from the ministry of Education and Social Welfare, Government of India, in recognition of the high position secured as a meritorious candidate from Madras in 1980-81.
- Undergraduate project titled “8085 Microprocessor based Maximum Demand Controller” in Electrical Engineering discipline has won the **First Prize in State level Best Project Award**. It was awarded by the Directorate of Technical Education, Tamilnadu in 1988.

- The VEC-NI Virtual Instrumentation Centre is awarded as the Best Graphical System Design Lab among 240 Virtual Instrumentation centers at various institutions throughout India in 2010 by NI Systems (India) Pvt. Ltd., Bangalore (The Indian Branch of National Instruments, USA). The award is based on the student activity/training and the research work carried out by the faculty

- National Instruments, India, awarded **Prof.V.R.Ravi** with certificate and gold medal and inducted as a Premier member of the “**India LabVIEW Developer league**” October 2010



DST – Texas Instruments presented award to Dr.V.R.RAVI in appreciation for fostering an ecosystem bridging Government, Industry and Academia in **India Innovation Challenge Design Contest 2018 (IICDC-2018)**

- **Selected for IICDC Quarter Final Round**
- **Received \$200 worth of Texas Instruments Hardware.**



MoU Signed

1. National Instruments, Bangalore
2. Yokogawa India Limited, Chennai
3. Prolific Systems and Technologies Pvt. Ltd., Chennai

Membership in Professional Societies

- Life Member of Indian Society for Technical Education (ISTE)
(Membership number : LM 12788)
- Life Member of System Society of India
- Member of International Society of Automation (ISA)
(Membership number : 000033744404)

Subjects Handled

Undergraduate Level	Process Control Logic Design and Control System Fuzzy logic control and Neural Network Applications of Edge Devices in AI Machine Learning and Applications Deep Learning Techniques IoT and Applications Reinforcement Learning
Postgraduate Level	Edge Computing Devices Industrial IoT(IIoT) Quantum Artificial Intelligence Autonomous Systems & Drones

Experience in Accreditations

1. NBA Accreditation
2. NAAC Accreditation
3. Autonomous