May 11 2021

Some highlights from the resume of Prof. Subramaniam Ganesan

I am working at OU for the past 34 years. I have more than 40 years of work experience as Scientist (in National lab) and as faculty in Universities. I was the department chair of Computer Science and Engineering department, OU from 1991-1998. Currently I am a Professor in Electrical and Computer Engineering department at Oakland University, USA.

I am emphasizing preeminence in Research and Professional service and excellence in teaching.

Research Expertise: Embedded Systems, Autonomous vehicles and Robots, Artificial intelligence, Machine learning, IOT- Internet of Things, cloud based, and hardware based embedded system security and Big Data analytics.

Recent Awards

SAE 2020- **Forest R. Mcfarland award** for outstanding contributions to SAE technical events as keynote speaker, organizer, reviewer.
March 2021: Received from IEEE a Certificate and Plaque for Contribution to IEEE SEM Computer Chapter **as Chair for the past 25 years**, March 2021.

Received a patent (# 10746971) with others for IOT based Tracking for games on July 21, 2020.

February 3, 2018: Received from **IEEE-USA Professional Achievement Award**
March 21, 2018**:** Engineering Society of Detroit/IEEE SEM- **Gold Award**
December 30, 2017: **Received Certificate of Exceptionalism** and Chief Guest of the year award from ASDF
October 21, 2017 "**Exemplary service award**" certificate and Plaque from IEEE SEM.
October 2017: Received **Albert Nelson Maquis Life Time Achievement Award** by Marquis who's who.

April 28, 2016: Received funding from OU under Interdisciplinary center for "**Center for Data Science and Big Data Analysis**". I am one of the team members to collect data from Sensor Network, IOT and Connected Cars and analyze the data.
March 18, 2016: Received Certificate of Recognition for nomination to "**Teaching excellence award**", Oakland University's Teaching and Learning committee.
April 13, 2016: Received Certificate of excellence for **Graduate Student mentoring award** given by Graduate Council, Oakland University.

April 19, 2016: Received a Plaque and certificate of appreciation **for dedicated leadership and significant contribution** to IEEE SEM for more than 20 years.
April 9, 2016: Received a Certificate **for expert lecture** on "IOT-Internet of things" given at IEEE SEM computer chapter sponsored Workshop.
December 2015: Received "**Life time achievement award"** for contributions in the field of Concurrent engineering and engineering technology from ISPE.
December 2015: Received "**Exceptional achievement award and Leader of** Technology and innovation awrd" from ISPE.
December 2015: Received "**Best active Governing Council** award for the year 2015" from ASDF.

January 2015: **Hind Rattan (Jewel of India**) award from NRIW society-recognized by Govt India.
December 2014: **Best Professor of the year 2014**—ASDF and Bangkok
2014- May—Fellow ISPE- International Society of Productivity Enhancement
2014- May—**Best Service Award** ISPE.
2012 December received "**Life Time Achievement award**" for illustrious career in teaching, research, and administration and contribution to the fields of engineering, conferred by ISAM, USA.
2015 December, received "Leader of Technology and Innovation" award from ISAM

2012 April received **Loyd Withrow Distinguished Speaker a**ward from SAE – Society of Automotive engineers.
ASEE NCS **Outstanding Teacher award**, April 1999.
SECS OU- Naim Kheir **Best Teacher award**, October 1999.
Best Journal Paper award from ISAM journal 2014.
Best Paper award from IEEE EIT 2001.
Best Oral presentation award from SAE 2006, 2009, 2010, 2011.
Motorola **Design Award**-: Top ten HC12 design Competition-1998
1991-1993 Visited with UNDP, United Nations development program funding many research laboratories and industrial research laboratories in India and gave a series of expert lectures.

Distinguished speaker of IEEE Computer society for 6 years and visited many Universities in USA, Republic of Colombia, Canada, Ethopia, and India to give speeches. It is a honor to be recognized by IEEE CS as an expert/ DVP.

Research Scholarshiip

I have published more than 86 journals, 255 conference publications, 2 book chapters, and 9 books as author/editor. Have 4 patents in the last 5 years and reeived new patent approved in 2019.

Key note speaker for many conferences in 2009-2021. Gave Keynote speeches at South Korea, India, Spain, and IEEE EIT Conferences.

I received equipment/ software site licences/Hardware boards etc for research and teaching from TI, FreeScale, Xilinx, Altera, ETAS, Chrysler, and General Motors totaling nearly **$278,000** in the last 10 years. I received research grants as a PI for nearly $**98134**, and as a team member directly/indirectly from NSF/NIH/ Defense/ industry totaling nearly **$ 3,101,895** in the last 10 years.

Teaching

Providing leadership role for MS in Embedded System program at OU for the past 14 years. I initiated and created this MS program when I was the CSE department chair.
I teach for the past five years, one on-line course per semester. I introduced audio/video/power-point based lectures in my on-line courses. I have published teaching related papers at ASEE conferences. I introduced new graduate courses, as an example, Validation and Verification of Embedded System course. I have offered for many years graduate off-campus OU courses at Ford, General Motors, General Dynamics, and TACOM.
I have given one-day workshops on Computer Engineering topics at IEEE EIT 2012, 2011 conferences, IEEE Metro Area workshop 2012, and at many colleges in India during 2010-2019.

I graduated as a main advisor 16 PhDs at OU and WMU in Computer Engineering topics. I guided many MS thesis at OU. I am currently guiding 8 Ph.D. students as a main advisor and they are at beginning to finishing stages.

I am an exteranl PhD/MS thesis evaluator for Universities at India, Australia, Jamaica, and Germany from 2005-present.

I serve as **Visiting Professor**, Vellore Engineering College and PA Engineering College, India and Indian Institute of Astrophysics, Bangalore, India. Work involves visits during summer and taking part in developing real time data/ image Compression system. I visited and gave lectures in July 2001, July 2002, 2003, 2004, 2005 and 2006, 2018 at these institutions.

I am an adjunct Professor at Vellore Institute of Technology from 2016 to present.

Member of International Advisory Board, Sri Eshwar college of Engineering, India, Visitor for Mother Teresa W University.

Member of Management board, RRASE college of Engineering, India

I was an expert and external examiner to ECE department, Ngee Ann Polytechnic at Singapore for 3 years 1992-1995.

Given webinars and live on-line international courses on “Computer Organization” through NSF supported Indo-US program (IUCEE.org) Winter 2012 – gave 12 lectures- under IUCEE virtual academy.

Worked at ARM company research group at Cambridge, UK. Worked on real time scheduling.
Attended ICCCS conference at Mauritius as conference general chair. Gave a keynote speech. Gave a two-day workshop in December at SGGI college, Nanded, India
Took part in ASDF conference at Pondicherry December 2015, 2016, 2018.

Recent Presentations/ Workshops

a. Subra Ganesan, "Introducing OpenSource Hardware in Computer Engineering courses" ASEE NCS conference, University of Toledo, March 19-20, 2021
b. Subra Ganesan, “IIOT and applications” Keynote at ICCTOWT conference, July 10, 2020.
c. Subra Ganesan, “Automotive embedded System security”, keynote at ICCITT, Saudi Arabia, September 9-10, 2020
d. Subra Ganesan, “RTOS in Embedded Systems”, IEEE Embedded Systems Workshop, October 24, 2020.

Service

I served in many Oakland University committees at the department, school, and senate and University level committees. I am the MS in Embedded System graduate program coordinator for 10 years.

I am the graduate department committee member and or chair for the past few years.

I serve in the SECS executive committee as chair 2015.

I serve in Senate Academic Computing Committee for 3 years. I was also the chair of this committee for 2 years previously.

I served in the Undergraduate Computer Engineering program curriculum review committee.

I served in the new computer engineering faculty recruitment committee.

I supervised undergraduate student projects as part of the NSF summer projects- IREECE for the past 5 years.

I created Computer Engineering student's association in 2013 to serve the undergraduate and graduate students with Computer Engineering interests.

I organized IEEE SPAC program of tutorials and workshop for undergrad students.

I served in the faculty promotion / tenure review committee of many SECS faculty.

Editor-in Chief, International Journal of Embedded system and Computer Engineering

Editor in chief, International Journal of Sensors and Applications, South Korea.

I, **Organized Annual Embedded System one-day worksho**p for the past 18 years at Oakland University as a sole organizer with sponsorship from SECS and IEEE South East Michigan section.

Organized as **co-general chair, IEEE R4 EIT** conference at Oakland University, April 2018 at Oakland University.
I am the **Chair, IEEE South East Michigan Computer Chapter from 1996-present-** 18 years, IEEE Computer Society MGAB executive board member from 2000- present, Technical committee member IEEE Region 4 for 10 years and member of IEEE CS Reconfigurable computing committee from 2008-present.

I organized Sensors and Applications conference at Korea, December 2013 as Main organizer.

I organized 2014 **ASEE NCS- north central conference at Oakland University**, on May 5-6, 2014. Nearly 160 faculty and students attended. This conference gave wide publicity to Oakland University.

I organized ICAM- International conference on Advanced and Agile Manufacturing on May 28-30, 2014 at Oakland University.

ASEE-American Society for Engg Educators-OU campus representative for 10 years. ASEE – NCS- executive member for many years

I organize at SAE world Congress- System Engineering session for the past 16 years. I have given keynote address at SAE world congress, Systems Engineering Session in 2011. I am a SAE- Real Time automotive software standard committee member. I am also organizer/chair/co-chair/reviewer for many international conferences held at Korea, USA, India, and other places.

I am the executive committee member of GL-SPIN Great lakes software process network association for the past 10 years. I gave a presentation at this group in February 2014 and May 2014.

I am one of Judges for the IGVC- Intelligent guided vehicle international competition and reviewed the presentations and reports from the competing 40 international teams, held in June every year.

I am a Member of Editorial board of Journal of Computer Science, **JCS,** ISSN 0973-292-6**, IJESC**- International journal of embedded system and Computer Engineering. Journal, Concurrent Engineering, **CE** SAGE publications, International Journal of Information Technology, **IJIT** Bharathi Vidyapeet Inst., ISSN 0973- 5658. International Journal of Agile Manufacturing**.(IJAM),** Karpagam Journal of Computer Science, **KJCS** Karpagam Univ., India. Key-Member of **MIR labs**- Machine intelligence research labs USA. I am a Member of STIO-Govt. Of India- for creating Tech corridor for automotive research-2010 I was a UNDP (United Nations) visiting expert to India 1992-1995. I gave research guidance, product review and lectures at Indian Industries, research centers and university- ECIL/CMC/DRD/NAL etc as a UNDP visitor.

I am Associate Director, Center for Robotics, Unmanned and Intelligent Systems, Oakland University. I serve as volunteer/evaluator/judge for the annual Robotics IGVC competition held at OU in summer for ten years.

Member of International Advisory Board, Sri Eshwar college of Engineering, India.

Member of Management board, RRASE college of Engineering, India

Webs:

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Google Scholar Profile:
https://scholar.google.co.in/citations?user=Z6p_H8QAAAAJ&hl=en

https://ssrn.com/author=4203171 _SSRN Profile

https://www.researchgate.net/scientific-contributions/2048993771_Subramaniam_Ganesan
Hindex == 17.; iIndex == 35. Citations as on July 2020 is 1485

Curriculum Vitae

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(248) 635 5890 Cell**.** **Fax:** 248 370 4633 **email:** ganesan@oakland.edu

Citizenship: USA

A. Education

Institution	Degree	
Madras University	B.E	Electrical Engineering
Indian Institute of Science	M.Tech	Electronics Engineering
Indian Institute of Science	Ph.D	Computer Engineering

B. Prior Professional Employment Record:

Institution Company	Position	From/To	Full or Part-time
National Aeronautical Laboratory, Bangalore India	Scientific Assistant	1968-69	Full time
Indian Institute Of Science, India.	Graduate Student	1969-71	Full time
National Aeronautical Laboratory, Bangalore India	Scientist C	1971-83	Full-time
RUHR University Bochum, Germany	DAAD Fellow	1979-80	Full-time
Concordia University Department of Computer Science, Montreal Canada	Research Associate	1983-84	Full-time

Concordia University Montreal, Canada	Visiting Researcher	1984 Summer	Full-time
Concordia University Montreal, Canada	Visiting Researcher	1985 Summer	Full-time
Western Michigan University, Kalamazoo Michigan, U.S.A.	Assistant Professor	1984-86	Full-time
Indian Institute of Science	Adjunct faculty	1981-83	Part-time
Oakland University Rochester, Michigan	Associate-Professor	1986- 91	Full-time
Oakland University	Professor and **Chair of CSE dept**	1991- 1998	
	Professor	1998- Present	

Associate Director, Product Development and Manufacturing Center, PDMC, Oakland University from 1999.

C. Consulting Experience:

Company	Dates	Subject
Electronics And Control Bangalore, India	1976-83	Digital Instrument design
Universal Computer Applications, Southfield	1988	Computer communications, MAP standards
Compression Lab, California	1988 Summer	Multi DSP Processor Design
Motorola Inc	1989	DSP Systems
Texas Instruments Inc	1991	DSP systems
HTC Inc	2003-2004	Embedded System
TACOM- Defense	Fall 2009 (on Sabbatical Leave)	
Chrysler (Daimler)	Summer Faculty Fellow 1997- 2008.	

E. Oakland Instruction Record (List of courses taught)

CSE 665 Parallel Processing
CSE 388/EE 378 Digital System Design
CSE/EE/470/570 Microprocessor System
CSE 508 Digital Logic System
EGR 595 Computer Aided Software Engineering
CSE 464/564 Computer Architecture
CSE 502 Comp. Organization, Assem Language and digital logic
EGR 595 DSP & Bit Slice Processors
EGR595 Multimicrocomputer Systems
CSE125 Introduction to Microcomputers
CSE238 C Language course
CSE547/447 Computer Networks
CSE 666 Real Time systems
CSE 671 DSP in Embedded Systems
EE 595 Automotive Electronics Analysis
CSE 251 web development
CSE 364 Computer Architecture.
ECE 573 System Validation and Verification

I. Ph.D. Committee Membership at Oakland University

Chair doctoral advisory committee for Mr. Ramesh (Completed in Aug 93)
(reconfigurable multiprocessor architecture)
Chair doctoral advisory committee for Mr. K.N. Rao
(completed in Fall 95. Genetic Algorithm for ASIC synthesis)
Chair doctoral advisory committee for Ms. Varsha Kamat
(Completed in Fall 97. IVHS- Vision based car following)
Chair doctoral advisory committee for Ms. Satwant Kaur
(Completed in Spring 2001, Mobile IP protocol)
Chair Doctoral Advisory committee for Forrest Wright
[Completed in Fall 2002, Human- Computer Interface]
Chair Doctoral Advisory committee, "Cluster Computing" for Alex George
[Completed in Fall 2006.]
Chair Doctoral Advisor Committee, "Capacitive Straingage MEMs"
[Completed in Winter 2007, Kala Majeti].
Chair Doctoral Advsory Committee, "Distributed Load Theory",
[Completed in Winter 2009- March 2009, Phares Noel]
Chair Doctoral Advisory Committee, "Systems Modeling"
[Completed in Fall 2009, Joe Lomonaco]
Chair DAC "CBM" Completed in Fall 2011, Ashok Prajapati
Chair DAC of Aqeel Aqeel "Retina image analysis"
Chair DAC of Roholla Khoski, "Number plate recognition"
Chair DAC of Sami Oweis, "Swarm robot control"
Chair DAC of Tri Doan, "Automotive CAN security"

Chair DAC of Hesham Odat, “Over the air update in realtime”
Chair DAC of Swathi Vadde, “Distributed Load Theory”

Doctoral advisory committee member currently for 6 students.

AWARDS (RECENT)

SAE 2020- **Forest R. Mcfarland award** for outstanding contributions to SAE technical events as keynote speaker, organizer, reviewer.
February 3, 2018: Received from **IEEE-USA Professional Achievement Award**
March 21, 2018**:** Engineering Society of Detroit/IEEE SEM- **Gold Award**
December 30, 2017: **Received Certificate of Exceptionalism** and Chief Guest of the year award from ASDF
October 21, 2017 "**Exemplary service award**" certificate and Plaque from IEEE SEM.
Best Oral Presentation Award – as keynote speaker at SAE world congress April 2011 for the talk “Systems Engineering advances and challenges”.
Best Oral Presentation Award- for the paper presented at SAE 2006, 2009, 2010, 2011 World Congress.
Best Paper Award- First Prize- IEEE Information Technology conference June 2001.
ASEE NCS **Out standing Teacher** Award, April 1999-
N. Kheir **Best Teacher Award**, Oakland University, October 1999
Motorola **Design Award**-: Top ten HC12 design Competition-1998
Certificates and Plaques for leadership, major contribution etc from a number of conferences like IEEE Region/Michigan, SAE, ASEE, organizations have been received.
Nominated for 2009 Oakland University Teaching Excellence award.
Loyd Withrow Distinguished Speaker Award, SAE, society of automotive engineers USA, April 2012.
Life time achievement award for teaching, research and contributions to engineering, ISAM, USA, December 2012.
Fellow of ISPE—2014
Best Service Award – 2014
Best Journal paper award—IJAM 2014 journal.

ANNOTATED BIBLIOGRAPHY

Published Articles

All publications are in **THREE** major areas.

A. REALTIME SYSTEM ARCHITECTURE.

Digital system design, architecture for real time control and high speed applications, novel Circuit design, theoretical analysis and multiprocessor systems for real time applications are the main thrust.

B. SIGNAL PROCESSING

System design, software development and high speed arithmetic algorithms for signal processing applications are the main thrust.

Digital signal processing using state of the art components, algorithms to compute correlation, filtering, recovery of signals from noise, clever partitioning of numerically intensive tasks to obtain high throughput, hough transform for road scene analysis, and wavelet transform applications are found in these papers.

C. GENERAL COMPUTER SCIENCE/ENGINEERING

Graph theory, Software, and Algorithms to generate error tolerant and secure codes for digital control, Genetic algorithm for VLSI layout, design in computer courses, and details on new course and laboratory organization are found in these papers.

PUBLICATIONS IN REFEREED JOURNALS

1. S.Ganesan, " Testing Unit for Memory Integrated Circuits" Electro Technology, India, March 1975, pp. 19 to 24.

Different test patterns, techniques and design of a digital system for testing RAM ICs are presented.

2. S.Ganesan "A Digital Signal Averager" Electro Technology June 1977, pp 21-28.

Theory of extraction of signals from random noise by cross correlation with unit impulse is explained. Digital techniques used, averaging modes available, circuit details and specification of the instrument are given.

3. S.Ganesan "Action of Interference in Control Radio Links" Electro Technology, June 1978, pp 21-30.

The expression for the calculation of average number of false code groups due to interference, the probability of suppression, and average number of false code groups are given. Codes which are secure against synchronous or repeater jamming are expalined.

4. S.Ganesan " A Real Time Digital Signal Analyzer, Correlator and Averager" Electro Technology, September 1978, pp 46-51.

Theory and design of a digital signal processor is expalined. A number of applications of this instrument are described. This system was used for wind tunnel signal measurement.

5. S. Ganesan and B.L. Subbaraya "A Simple Programmable Function Generator" Applied Idea, Electronic Engineering, London, Mid-September 1978.

A shift register based function generator with voltage or current output and easy programmability is presented. It is useful for many applications including analog simulation of aircraft wing shapes and analysis. My contribution is 50%.

6. S. Ganesan "Input Overload Protection Circuits for A/D Converter" Applied Idea, Electronic Engineering, London, August 1978.

A triac and zener diodes based circuit for protecting expensive A/D converters is presented. It was used in aircraft controller simulator applicaton.

7. S. Ganesan, "A Simple I/O Interface for the A/D Converters" Applied Idea, Electronic Engineering, London, May 1979.

Design of a simple input circuit and analog to digital converter circuit is described. It was used in a digital data acquisition system.

8. S.Ganesan, "Connect a Hexadecimal Keyboard to Micro-processor Input Port", Electronic Engineering, London, Mid May 1979.

Design of a Hex key board to a microprocessor port and the necessary software for identification was described. This was significant when the microprocessor system design was a mystery.

9. S. Ganesan "Fast 16 Bit Gray Code to Binary Code Converter", Electronic Engineering, London, April 1980.

A high speed code converter design was presented. This principle was later used for VLSI implementation.

10 S. Ganesan "Control the Slope Polarity of a Ramp Generator", Electronic Engineering, London, August 1980.

Ramp generator theory, design, and analysis was presented. Ramp function with positive, negative and varible slope could be generated. It was used for fast A/D converter testing.

11. S. Ganesan, Mrs. Girija and Mrs. Renuka, " A Real Time Digital Signal Analyzer - Correlator - Averager - Power Spectral Density Analyzer", IEEE Transactions of Industrial Electronics, 1982, pp 73-82.

Design and implementation of a digital signal analyzer capable of computing auto, cross correlation, and power spectral density functions, and digital techniques used are given. My contribution 50%.

12. S. Ganesan, D.Sundararajan, "Implementation of Digital Filter Using Microprocessor" Journal of Instrument Society of India, June 1982.

Theory, design implementation details and experiment results are given. My contribution is 50%.

13. S. Ganesan "Smoothing Processor's Analog Output", Software Notebook, Electronics, Sept 22, 1983 pp 170-172.

Software techniques to smooth the analog output by interpolation are explained.

14. D. Sundararajan, M.O.Ahmad and S.Ganesan, "Interface Links 8 Bit Chips to Provide Multiprocessing," Electronics, Oct 20, 1983, pp 140-141.

Design of an expandable shared memory bus arbitrator with priority is described. The circuit has a short arbitration delay. My contribution is 33%.

15. Sundararajan, M.O.Ahmad and S.Ganesan, "Multiprocessors", IEEE Trans on Circuits and Systems, June 1985, pp.620-622.

Design and analysis of hardware and software for a shared memory multiprocessor system is described.
My contribution is 33%.

16. K.Athappilly, C.Chacko, S.Ganesan," How to build a Tele-marketing Database",Computer Age Journal, Feature article, August 1987, pp 7-11.

The software, linked list data structure and hardware design for the creation of a telemarketing data base are presented. My contribution is 33%.

17. S.Ganesan,"A Multimicrocomputer Project for Undergraduate Laboratory ", ASEE Journal on Computer in Education, December 1987, Vol.VII, No.4, pp 13-18

Details for organizing a multimicrocomputer laboratory and project based course are presented.

18. S. Ganesan," Design in a Microcomputer Communication Course", ASEE Journal on Computer in Education Journal, April-June 1988, pp 38-41.

Advanced hardware network communiation ICs and software simulation tools and their use in a course are presented.

19. S.M.Mahmud, S.Ganesan, A.Rusek, and M.L.Hillis, " Programmable Self Adaptive Digital Frequency Multipliers ", IEEE Transactions on Instrumentation and Measurements, June 1988, pp 227-229.

This paper presents the design and implementation of a programmable self adaptive digital frequency multiplier which does not have missing pulse problem. The error associated with the multiplier is also discussed. My contribution is 25%.

20. S. Ganesan, " A Course on Multi-micro Computer Systems with Emphasis on Design " IEEE Transaction on Education, August 1988, pp 165-171.

Detalied description of the course, project, and laboratory support equipment are presented.

21. S.Ganesan, M.O.Ahmad, M.N.S.Swamy, " A Multiprocessor Based Digital Signal Averager", The International Journal of Microcomputer Applications, June 1988, v-7, No-2, pp 48-51.

Design of a tightly coupled multiprocessor system for real time computation of signal averaging is explained. Software details for high speed computation are given. My contribution is 50%.

22. S.Ganesan, J.W.Atwood, M.O.Ahmad, " A Microprocessor Based Multi-channel Strain and Temperature Measurement System", The International Journal of Microcomputer Applications, vol 8, no.3, 1988, pp 123-127.

Hardware and software design details of an instrument for measuring sixty channels of strain and temperature values are given. This is useful for structural dynamic test measurements both in the laboratory and field environment. My contribution is 50%.

23. S.M.Mahmud, A.Rusek, S.Ganesan, " A Microprocessor-based Dual Slope Phase Meter ", IEEE Transactions on Instrumentation and Measurements, September 1988, vol 37 No.3, pp 374-378.

Design, test results, error analysis and implementation of a dual slope phase meter are given. My contribution is 33%

24. S.Ganesan, "Designing Signal Processors with DSP and Bit-slice Microprocessors", ASEE Journal on Computer in Education, pp 57-61, July 1989.

Advances in DSP and Bit slice microprocessors and system design, and course outline are presented.

25. R.P.Sharma and S.Ganesan," Microprocessor-based Fluid Control System",International Journal of Microcomputer Applications, Vol. 8, No. 1, pp 5-9, 1989

Design details and theory of microprocessor based controller for fluid system applications are described. This system can also measure the electromagnetic valve characteristics like saturation current and closing time. A number of test results are presented. My contribution is 50%

26. S.Ganesan, J. Hemingway and R. Habbad, " Stand alone Modem design using the AM 79C12", Micrprocessors and microsystem journal, vol 15, no 2, March 1991, pp 113-117.

Details of the design of a real time embedded sytem for modem application using novel multiprocessing techniques. My contribution is 33%.

27. S.Ganesan, " A dual DSP microprocessor system for real-time digital correlation, " Microprocessor and Microsystems Journal, Vol 15, No 7, September 1991, pp 379- 384.

Design of a dual TMS 320C25 DSP processor system with a dual port memory and its application for real time correlation are explained.

28. P.V.R.Raja and S.Ganesan, "An SIMD multiple DSP micro-processor system for image processing", Microprocessor and Microsystems journal, Vol 15, No 9, November 1991, pp 493-501.

A parallel processor using 8 DSP processors and dual port RAMS for image processing applications, performance analysis, algorithms and comparisons are given. My contribution is 50%.

29. T. Ramesh, S.Ganesan, " Reconfigurable Shared and dedicated bus multiprocessor for parallel computing", Computer and Electrical Engineering- an international journal by Pergamon Press, vol. 19, No. 5, pp 377- 386, 1993.

30. S.Ganesan, "Multiprocessor architectures using the DSP TMS 320C40 processors ", The computer applications journal, The Circuit Cellar Project File, Volume 2, 1993, pp 1-12.

Hardware and software considerations for various multiprocessor architectures using advanced parallel processing DSP RISC processor.

31. S. R. Vishnubhotla, S. Ganesan, "Computer Engineering Curriculum at Oakland University," IEEE Computer Architecture Technical Committee Newsletter (journal), Fall, 1996.

This paper discusses the Computer Engineering curriculum issues and Computer Architecture course outline with project.

32. V. Sadekar and S. Ganesan, "Complete Description of Multiple line Segments using Hough Transform", Special Issue of Image and vision Computing journal, Spring 1998.

The process of using the HT to detect lines in an image, new techniques which are more robust and accurate than the earlier published methods are described.

33. S. Ganesan, "Digital Signal Processing Design using TMS320C5x processor" Computers in Education Journal, June 1998.

34. K.N. Rao, and S. Ganesan, " Datapath Synthesis using Genetic Algorithm", Computers and Electrical Engineering, an International Journal, Vol. 26, 2000, pp. 337-349.

35. B. Prasad, S. Ganesan, " Concurrent Engineering and Work Group Computing" Encyclopedia of Microcomputers, Mercel Dekker Inc, 30 pages, Vol. 25, August 2000, pp. 73-95.

36. S.Ganesan and R. Ballal," Technical Challenges and business opportunities in Automotive Electronics", IEEE looking.forward newsletter, pages 2-4, Spring 2000.

37. V.Alladi, S.Ganesan, "E-Commerce soultions for businesses", IEEE looking.forward newsletter, pages 2-4, Spring 2000.

38. S.Ganesan,v.Alladi and R.Ballal," Auto PC in-vehicle computing and internet interface", IEEE looking.forward newsletter, pages 2-4, Spring 2000.

39. S.Ganesan and A.Shanthi, "Computer Network and Agile manufacturing-current and future" Inernational Journal of Agile Manufacturing, Vol.3, isse 1, 2000, pp. 63-70.

40. Subra Ganesan and H. Mousavinezhad, Guest Editor – Integrated Computer aided Engineering Journal, Editor's introduction to the issue. Special issue on Information Technology, Vol. 9, No. 2, 2002.

41. Subra Ganesan, "Computer Engineering Curriculum" SIGCSE-WCAE proceedings, 2003.

42. Subra Ganesan, V. Alladi, J.Wei and K.alladi "Designing Embedded Real time systems with Model Driven Architecture", SAE Special publication SP 1857, March 2004.

43. Upmanju Bajpai "Spectral subtraction based invehicle noise cancellation-implementation on the TMS C6711 DSK". Techonline Journal , http://www.techonlineindia.com/home.aspx, 2005.

44. Subra Ganesan, V. Alladi, J.Wei, K. Alladi, "Designing embedded real time systems with model driven architecture" appears in SAE book: Distributed automotive embedded system, edited by Ron Jurgen, SAE 2007, pages 513-518.

45. Subra Ganesan and Ramya Somisetty. "Autonomic Computing", International Journal of Embedded System and Computer Engineering, Vol.1, Jan-June 2009, pp. 1-12.

46. Suresh Sankaranarayanan and Subra Ganesan, "A layered architecture for agent based wireless sensor mesh networks- applications in healthcare", International Journal of Embedded System and Computer Engineering, Vol. 1, Jan- June 2009, pp. 31-41.

47. Onur Bay, Ron Buddha and Subra Ganesan, "Non-functional requirement of Real Time systems", International Journal of Embedded System and Computer Engineering, July-December 2009, pp. 51-57.

48. J.P. Lomonaco, Subra Ganesan, Ka.C. Cheok, "Embedded Controls development in practice", International Journal of Embedded System and Computer Engineering, July-December 2009, pp.43-50.

49. V. Ramakrishnan and Subramaniam Ganesan, "Pitch control of wind turbine generators", International Journal of Embedded System and Computer Engineering, July-December 2009, pp. 71-79.

50. Ashok Prajapathi and Subra Ganesan, "A generic framework for Condition based maintenance" International Journal of Embedded System and Computer Engineering, July-December 2010, pp.81-88.

51. Manish Shakya, Tuazon, Bhatti, Subra Ganesan, "A microprocessor based baby monitoring system using accelerometer and temperature sensors", EDN, Feb.2011.

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7. S.Ganesan, " Multiprocessor architectures using digital signal processor TMS 320C40", Oakland University, Technical report, TR-CSE- 91-6-1.

8. S.Ganesan, " MIMD/SIMD/ARRAY system with multiple DSP TMS 320C40 processors for image processing", Technical report, Oakland University, July 1991, TR-CSE-91-7-3.

9. R. Haskell, S. Ganesan, M. Tirumale, " Idle speed Fuzzy Controller for a Neon 2-liter, 4 cylinder Engine" TR-CSE 9512-1, 1995.

10. S. Ganesan, A.Kumar, " A study on legacy code maintenance and reengineering", TR CSE 1-1-96, January 1996.

11. S. Ganesan, V. S. Goel, " Computer based visual field test", TR-CSE-12 96-1, December 1996.

12. S. Ganesan, " Simulation of a Transmission Assembly plant using Witness ", TR-CSE- 1-1-97, January 1997.

13. S. Ganesan," Engine controller", Technical Report, 117 Pages, September 1997.

14. S. Ganesan," DSP and Automotive Applications" Technical Report, December 1998, 380 pages.

15. Ken Rao, S. Ganesan, " On-board Diagnostics for Light and Heavy duty vehicles" Technical Report, Winter 1999, 400 pages.

16. S. Kaur, S.Ganesan, " Mobile IP Code implementation " Full code is made available on the web, May 2001.

Patent:

Subra Ganesan etal: Game implements and system for tracking or locating same (Application no: 16/217,885) Filed: December 12, 2018, Granted on July 21, 2020, # 10716971.

John Chupa and Subra Ganesan, "Method for generating electrical power from Municipal wastewater" United states patent #7915749, March 29, 2011.

3 more patents on the same topic area 2012-2013.

BOOKS

1.DECISION TOOLS FOR THE IBM COMPATIBLES, Four volumes.

Volume 1: Microcomputer Fundamentals and Wordstar IV; 171 pages.

Volume 2: Basics and Advanced Features of DBASE III Plus; 257 pages.

Volume 3: Basics and Advanced Features of LOTUS 1-2-3 ; 200 pages.

Volume 4: Advanced Applications Using LOTUS Macros, HAL DBASE III Plus and File Sharing Techniques. 194 pages.

by Kuriakose Athappilli, K.C.Chacko, Subramaniam Ganesan, and Gatmaitan, Published by Merrill Publishing Company, 1989 in spiral binding. [My contribution is 33% . I wrote Volume 3 and a part of Volume 4].

2. Introduction and Applications of 1-2-3, LOTUS Spread sheet, by Subramaniam Ganesan, Published by HP Micro systems Inc., 1989. No ISBN number. 115 pages.

This manuscript covers advanced topics of 1-2-3 and additional materials have been added to the volume 3 listed above.

3. Microprocessor System Design: 68000 Hardware, Software, ECB and Interface, by Subramaniam Ganesan, 1990. No ISBN number.

This course notes is an excellent supplement to any text on microprocessors. Salient features of 68000 processors, system design details, interfacing techniques, laboratory projects, assembler directives, software development and solutions are presented in this notes.

4. S.Ganesan, R. Sudhakar, Raj Shah, " Digital Signal Processing Design using TMS 320C5X, ams Educational Division, 1996, ISBN 0-9642962-5-X.

This book comes with a C50 processor board, and interface board and necessary software. The strength of this book is the hardware board and software which can be used to understand the difficult application concepts correctly. The hardware and software are developed by the authors for the book along with the book.

5. S.Ganesan, Editor " Advances in Concurrent Engineering" Technomic Publishing Co., **BOOK**, 540 pages ISBN -1-56676-604 -4, 1997.

6. Subra Ganesan, Chitra Gopal, " An Introduction to Object Oriented Programming with Java", Anuradha Publishers, ISBN 81-87721-42-1 ; 2003.
7. S.Ganesan, Editor " Electro Information Technology- Proceedings of IEEE EIT 2001", IEEE Region 4, June 2001.
8. Subra Ganesan, Gaurav Saxena, M. Das, "Model based design of adaptive noise cancellation", Monograph, ISBN: 998-3-638-1964-5, Vdm-publisher, September 2009.
9. Subra Ganesan, Editor, "Automotive System Engineering" **Volumes 1 to 4, SAE publication 2011—ISBN 978-0-7680-3493-6**

Tutorial/ Workshop Presented

- Workshop on embedded system topics – 2000 to 2020 once every year through IEEE.
- One day workshop on DSP System design, 1993 to 1999 at General Motors, OU NSF workshop, Chrysler etc.
- Two day workshop " design with Motorola 68000, 56000 DSP" 1990-92.
- Engine controller Electronics- One day workshop, Texas Instruments, SAE India 1997, 1999.
- DSP and Automotive applications, One day workshop, GM, CEERI India.
- On board diagnostics- 2 day workshop- SAE Detroit, SAE India 1998-2000.
- Automotive Sensors- SAE India –one day Seminar, November 2001.
- Real time systems- one day seminar, TACOM, January 18, 2002
- DSP in Embedded system- April 5, 2002
- Advanced FPGA and automotive applications- One day workshop- by S.Ganesan and Xilinx. Feb 27 2003.
- Advances in DSP- Tutorial December 2003
- Tutorial on CAN and LIN, ADCOM conference, December 2003.
- Tutorial on RFID in 2005
- Tutorial on Automotive in-vehicle communication, December 2006 at Chrysler.

GRANTS

Grants received are grouped into 2 categories:
A: Cash, B: Equipment

Category A: CASH Grant

1. Obtained a research grant of $2000, from Biomedical Group(BRSG), Oakland University, in December 1986. Title: Myoelectric signal analysis and identification. Investigator : S. Ganesan

2. Obtained Oakland University faculty research grant of $1000, for the research proposal titled," Implementation of high speed programmable wave digital filters using digital signal microprocessors" Feb 1987. Investigator : S.Ganesan

3. Obtained a research grant of $4600 for "DSP Microprocessor system for real time signal processing" from Oakland University, Faculty research fellowship, for Summer 1988. Investigator: S.Ganesan

4. Obtained a research grant of $20,000 from Texas Instruments for the project " Multiprocessing with TMS 320C25 ", August 1988. Investigator: S.Ganesan

5. Obtained a research grant from Teaching and Learning committee, Oakland University, for " Romable code development ", $1595. Investigator: S.Ganesan

6. Obtained from Cadillac Cage Inc a research grant of $20,000 for a project Phase 1, on " Simulation and analysis of an adaptive control system" January 1990.
Investigators: K.C.Cheok and S.Ganesan.

7. Obtained from Cadillac Cage Inc a research grant of $15,000 for a project Phase 2, on " Implementation using DSP multi processors an adaptive control system" November 1990 Investigators: K.C.Cheok and S.Ganesan.

8. Obtained from Chrysler a research grant for Active noise cancellation for automotive application " $ 20,000. December 1990. Investigator: S.Ganesan

9. Obtained from Texas Instruments, $14,000 for the project," Robot Control using multiple DSP TMS 320C30". December 1991. Investigator: S.Ganesan

10. Project grant from Electrocon International "Application of new methods to computer aided Power system protection", $ 4000, January 1992. Investigator: S.Ganesan

11. Project grant from Motorola $20,000 for "Simulation and Development of a DSP based controller for diesel pump", March 1992. Principal investigator: S. Ganesan.

12. Project grant from RPS inc $ 2000 for the first phase, for, "DSP controller design for a special motor," May 1992. Principal investigator: S. Ganesan.

13. " Data encryption/ decryption system using dual TI DSPC25", International Technology Corporration, Fall 93, **$15,880,** Investigators: S. Kim, S.Ganesan, M. Das.

14. "DSP techniques for engine misfire detection", Chrysler, Winter 94, **$23,341.** PI: S. Ganesan

15. "Fuzzy Controller for small enigne idle speed ", Fall 94, **$23,341,** Chrysler, PI: S. Ganesan.

16. Project investigator for Task 4 (Real time computer controller etc.) under Research Excellence Fund to CRAA/SECS which has an approximate total funding for all tasks of $250,000 per year from 1988-present.

17. " Optimal Controller for engine idle speed " 1995-96, **$53,000,** Chrysler, PI: s. Ganesan, N. Loh, M. Zhody.

18. "Fuzzy Transmission Controller " 1996, $53,436, Chrysler, PIs: S. Ganesan, R. Haskell, Fall 96 and Winter 96.

19. "Data Acquisition and analysis" General Motors, **$60,000** for 95-96.PI: S.Ganesan.

20. Received REF grant / release time for one course (approx. **$15,000** value) in Winter 97.

21. Ganesan, 'Special project -SEM- CS faculty workshop", Oakland University Research Committee, **$1,000** Winter 97.

22. "Study of DSP processors and comparison for automotive power train control applications" Chrysler, **$ 26,718**, 97-98.

23. Nan Loh and S. Ganesan, "Optimal Idle speed engine controller", Chrysler Challenge Fund,I am involved in Phase 2 of the grant. Worked on micro[rocessor based controller and algorithms and testing in the car) Total grant **$169,000,** 1999-2001.

24. S.Ganesan, “Real time Speech recognition using DSP” Brar Inc., **$8534**, Winter 2001. PI: Subra Ganesan

25. Product Development and Manufacturing Center, “ Next Generation Electric Architecture**” $2.285 Million** from Defense and Auto Industries. Dr. Dessert, Dr. Wagner and Dr. Ganesan, October 1999- 2004. I worked on the internet interface and On board diagnostics of military vehicles.

26. Electric Power Steering using DSP 6212- Delphi/R.Tech, $30,000 Jan 2003. PI: Subra Ganesan

27. Hitachi America for Real time Embedded System, $20,000 Summer 2005. PI: Subra Ganesan

28. Hitachi America For Real time embedded system project, $10,000, December 2006. PI: Subra Ganesan

29. Continentel Tevis, for Sensor net and CAN network test software, $9500, 2006-2007. PI: Subra Ganesan

30. Grants from ETAS, FreeScale, Mentor Graphics $2500 for organizing 7th Embedded System workshop on October 10, 2009. PI: Subra Ganesan

31. ContiTevis: $11500 for developing diagnostic software for sensor network, 2008-2009. PI: Subra Ganesan
32. Grant from Harley Davidson “Modeling CAN transceiver and analysis”, $6100, Fall 2010 PI: Subra Ganesan.
33. Member of team on OU-Macomb incubator – Center for Robotics and intelligent vehicles-CRUIS- $500,000 (from OU) 2010-2012.
34. Member of team in the NSF grant –Interdisciplinary research experience in Electrical and Computer Engineering, 2010-2012, $299,995.
35. Member of team in NSF grant - Interdisciplinary research experience in Electrical and Computer Engineering, 2013-2015, $299,995.
36. Member of team in NSF grant—Wireless spectrum allocation and Workshop- 2014, $150,000 (approx.) with Idaho State University.

Category B: Equipment Grant (Partial List)

1. Received from Motorola Microcomputers, databooks as donation for my research and teaching. Replacement Chips and new M68HCEVM Boards 2 numbers, approximately $1100, 12/11/86 and 8/11/87

2. Received from Motorola Data manuals and application notes for use in courses. Approximate value of $ 400.

3. Received from Texas Instruments TMS 32010 DSP microprocessor cross assembler and Latest Cache controller VLSI ICs-6 numbers, TMS 32010 microprocessors, TMS320E15 micro-processors- 6 numbers each for research. Approximate total value of $ 400.

4. Received from Texas Instruments, TMS32010 Emulators, Six numbers, Assembler software, and DFDP software as donation for research and teaching. Approximate value $ 31275 (university price).

5. Received from Intel (1985)- System 310/8086 with iRMX real time operating system (approx value $20,000).

6. Received from Texas Instruments (1985-88):- 32 bit micro-processors and supporting ICs. (Approx. $500).

7. Received from Motorola 68HC11 EVB boards, Six numbers for Design Competition , Jan 1988. Value $ 1009.

8. Received from Texas Instruments TMS 32025 DSP microprocessor cross assembler, C compiler, and TMS320E15, TMS 320C25 micro-processors 6 numbers each , XDS C25 simulator for research. Approximate total value of $ 55200, Nov 15,1988.

9. Received from Motorola 56000 ADS, DSP software of value $4254, Nov 1988.

10. Received from Motorola, audio cassette tape of their courses for MC68000, 56000, 68030, RISC8800 of value $625, Jan 1989.

11. Received from Motorola, MVME133 board and Bug software on June 1989, value $ 3795.

12. Received from Texas Instruments, TMS32030 Emulators, Assembler software, development system and software as donation for research and teaching. Approximate value $20,000 (university price). March 1989.

13. Received from Motorola 68HC11 board and software, August 1989, approximate value of $200.

14. Obtained from Cadre Technologies CASE software to run on DEC workstations, approximate value of $30,000, January 1990.

15. Obtained from Texas Instruments, $12,000 worth of DSP equipment for the project " Robot Control using multiple DSP TMS 320C30". December 1991. Principal investigator: S.Ganesan

16. Equipment Grant from Texas Instruments for research on submitting a proposal: XDS 1000 and software, approximate value $15000. June 1991.

17. Equipment Grant from Texas Instrument for research on submitting a proposal: Graphic processor board(TMS 34020 GSP) and software, approximate value $7000, July 1991.

18. Equipment Grant from Texas Instrument for research on submitting a proposal:Microcontroller board TMS 370 and software, approximate value $3000. June 1991.

19. Equipment Grant from General Motors for research on submitting a proposal: 32 node Intel Hypercube iPsc(approximate value $20,000) and NCUBE 4 node board, approximate value $20000). June 1991.

20. Equipment grant for a joint project with General Motors on, "Multiple DSP procssor based system for real time lane sensing and image processing in an automotive environment,". Parallel processor board, Video camera, and software are given by GM. Approximate value: $10,000.

21. Equipment donation from Motorola, HC11 EVB 20 numbers and HC 16 EVB, C compiler, Assembler tools Fall 94, approximate value $6000.

22. Donation from Intel " Fuzzy builder kit", Fall 94 approximate value $500.

23. Donation from Texas instruments, C30 EVBs seven numbers, C25 EVB, Fuzzy sotware, C compiler, Assembler tools, Summer 94, Approximate value $11,000.

24. Donation from Texas Instruments, " C40 Parallel DSP boards 2 numbers, Fall 95, $ 28,000.

25. Donation from Xilinx, 15 FPGA development boards and software, $30,000. Fall 95.

26. Donation from Xilinx, FPGA board upgrades and software**,** $4216, April 30, 97.

27. Donation from Texas Instruments, TMS324X EVM, Assembler and C compiler, $ 5000, Fall 97.

28. Donation from Chrysler, Engine Simulator, Blue Cube setup and controller, approximate Value $60,000. April 98.

29. Donation from Delco, Low voltage Brushless DC motor for developing Electronic power steering using DSP processor, approximate value, $5000, March 1998.
30. Software tools for DSP TMS 3206xx/compiler/Assembler/Linker from Texas instruments, Fall 2000, Approximate value $2000.
31. Donation from Motorola, “Code Warrior” software tool for Palm OS and Linux, for Real time embedded system development, Winter 2001, approximate value $2000.
32. **$254,853**from xilinx V1000 (latest High Density FPGA) Development kit, software and chipsets, January 2003.
33. **$1250**from Xilinx for running “FPGA and Automotive application workshop” 2003.
34. TexasInstruments: RFID Eval Kit (donation) approx value $1000. Fall 2003
35. Software tools for DSP TMS320C6xx/ Compiler/ Assembler/Linker from Texas Instruments, Winter 2003, Approximate Value **$3000**.
36. TexasInstruments: Low power Micro (TMS480) kit, approx value $400. Winter 2004
37. Donation of Code Warrior and HCS12 boards (20) from FreeScale Semiconductor, 2006, approx value $3000.
38. ·Received from Altera, 8 FPGA boards- DE2 Cyclone FPGAs, cost $ 3500 Winter 2008
39. Donation from Xilinx FPGA Boards and Software (6 numbers), approx value of $1000, October 2009.
40. Received from Altera FPGA software tools- professional version 20 licenses updated version- **$10,000** (University price) Fall 2011.
41. Received from Xilinx FPGA borads Atlys Spartan 6 boards 8 numbers, XUVP V5 boards, 8 numbers, for use in ECE 573 course, December 2011.Approximate value $6000.
42. Received a donation from Xilinx ISE systeme edition FPGA design tools software license for 50 units at a University rate of $1499 x 50 = **$76,440**, November 2011
43. Received from TI DSP Code Composer Studio software tools with 20 license **$5000,** Summer 2011.
44. Received from Freescale, Student Car Racing kits, Bolero microcontroller boards and software Winter 2012. Approx value $2000
45. DSP boards grant from TI with software tools site license, Jan 2013 approx value $10, 000.
46. Received from TI DSP Code Composer Studio software tools with 20 license **$5000,** Summer 2014.
47. Received from TI DSP Development board **$2000- 8 numbers—Fall 2014.**.
48. Received from Altera- FPGA development boards- 6 numbers- $3000 approx- Fall 2014

49. Received from Infenion- Aurix development boards and Software tools- 6 numbers – approx. cost of $ 2000- Winter 2015

50. Received from ARM- full professional development software tools- $10,000-Fall 2014

51. Received from Polarion- software development tools- approx. value $10,000- Fall 2014.

52. Received from ETAS- Real time test tools- approx. value $7000 – Fall 2014.

53. Received from Intel FPGA boards 40 for research and teaching- Software tools for the boards- Value nearly $10,000.

SERVICES (Partial List)

Department

1. Member, Computer Science and Engineering department Graduate admission committee, 1987- present.
2. Took part in the reorganization of courses: Microprocessor systems and advanced computer architecture courses, 1987-88. Introduced a number of new courses. Reorganized microprocessor laboratory.
3. **Chairman CSE department** from August 1991 till 1998
4. **Associate Director, Product Development and Manufacturing Center, PDMC, oakland university, 1999- present.**
5. ECE dept Grad committee, Embedded System Program co-ordinator, Web development committee member, 2008-2009.

School

1. Chairman, Research committee, School of Engineering and Computer Science, from 9-10-87 to 8-1-1991. Member research committee 1991-93.

   Prepared SECS faculty research activities folder. Installed and maintained the SECS research publications display. Arranged meetings with the SECS dean and various industries in the Oakland tech park for improving research environment.

2. Member, Executive Committee, School of Engineering and Computer Science, from 9-10-88 to 8-1-1989.

3. Took part in meetings for the center of excellence in advanced automation, on Feb 10, and March 3,1987.

4. Took part in writing the proposal " Establishment of National center for manufacturing sciences", Oct, 10, 1986.
5. Chair, Committee on Promotion, 2001, 2003, 2004.
6. Member Committee on Promotion 2002.

University

1. Member, Oakland University Committee on Teaching and Learning, from 9-10-1987 to 8-1-1989. Took active part in the grant evaluations and monthly seminars.

2. Gave a series of 1 hour lectures on course preview of Engineering and computer Science during New student orientations and parents' meeting with faculty on June 15, July 1,9 and July 23, 1987, 1988, 1989.

3. Participated in the seminar titled," Balancing Teaching, Research, and Service", arranged by the Teaching and Learning committee, Oakland University Fall 1986, 1988 and 1989.

4. Member academic computing committee, 1991- 2018.

5. Member University Senate committee on Research and grants 1994-96.

Professional

1. Session Chairman 31st International Symposium on Micro-processor applications, Austin Nov 86.

2. Session Chairman ASEE annual Conference, Reno, Navada, June 1987.

3. Member Organizing Committee for 3rd International Conference on Robotics & Factories of Future, 1988.

4. Panel session Chairperson, 3rd International conference on Robotics and Factory of future, 1988.

5. Session chairman for the session on "Expert control for Robotic application", 3rd International conference on Robotics and Factories of Future, 1988.

6. Senior member IEEE Computer Society; Member IEEE Technical committee on microcomputer bus ; Member Technical committee on Computer Architecture.

7. Regularly review technical papers for IEEE Computer magazine from 1986.

8. Served as a Judge in Student's Design Competition at ASEE annual Conference, Reno, Nevada, June 1987.

9. Editor for "PRODUCTIVITY ALERT" quarterly bulletin published by the International Society for Productivity Enhancement (ISPE).

10. Council Member of the International Society for Productivity Enhancement (ISPE).

11. Session Chairman, Simulation and Modeling conference, May 1989.

12. Examiner for three Ph.D students thesis at Univ. of Detroit, Fall 1988, Winter 1989 and Winter 1990.

13. Gave seminars / lectures at General Motors, Saginaw State University, Central Michigan University on advanced / research topics.

14. Chairperson, Session PC14, SAE 1992 international conference, February 24-28, 1992

15. IEEE South East Michigan Chapter Computer Soceity Chair/Vice-chair 1994,1995,1996, 1997, 1998. Chair 1999-2007.

16. Organizing a 3rd Annual Computer Science faculty for South East Michigan, at Oakland University, April, 18 1997.

17. Organizing as a program chairman, 4th International conference on Concurrent Engineering, August 20-22, 1997 at Oakland University.

18. Consultant and Examiner, Ngee Ann Poly, Singapore, 1999-2002.
19. **Visiting Professor**, Vellore Engineering College and Kumaraguru Engineering College, India.
20. Visiting Professor, Indian Institute of Astrophysics, Bangalore, India. Work involves visits during summer and taking part in developing real time data/ image Compression system. Visited and gave lectures in July 2001, July 2002, 2003, 2004, 2005 and 2006.
21. SAE 2002, 2003, 2004, 2005 2006 Annual World Congress, Detroit- Organizer for System Engineering.
22. SAE- Real Time automotive software standard committee member.
23. Member of Editorial board, Indian electrical and electronics engineering society for modeling and simulation (www.ieee-sms.org)
24. Member of Board of directors of ISAM. International society of Agile Manufacturing.
25. Board member, IEEE CAB, Computer Society for the past 10 years.
26. Distinguished visiting speaker, IEEE Computer society.
27. Executive committee member, ASEE NCS
28. Technical activities coordinator, IEEE Region 4
29. Director of Technical activities, IEEE SEM, south east Michigan.
30. Member STIO- Govt. of India- for creating technology corridor for automotive R&D.

31. CSAB Accreditation Evaluator 1998-2000.

32. IEEE EIT conference Organizer member June 2000.

33. IEEE EIT conference General Chair June 2001.

34. ASEE NCS conference General Chair April 2002.

35. Committee member for Conference ADCOM 2003

36. Committee member for Conference TIMA 2004
37. Committee member for Conference EISCO 2005
38. Co-General Chair, ICSIT, Algeria, Aug 2005
39. Co-General Chair, ISCO conference, India, August 2006
40. Organizer, IEEE Embedded system workshop,2003, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016.
41. General Chair, ICCCS, Mauritius, December 5-7, 2015
42. General Chair, ICAM 2015, Sultanpur, Dece 28-29, 2015
43. Keynote speaker, EEICC conference, Karpagam University, December 17, 2015
44. Delivered 2 day workshop on Validation and Verification at Nanded, India, November 27-28, 2015.
45. Organizer IEEE EIT conference, Oakland University, 2018
46. Organizer ASDF ICCTOT conference, July 2020
47. Committee member of various conferences including ieee eit 2021.