

**Dr.S.SUMATHI**  
**Associate Professor**  
**Department of Electrical & Electronics**  
**Engineering**  
**PSG College of Technology, Coimbatore – 641 004**  
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## EDUCATION

### POST DOCTORATE

(Month/Year)

fuzzy genetic  
 university

PhD Faculty of Engineering, Application of Neuro  
 models for data mining, Bharathiar

### POSTGRADUATE

(Month/Year)

ME (Appl.Elec) Bharathiar University 1988-1990

### UNDERGRADUATE

(Month/Year)

BE (ECE) Bharathiar University 1984-1988

## EXPERIENCE

Teaching: 26 Years

Research: 18 Years

Name of the College	Designation	Joining Date	Relieving Date
PSG College of Technology	Lecturer (OG)	02.07.1990	01.07.1996
PSG College of Technology	Lecturer(Sr.G)	02.07.1996	01.07.2000
PSG College of Technology	Lecturer(SG)	02.07.2000	17.01.2002
PSG College of Technology	Assistant Professor	18.01.2002	31.12.2005
PSG College of Technology	Associate Professor	01.01.2006	Till Date

### Responsibilities:

- Staff advisor for Rotatract Club during 2005-2008
- Coordinator of Research & Development Bulletin in PSG College of Technology from 2003-2004.
- Project Team member in the project titled, “Curriculum development and Laboratory setup”, organized by Naval Academy, Ezhimala, 2007.

## COURSES HANDLED

### UNDERGRADUATE

- Operating systems
- Embedded system design
- Relational database management systems
- Computer architecture
- Data structures and algorithms

### POSTGRADUATE

- Neural networks and fuzzy logic
- Embedded system design
- Embedded system networks
- Embedded software
- Operating systems

## RESEARCH AREAS

Evolutionary Computing, Data mining

## PUBLICATIONS

### **BOOKS PUBLISHED WITH DETAILS:**

- Dr. S. Sumathi, Surekha P, “Virtual Instrumentation using LABView”, ACME Learning, India, ISBN: 1234567175093, 01.12.2010, March 2011. Rs.261, ISBN-13: 1234567175093 Publishing Date: 2010-12-01.
- Dr. S. Sumathi, Surekha P, “Evolutionary Algorithms using MATLAB”, ACME Learning, India, ISBN: 978-93-80408-42-2, Dec 2010. Rs. 279, ISBN-13: 9789380408422, Publishing Date:2010-12-01
- Dr. S. Sumathi, Surekha P, “Computational Intelligence Paradigms: Theory and Applications using MATLAB”, CRC Press, ISBN: 9781439809020, January 5th 2010. £105.00
- Dr. S. Sumathi, Dr. Essakirajan, “Fundamentals of Relational Database management systems” Springer Verlag, Germany, ISBN-13978-3-540-48397, 2007. £194.00, ISBN: 978-3-540-48397-7 (Print) 978-3-540-48399-1 (Online) Volume 47, 2007.
- Dr. S. Sumathi, Dr. S.N. Sivananadam, Dr, S.N. Deepa,” Introduction to Neural networks with Matlab” Tata McGrawhill New Delhi, ISBN 0070591121, 9780070591127, 2005. Rs 620/-
- Dr. S. Sumathi, Dr. S.N. Sivananadam, Dr, S.N. Deepa, “Introduction to Fuzzy Logic with Matlab” Springer Verlag, Germany, ISBN 978-3-540-35781-0 2007. €135,19
- Dr. S. Sumathi, Dr. S.N. Sivananadam, “Introduction to Data Mining and its applications” Springer Verlag, Germany, ISBN-13 978-3-540-34350, 2006. \$409.00
- Dr. S. Sumathi, Dr.L.Ashok Kumar, and Dr.P.Surekha, “Solar PV and Wind Energy Conservation Systems – An Introduction to Theory, Modeling with MATLAB/SIMULINK, and the Role of Soft Computing Techniques”, Green Energy and

Technology, Springer; 2015 Edition (20 April 2015) ISBN – 10:3319149407, ISBN-13; 978-3319149400.

- Dr. S. Sumathi, Dr.L.Ashok Kumar, and Dr.P.Surekha “Computational Intelligence Paradigms for Optimization Problems using Matlab / SimuLink”, CRC Press, Taylor & Francis Group, USA, ISBN 9781498743709, December 22nd 2015 Edition.

## **INTERNATIONAL JOURNALS AND NATIONAL JOURNALS**

- 1) D. Chandrakala, Dr. S. Sumathi, D. Saraswathi, “Blur Identification with Image Restoration based on Application of Data Mining Techniques”, International Journal of Imaging, 2010 Autumn, Volume 4, Number A10, page no. 99 -122.
- 2) D. Chandrakala, Dr. S. Sumathi, S. Karthi, “Soft Computing Techniques based Recursive Error Correction Output Code for Multi-class Pattern Classification”, CiiT International Journal of Fuzzy Systems, Vol 3, No 1, page no. 13 – 20, January 2011. (DOI: FSo12011003)
- 3) D. Chandrakala, Dr. S. Sumathi, S. Karthi, "Classification of Multi-Class Real World Pattern Recognition Problems based on Data Mining Techniques" is accepted for publication in International Journal on Computer Engineering and Information Technology, Scientific Engineering Research Corporation (SERC) publications, India.
- 4) D. Chandrakala, Dr. S. Sumathi, S. Karthi, “Machine Learning Techniques for Classification of Multi-class problems” is accepted for publication in International Journal of Knowledge-based and Intelligent Engineering Systems , IOS Press, Netherlands.
- 5) A.Soundarrajan, Dr.S.Sumathi, R.Gowtham,” Fuzzy-based Intelligent Controller for Power Generating Systems”, International Journal of Vibration and Control, Vol.1, 10.1177/1077546310371347, Nov, 2010. [Impact Factor – 0.89]
- 6) A. Soundarrajan, S. Sumathi, G. Sivamurugan, “Voltage and Frequency control in power generating systems using hybrid evolutionary algorithms” International Journal of Vibration and Control, Under Printing, Ref. No. DOI:10.1177/1077546311404731. [Impact Factor – 0.89]
- 7) A.Soundarrajan, Dr.S.Sumathi, G.Sivamurugan, “Evolutionary Algorithms for LFC in two area interconnected power systems”, International Journal of Artificial Intelligent Systems and Machine Learning, Vol.5, Iss.1, 2010. [Impact Factor – 0.763]
- 8) A.Soundarrajan & Dr.S.Sumathi, Particle Swarm Optimization Based LFC and AVR of Autonomous Power Generating System, “Statistical & Soft Computing Techniques For System Analysis and Design”, IAENG International Journal of Computer Science, Special Issue,37:1, IJCS\_37\_1\_10, 2009.
- 9) A.Soundarrajan & Dr.S.Sumathi, "GA based PID controller for Load Frequency Control", International Journal on Advances in Computational Sciences and Technology(ACST), Vol.2 No.3, 2009.
- 10) A.Soundarrajan & Dr.S.Sumathi, "Effect of Non-linearities in Fuzzy Based Load Frequency Control", "International Journal of Electronics Engineering Research (IJEER)", Vol.1 No.3., 2009.
- 11) A.Soundarrajan & Dr.S.Sumathi, “Fuzzy based intelligent controller for LFC and AVR of a power generating systemS”, International Journal of Emerging Technologies and Applications in Engineering, Technology and Sciences, Vol.3, Issue.1, 2010.
- 12) A.Soundarrajan, Dr.S.Sumathi, C.Sundar, “ACO based PID controller for AVR in Autonomous power generating systems”, International Journal of Recent trends in engineering, Vol. 3, Issue.4, Aug, 2010.
- 13) A. Soundarrajan, S. Sumathi, G. Sivamurugan, “Hybrid Evolutionary Algorithms for frequency and Voltage Control in Power Generating systems” ICTACT International Journal on Soft Computing”, Vol.1, No.2, pp.88-97, 2010.

- 14) Umamaheswari K., Sumathi S., Sivanandam S.N. and Ponson T., (July 2007), 'Artificial Neural Network Based Image Data Mining with Hybrid Recognizers', International Journal of Soft Computing Applications, ssue1, Vienna, pp.27-49.
- 15) Umamaheswari K., Sumathi S., Sivanandam S.N. and Anburajan K. (November 2007), 'Neuro Genetic-Nearest Neighbor Based Data Mining Techniques for Fingerprint Classification and Recognition System', ICGST International Journal on Graphics, Vision and Image Processing, Vol. 7, Issue 3, pp.39 – 50.
- 16) Umamaheswari K., Sumathi S., Aparna V. and Arthi A., (April – September 2009), 'Text Classification using Enhanced Naïve Bayes with Genetic algorithm', International Journal of Computer Applications in Engineering, Technology and Sciences, India, Vol. 1, Issue 2, pp. 263 - 270.
- 17) Umamaheswari K., Sumathi S., and Priti C., (April – September 2009), 'Weight Adapted  $k$ -Nearest Neighbor Algorithm with Genetic Approach for Data Classification', International Journal of Computer Applications in Engineering, Technology and Sciences, India, Vol. 1, Issue 2, pp. 382 – 389.
- 18) Umamaheswari K., Sumathi S. Sivanandam S.N., and Ponson T., (2008), 'Classification in data mining for face images using neuro: genetic approaches', International Journal of Artificial Intelligence and Soft Computing, Inderscience publishers, UK, Vol. 1, Nos. 2/3, pp. 147 – 175.
- 19) Umamaheswari K., Sumathi S., and Priti C., (July 2009), 'Weighted K Nearest Neighbor Classification using Optimized Genetic algorithm', International Journal of Advances in Computer Science and Engineering, Puspha publishers, Allahabad, Volume 3(2), pp. 87-109.
- 20) Umamaheswari K., Sumathi S., Aparna V. and Arthi A., 'Document categorization using Improved Naïve Bayes Technique with Genetic Algorithm', Pentagram Research Publications, International Journal of Systemics, Cybernetics and Informatics, IJSCI, Hyderabad, communicated.
- 21) Umamaheswari K., Sumathi S. and Sivanandam S. N., (September 2007), 'Data Mining Techniques for Image Classification and Recognition System in Finger Print Images', Technology Journal, PSG College of Technology, Coimbatore, No. 3, Vol. 3, pp. 40–51.
- 22) Umamaheswari K., Sumathi S. Sivanandam S.N., and Dhinesh Kumar T., (May – June 2009), 'A Hybrid Data Mining Technique for Face Recognition System using Enhanced Independent Component Analysis', National Journal of Computer Science, Karpagam journal of publications, Coimbatore, Vol. 3, Issue 4, pp. 1108 – 1120.
- 23) Hamsapriya T., Sumathi S. and Sivanandam S.N., Babu K. (2004), 'Parallel Buddy Prima-A hybrid parallel frequent itemset mining algorithm for very large databases', Academic Open Internet Journal, Vol.13.
- 24) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2005), 'A hybrid Parallel Genetic Algorithm approach for graph coloring', International Journal of Knowledge-based and Intelligent Engineering systems, Vol. 9, No. 3, pp. 249-259.
- 25) Hamsapriya T., Sumathi S. and Sivanandam S.N. 'A Novel Server based fault tolerant parallel access scheme using mirrored servers', Advancement of Modeling and Simulation Techniques in Enterprises (AMSE), France (accepted).
- 26) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2005), 'Fault –Tolerant Tsunami Warning System using Mirrored web servers', Indian Journal of Power and River Valley Development, Vol. 55, Nos. 10&11, pp.238-247.
- 27) Hamsapriya T. and Sumathi S. (2006), 'Targeted Association querying for Dynamic and distributed databases', Karpagam's Journal of Computer Science, Issue.3, pp.249-259.

- 28) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2006), 'High Performance Parallel targeted Association Querying for very large databases' National Journal of Technology, PSG College of Technology, Vol. 2, No.1, pp.1-6.
- 29) Hamsapriya T. and Sumathi S. (2006), 'Enhanced Parallel Implementation of Backpropagation Algorithm for Biomedical Classification problems', Karpagam's Journal of Computer Science, Vol.1 No.6, pp.479-488.
- 30) Surekha P and Dr.S.Sumathi, "Solving Economic Load Dispatch problems using Differential Evolution with Opposition Based Learning", *WSEAS Transactions on Information Science and Applications*, Vol. 9, No. 1, pp. 1-13, January 2012. (Impact factor: 0.39)
- 31) Surekha P and Dr.S.Sumathi, "Performance comparison of optimization techniques on robust digital image watermarking against attacks", *Applied Artificial Intelligence – Taylor and Francis*, Vol. 26, No. 7, pp. 615-644, August 2012. (Impact factor: 0.563).
- 32) Surekha P and Dr.S.Sumathi, "An Integrated GA-ABC optimization technique to solve unit commitment and economic dispatch problems", *Asian Journal of Scientific Research*, Vol. 5, No. 3, pp. 93-107, May 2012. (Impact factor: 0.51)
- 33) Surekha P and Dr.S.Sumathi, "An Improved Differential Evolution Algorithm for Optimal Load Dispatch in Power Systems including transmission losses", *Journal of Electrical and Electronics Engineering*, Vol. 11, No. 2, pp. 1379-1390, Feb 2012. (Impact factor: 0.109)
- 34) Surekha P and Dr.S.Sumathi, "Solution to the Job Shop Scheduling Problem using Hybrid Genetic Swarm Optimization based on ( $\lambda,1$ ) Fuzzy Processing Time", *European Journal on Scientific Research*, Vol.64 No.2 (2011), pp. 168-188. (Impact factor: 0.326).
- 35) Surekha P and Dr.S.Sumathi, "Application of Particle Swarm Optimization for Solving Multi-Depot Vehicle Routing Problems", *International Journal of Artificial Intelligent Systems and Machine Learning*, DOI: AIML102011002, ISSN 0974 – 9667, October 2011. (Impact factor = 0.763).
- 36) Surekha P and Dr.S.Sumathi, "Implementation of Genetic Algorithm for a DWT based Image Watermarking Scheme", *ICTACT Journal of Soft Computing*, Vol. 2, No. 1, July 2011, pp. 244-252.
- 37) Surekha P and Dr.S.Sumathi, "Optimization of Job Shop Scheduling Problems using Particle Swarm and Ant Colony Algorithms", *International Journal of Engineering Intelligent Systems*, communicated. (Impact factor: 0.2).
- 38) Surekha P and Dr.S.Sumathi, "Solution To Multi-Depot Vehicle Routing Problem Using Genetic Algorithms", *World Applied Programming*, Vol.1, No .3, pp. 118-131, August 2011.
- 39) Surekha P and Dr.S.Sumathi, "A Self-adaptive Fuzzy C-means based Radial basis Function Network to solve Economic Load Dispatch Problems", *International Journal of Computer Applications*, Vol. 25, No. 4, pp. 50-59, July 2011.
- 40) Surekha P and Dr.S.Sumathi, "Optimization of Pre-Watermarked Digital Images using Genetic Algorithm", *International Journal of Imaging and Robotics*, Vol. 5, No. S11, ISSN: 2231-525X, pp. 59-79, Apr 2011 (Impact factor: 0.110).
- 41) Surekha P and Dr.S.Sumathi, "PSO and ACO based approach for solving combinatorial Fuzzy Job Shop Scheduling Problem", *International Journal of Computer Technology and Applications*, Vol 2 (1), 112-120, ISSN: 2229-6093, Jan-Feb 2011.
- 42) Surekha P and Dr.S.Sumathi, "Planning, Scheduling and Optimizing Job Shop Scheduling Problem Using Genetic Algorithm", *International Journal of Artificial Intelligent Systems and Machine Learning*, DOI: AIML012011011, ISSN 0974 – 9543, January 2011. (Impact factor = 0.763).
- 43) Surekha P and Dr. S. Sumathi, "Application of GA and PSO to the Analysis of Digital Image Watermarking Processes", *International Journal of Computer Science and Emerging Technologies*, Vol. 1, Issue 4, E-ISSN: 2044-6004, Dec 2010.

- 44) Surekha P and Dr. S Sumathi, "Solving Fuzzy Based Job Shop Scheduling Problems using GA and ACO", *International Journal of Emerging Trends in Computing and Information Sciences*, VOL. 1, NO. 2, E-ISSN 2218-6301, pp. 95-102, Oct 2010. (Impact factor = 0.3).
- 45) Surekha P and Dr. S Sumathi, "An Optimization Approach to Digital Image Watermarking Based On GA and PSO", *International Journal of Digital Image Processing*, DOI: DIP092010007, ISSN 0974 – 9586, September 2010. (Impact factor = 0.652).
- 46) Surekha P and Dr. S Sumathi, "Genetic Algorithm and Ant Colony Optimization for Optimizing Combinatorial Fuzzy Job Shop Scheduling Problems", *International Journal of Artificial Intelligent Systems and Machine Learning*, DOI: AIML092010004, ISSN 0974 – 9543, September 2010. (Impact factor = 0.763).
- 47) Surekha P and Dr. S Sumathi, "Applications of Computational Intelligence Paradigms: A survey", *Journal of software project management and quality assurance, International Sciences Press*, ISSN: 2229-7448, Vol 1. No 2, pp. 85-97, July 2010.
- 48) Surekha P and Dr. S Sumathi, "A Survey of Computational Intelligence Techniques in Industrial Applications", *International Journal of Advanced Engineering and Applications*, ISSN: 0975-7783, pp. 91-96, Jan 2010.
- 49) Surekha P and Dr. S Sumathi., "Genetic Algorithm for global path planning in a static environment implemented on a mobile robot", *Technology Journal of PSG college of Technology*, Coimbatore, Vol. 2, No. 3, ISSN: 0973-1334, pp. 20-32.

#### **INTERNATIONAL CONFERENCES AND NATIONAL CONFERENCES**

- 1) D. Chandrakala, Dr. S. Sumathi, M. Vasuki, "Novelty Detection in Stored Video Stream", International Conference on Modeling and Simulation (ICMOS '07), Coimbatore Institute of Technology, Coimbatore, 27<sup>th</sup> – 29<sup>th</sup> August 2007.
- 2) D. Chandrakala, Dr. S. Sumathi, S. Bhuvana, "Combining Low Level Features for Image Retrieval – A Performance Evaluation", International Conference on Modeling and Simulation (ICMOS '07), Coimbatore Institute of Technology, Coimbatore, 27<sup>th</sup> – 29<sup>th</sup> August 2007.
- 3) D. Chandrakala, Dr. S. Sumathi, S. Karthi, "Soft Computing based Error Correcting Output Code for Multi-Class Real World Pattern Classification", International Conference on Embedded Systems (ICES 2010), Coimbatore Institute of Technology, Coimbatore, 14<sup>th</sup> -16<sup>th</sup> July 2010.
- 4) D. Chandrakala, Dr. S. Sumathi, D. Saraswathi, "Soft Computing based Unknown Blur Identification in Digital Images", International Conference on Embedded Systems (ICES 2010), Coimbatore Institute of Technology, Coimbatore, 14<sup>th</sup> -16<sup>th</sup> July 2010.
- 5) D. Chandrakala, Dr. S. Sumathi, S. Karthi, "Soft Computing Techniques based Recursive Error Correction Output Code for Multi-class Pattern Classification", International Conference on Innovative Research in Engineering and Technology (iCIRET2010), Park College of Engineering and Technology, Coimbatore, 12<sup>th</sup> – 14<sup>th</sup> August 2010.
- 6) D. Chandrakala, Dr. S. Sumathi, S. Karthi, "Bio-geography based code matrix generation for classification of multi-class real world pattern recognition problems", International Conference on Computer Applications and Information Technology (CAIT 2010), Hindustan College of Arts and Science, Coimbatore, 3<sup>rd</sup> September 2010.
- 7) D. Chandrakala, Dr. S. Sumathi, D. Saraswathi, "Soft Computing based Unknown Blur Identification for Image Restoration and Compression using Wavelet Coding", International Conference on Swarm, Evolutionary and Memetic Computing (SEMCCO 2010), SRM University, Chennai, 16<sup>th</sup> – 18<sup>th</sup> December 2010.
- 8) A. Soundarrajan, S. Sumathi, G. Sivamurugan, "Hybrid Evolutionary Algorithms for frequency and Voltage Control in Power Generating systems" ICTACT International Journal on Soft Computing", Vol.1, No.2, pp.88-97, 2010.

- 9) A.Soundarrajan & Dr.S.Sumathi, "Performance analysis of Non-linearity in Fuzzy based Load Frequency Control", International Conference on Electrical Energy Systems and Power Electronics in Emerging Economics, IEEE Madras Section, SRM University, Chennai, April'2009.
- 10) A. Soundarrajan, S. Sumathi, M.Ramkumar, N.Archana, "Hybrid Evolutionary Algorithm for Voltage and Frequency Control in Power Generating systems", International Conference on Embedded Systems, Coimbatore Institute of Technology, Coimbatore, July' 2010.
- 11) A.Soundarrajan & Dr.S.Sumathi, "Fuzzy Logic Based Load Frequency Control", Third National conference on Innovations in Information and Communication Technology, PSG College of Technology, Coimbatore, Sept'2007.
- 12) Umamaheswari K., Sumathi S., and Sivanandam S.N., (Jan 4-6, 2006), 'Mining Frequent Itemsets in Incremental Mining using Depth First Search (DEFSEM) algorithm', Proceedings of the International Conference on Resource utilization and Intelligent Systems. Kongu Engineering College, India, pp 855-859.
- 13) Umamaheswari K., Sumathi S. and Sivanandam S.N., (December 20- 23, 2006), 'Neuro – Genetic approaches to classification of Face Images with effective feature selection using hybrid classifiers', Proceedings of the 14th International Conference on Advanced Computing & Communications, NIT, Surathkal, pp 286 – 291.
- 14) Umamaheswari K., Sumathi S. and Sivanandam S. N., (Feb 1-3, 2007), 'Image Data Mining Technique for Face Recognition System using Hybrid Recognizer', Proceedings of the International Conference on iconADELCO, National Engineering College, India, pp 507 – 518.
- 15) Umamaheswari K., Sumathi S. and Sivanandam S.N., (Feb 1-3, 2007), 'Finger Print Classification and Recognition System using Neural Network and Nearest Neighbor Algorithm', Proceedings of the International Conference on iconADELCO, National Engineering College, India, pp 775 – 786.
- 16) Umamaheswari K., Sumathi S. and Sivanandam S. N., (February 22- 24, 2007), 'Efficient Finger Print Image Classification and Recognition using Neural Network Data Mining', Proceedings of the International Conference on Signal Processing, Communications and Networking (ICSCN), Madras Institute of Technology, Anna University, Chennai, pp 426-432.
- 17) Umamaheswari K., Sumathi S. and Sivanandam S. N., (December 22-23 2006), 'Image Data Mining Classification of Face Images using Kohonen SOM Network with Hybrid classifier', Proceedings of Sixth National Conference on Convergence of Computer and Information Engineering, PSG College of Technology, India, (CD).
- 18) Umamaheswari K., and Sumathi S., (March 11-12, 2006), 'Improving Classification performance of unstructured text using Incremental Latent Semantic Indexing Technique', Proceedings of the National conference on recent trends in data mining and its Applications, Annamalai University, India, pp 88 – 93.
- 19) Umamaheswari K., and Sumathi S., (September 21-22, 2007) 'Consistency based Feature Selection Approach for Improving Text Classification Performance', Proceedings of Third National Conference on Innovations in Information and Communication Technology, PSG College of Technology, Coimbatore, pp 111- 116.
- 20) Umamaheswari K., Sumathi S. and Sharanya Devi U., (April 2-3 2009), 'Structured Data Classification using Weighted k –Nearest Neighbor with Genetic Algorithm', Proceedings of the second National Conference in Emerging Trends in Engineering and Technology, SNCETET -2009, Rajarajeswari Engineering College, (CD).

- 21) Hamsapriya T. and Sumathi S. (2006), 'A Novel Approach for targeted Association Querying', in the Proceedings of International Conference on Resource Utilization and Intelligent systems, (INCRUIS-06), pp.1044-1048.
- 22) Hamsapriya T., Sumathi S. and Sivanandam S.N. and Naveenkumar B. (2006), 'A Genetic Local search approach to the load balancing problem' in Proceedings of International Conference on Recent trends in Information Systems (IRIS'06), NEC, India, pp.669-682.
- 23) Hamsapriya T., Sumathi S. and Sivanandam S.N. 'Parallel Buddy – A hybrid Maximal frequent itemset mining algorithm for very large databases', accepted for publication in ICAFET 2006, Universiti Malaysia Saba, Malaysia (accepted).
- 24) Hamsapriya T. Sumathi S. and Sivanandam S.N. 'Performance Evaluation of Hybrid Parallel Genetic Algorithms for Graph Coloring Problems', accepted for publication in ICAFET 2006, Universiti Malaysia Saba, Malaysia (accepted).
- 25) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2004), 'A hybrid efficient Approach for frequent itemset mining', Proc of National Conference on Data Mining Dec 2004, Kumaraguru College of Technology, Coimbatore, pp. 19-30.
- 26) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2006), 'Parallel Genetic Algorithm Approach for graph coloring problems', Proc of the Third National Conference on Electronics Control and Instrumentation ECI-2006, pp. 31-37.
- 27) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2006), 'Enhanced Parallel Implementation of Neural network Architecture for Biomedical Classification Problems', Proc. of the National Conference on Advanced Computing, NCAC 2006, MIT, pp.187-197.
- 28) Hamsapriya T., Sumathi S. and Sivanandam S.N. (2006), 'Frequent and Targeted Association querying for dynamic and distributed databases', Proc. of the National Conference on Recent trends in data mining and its applications NCDMA -2006, Annamalai University, pp.65-75.
- 29) Hamsapriya T., Sumathi S. and Sivanandam S.N. and Anusooya Devi, (2006), 'Image Compression by Vector Quantization using Kohonen's self-organizing maps', in Proceedings of National Conference "Vision 06" on "High Performance Computing", Govt. College of Engineering, Tirunelveli, pp.331-336.
- 30) Surekha P, P. RA. Mohanaraajan, Dr. S Sumathi, "Ant Colony Optimization for Solving Combinatorial Fuzzy Job Shop Scheduling Problems", Int. Conf. on Communication and Computational Intelligence, Kongu Engineering College, Erode, India, Dec 2010.
- 31) Surekha P, P. RA. Mohanaraajan, Dr. S Sumathi, "Genetic Algorithm and Particle Swarm Optimization Approaches to Solve Combinatorial Job Shop Scheduling Problems", IEEE Int. Conf. Computational Intelligence and Computing Research, Tamil Nadu College of Engineering, Coimbatore, India, ISBN: 978-1-4244-5966-7, Dec 2010.
- 32) Surekha P, P. RA. Mohanaraajan, Dr. S Sumathi, "A methodology to schedule and optimize job shop scheduling using computational intelligence paradigms", IEEE Int. Conf. Intelligent Control and Information Processing (ICICIP), China, ISBN: 978-1-4244-7047-1, pp.809-814, Sept 2010.
- 33) Surekha P, Yuvaraj P, Dr. S Sumathi, "An efficient optimization technique for digital watermarking in image processing", IEEE Int. Conf. Intelligent Control and Information Processing (ICICIP), China, ISBN: 978-1-4244-7047-1, pp.803-808, Sept 2010.
- 34) Surekha P, P. RA. Mohanaraajan, Dr. S Sumathi, "Planning, Scheduling and Optimizing Job Shop Scheduling Problem using Genetic Algorithm", International Conference on Innovative Research in Engineering and Technology (ICIRET-2010), PARK College of Engineering, India, August 2010.
- 35) Surekha P, Yuvaraj P, Dr. S Sumathi, "A Genetic Algorithm based Optimization Technique for Digital Image Watermark Embedding and Extraction", International



- Conference on Innovative Research in Engineering and Technology (ICIRET-2010), PARK College of Engineering, India, August 2010.
- 36) Surekha P and Dr. S Sumathi, "Soft-i-Robot: An Internet-Based Intelligent Multimedia Robot Security System Using Soft Computing Paradigms" in the 3rd International Conference on Artificial Intelligence in Engineering and Technology (ICAIET 2006) at University Malaysia Sabah, Kota Kinabalu on 22<sup>nd</sup> November, 2006.
  - 37) Surekha P and Dr. S. Sumathi., "Vision based intelligent mobile robot for face recognition and obstacle avoidance using Neural Networks and Genetic Algorithms", in the National Conference on Microelectronics and Communication at SRM University, Chennai on 24<sup>th</sup> and 25<sup>th</sup> August, 2007.
  - 38) Surekha P and Dr. S Sumathi, "A Soft Computing based Online Face Recognition system using a Robot as an Intelligent Surveillance Agent", in the National Conference on Soft Computing Techniques for Engineering Applications at NIT, Rourkela between 24<sup>th</sup> and 26<sup>th</sup> March, 2006.
  - 39) Surekha P and Dr. S Sumathi, "Hybrid Intelligent Mobile Robot with Video and Audio sensory agents Incorporating a Web Interface", in the National Conference on Modern Trends in Electrical and Electronic Systems at Government College of Engineering, Salem on 22<sup>nd</sup> and 23<sup>rd</sup> March 2006.
  - 40) Surekha P and Dr. S Sumathi, "A Soft Computing Approach to a Surveillance System based on Audio and Video sensory agents cooperating with a Mobile Robot", in the National Conference on Advanced Computing at MIT, Anna University, Chennai on 10<sup>th</sup> and 11<sup>th</sup> February 2006.
  - 41) Surekha P and Dr. S Sumathi, "Improvement of speed control of DC motor by Fuzzy PID tuning", in the National Conference NCIEES'05 at PSG College of Technology, Coimbatore on 24<sup>th</sup> and 25<sup>th</sup> June 2005.
  - 42) Surekha P and Dr. S Sumathi, "Image Segmentation using K-means Algorithms for Robots", in the National Conference NCIEES'05 at PSG College of Technology, Coimbatore on 24<sup>th</sup> and 25<sup>th</sup> June 2005.
  - 43) Surekha P and Dr. S Sumathi, "Internet based remote control using Rabbit Microcontroller and an Embedded Ethernet board", in the National level conference PEDC'05 at A.C College of Engineering and Technology, Karaikudi on 31<sup>st</sup> October, 2004.
  - 44) S.Prithi and Dr.S.Sumathi "Review on Grouping Algorithms for Finite State Automata" 5th International Conference on Innovative Research in Engineering Science and Management (ICIRESM-16) on 4th September 2016 ISBN: 978-81-932712-7-8
  - 45) S.Prithi and Dr.S.Sumathi "A Review on Deterministic Finite Automata Compression Strategies for Deep Packet Inspection", International Conference on "Latest Concepts in Science, Technology and Management (ICLCSTM-16), 19 June 2016
  - 46) Shuriya.B. and Dr.S.Sumathi "Study of an RBAC system" Indian Journal of Applied research, Vol 3, Issue 3, March 2013, ISSN 2249-555X
  - 47) V.Gomathy and Dr.S.Sumathi "Implementation of SVM using sequential minimal optimization for power transformer faults analysis using DGA" International journal of Computers and Technology, Vol 10, No.5 Aug 2013. ISSN 22773061
  - 48) P. Surekha, and Dr.S.Sumathi " A novel approach to solve unit commitment and economic load dispatch problem using IDE-OBL" International Journal of scientific and Industrial research, Vol 74, July 2015, PP 395-379.
  - 49) S.Prithi and Dr.S.Sumathi "A Review on Deterministic Finite Automata Compression Strategies for Deep Packet Inspection", International Journal of Innovations & Advancement in Computer Science IJIACS ISSN 2347 – 8616 Volume 5, Issue 6 June 2016

- 50) S.Prithi and Dr.S.Sumathi “Review on Grouping Algorithms for Finite State Automata” International Journal of Engineering Technology Science and Research IJETSR, ISSN 2394 – 3386 Volume 3, Issue 9 September 2016

### **SEMINARS / CONFERENCES ORGANISED**

- Organized AICTE-ISTE-STTP course on Soft computing models for engineering applications during March 28th-April 10th 2004.
- Organized AICTE-SDP on Introduction and applications of neuro fuzzy genetic systems during 17th to 30th Dec 2006.
- Organizing Secretary for the Second National conference on Intelligent and Efficient Electrical Systems 2005 (NCIEES 2005) during June 24 and 25 2005.
- Continuing Education Programme Conducted on “Neuro Fuzzy System Principles and Data Mining Applications”, November 2001.

### **SEMINARS / CONFERENCES ATTENDED**

#### **Courses attended:**

- ISTE Winter School on “**Recent Trends in Computer Communication**”, Organized by ECE Department, PSGCT, Coimbatore - 1 to 14 March, 1996.
- ISTE Winter School, IMPACT-IEP on “**Relational Data Base Management Systems**”, Organized by CSE Department, PSGCT, Coimbatore - February 17 to March 14, 1997.
- Dr.S.Sumathi attended TEQIP – II sponsored one week faculty development programme on Soft computing techniques for engineering research organised by Department of Information Technology, PSG college of Technology, Coimbatore during 18-24 July 2016.
- Dr.S.Sumathi attended TEQIP – II sponsored one week faculty development programme on Embedded and Real time software & systems organised by Department of Electrical and Electronics Engineering, PSG college of Technology, Coimbatore during 12-18 October 2014.
- Dr.S.Sumathi attended AICTE sponsored Two weeks faculty development programme on Emerging trends in computing-An academic, research and social perspective conducted by Department of Computer science and Engineering, PSG College of Technology, Coimbatore during May 13-26, 2013.
- Dr.S.Sumathi attended AICTE sponsored Two weeks Staff development programme on Research challenges and emerging trends in intelligent information retrieval conducted by Department of mathematics and Computer applications, Coimbatore during 21<sup>st</sup> April – 05<sup>th</sup> May 2012.
- Dr.S.Sumathi attended TEQIP sponsored one week faculty development programme on Engineering Solutions through MATLAB conducted by Department of Electrical Engineering, Government college of Technology, Coimbatore during 11-17 October 2012.
- Dr.S.Sumathi attended TEQIP – II sponsored one week faculty development programme on Sensor networks and cloud computing conducted by Department of Electronics and Communication Engineering, Government college of Technology, Coimbatore during 12<sup>th</sup> - 18<sup>th</sup> February 2013.
- Dr.S.Sumathi participated Two week ISTE Workshop on Introduction to Research methodologies conducted by Indian Institute of Technology, Bombay from 25<sup>th</sup> June to 04<sup>th</sup> July 2012.
- Dr.S.Sumathi participated IMPACT-IEP Course on "Computer Peripherals and Interfaces", Resource Centre -IIT, Bombay, Six Weeks from November 23rd 1992.

- Dr.S.Sumathi participated AICTE-ISTE Course on "Recent Trends in Computer Communication", organized by PSG College of Technology, during 1<sup>st</sup> to 14<sup>th</sup> March 1996.
- Dr.S.Sumathi participated AICTE-ISTE Course on "Relational Database Management Systems", during Feb 17<sup>th</sup> to March 14<sup>th</sup> 1997.
- Dr.S.Sumathi participated Continuing Engineering Education Programme (CEEP) Course on "Introduction to Multimedia", organized by PSG College of Technology during 07.01.99 to 05.02.1999 (Part Time)
- Dr.S.Sumathi participated AICTE-ISTE Course on "Wired and wireless Computer Communication", organized by PSG College of Technology during November 10<sup>th</sup> to 23<sup>rd</sup> 2002.

## SPECIAL LECTURES DELIVERED

- Lecture delivered in organized AICTE-ISTE-STTP course on Soft computing models for engineering applications during March 28<sup>th</sup>-April 10<sup>th</sup> 2004.
- Lecture delivered in organized AICTE-SDP on Introduction and applications of neuro fuzzy genetic systems during 17<sup>th</sup> to 30<sup>th</sup> Dec 2006.
- Lecture delivered in organized Continuing education programme Course on “**Neuro Fuzzy System Principles and Data Mining Applications**”, November 2001.

## AWARDS

### Details of Special Achievements & Awards

1. The ISTE awarded a Certificate of Achievement – National Award for having guided M.Tech Thesis (II Prize) titled “Programmable Logic Controller for Microcontroller based two post screw Auto Lift”, Submitted by S.N.Deepa – 2004.
2. Prestigious gold medal from the Institution of Engineers Journal Computer Engineering Division for the research paper titled “Development of New Soft Computing Models for Data Mining” Dec 2002.
3. Best Project Award for UG Technical Report titled “Self-Organized Neural Network Schemes as a Data Mining Tool” – 2001.
4. Profile has been considered as a noted and eminent professional in the field of Engineering and is nominated as member of IBC, “OUTSTANDING SCIENTISTS of the WORLD 2008”, Sponsored and administered by the International Biographical Centre, Cambridge, England.
5. Profile has been considered as a noted and eminent professional in the field of Engineering and is nominated as member of IBC, “OUTSTANDING INTELLECTUALS OF THE 21<sup>st</sup> CENTURY 2009/2010”, Sponsored and administered by the International Biographical Centre, Cambridge, England.
6. Recipient of “CERTIFICATE OF MERIT FOR 2005-2006” award from The Institution of Engineers (India) for the paper entitled “Design of Soft Computing Neuro Models for Data Mining Applications” published in the Journal of the Institution of Engineers (India).
7. Recipient of Dr. R. Sundaramoorthy Award for outstanding Academic of PSG College of Technology for year 2006.
8. Biographical Profile included in “MARQUIS” Who’s Who in Science and Engineering, December 2007 Edition, NJ, USA.

## **DOCTORAL GUIDANCE / SUPERVISION**

**Number of Ph.D under progress : 5**

**Number of Ph.D Completed : 5**