The IEEE PES / IAS / PELS Joint Chapter, Hyderabad

is jointly organizing with

IEEE Computational Intelligence Society Chapter, Hyderabad

A Technical Lecture on

Application of Artificial Neural Networks & Soft Computing Techniques to Engineering World Problems

Date: Saturday, January 25, 2014
Venue: Kamat Lingapur Hotel,
lane opposite to Shopper’s Stop, Begumpet,
Hyderabad
Ph: 9705038000
Time: 15:00 PM – 16:30 PM
Speakers: Dr. K. S. Madhavan
Sr. Deputy General Manager,
Corporate Research and Development at BHEL, Hyderabad, India

The talk would start with a brief introduction to Artificial Neural Networks (ANN) and extend to the Applications of ANN to engineering world problems especially relevant to BHEL. The talk would also cover evolutionary algorithms of interest and would extend to the applications of Genetic Algorithms and Genetic Programming that have been used in BHEL for solving problems of relevance to BHEL products.

The Applications of ANN would include:

1. Character Recognition using neural networks
3. Incipient fault diagnosis of Transformers using Dissolved Gas Analysis and Neural Networks (PNN)
4. Partial Discharge Classification of 145 kV GIS (PNN)
5. Prediction of fault probabilities of Rotating Machinery (GRNN)
6. Estimation of Degree of Polymerization and Residual Age of Transformers Based on Furfural Levels in Insulating Oil through Generalized Regression Neural Networks
7. Evaluation of Gas turbine Control Constants
8. Boiler Performance Analysis and development of an ANN tool to predict Re Heater and Super Heater sprays in the boiler
9. NOx Emission Prediction from Utility Boilers and development of an ANN tool for the same

The talk would also include application of Genetic Algorithm for burner tilt optimisation of boiler and application of genetic programming to estimate the heat transfer correlation in boiler tubes under supercritical conditions.

**Speaker Profile:**

**Dr. K. S. Madhavan** is presently working as Sr. Deputy General Manager, Corporate Research and Development at BHEL, Hyderabad. He Graduated in Electrical Engineering from IIT Madras in the year 1986. He completed his MBA in Operations Management from IGNOU in the year 1999 and completed his D.Sc in Computer Science from Rochville University, Maryland in 2008. After a brief stint in TCS in the consultancy division in the beginning of his career and another stint as M. Tech Computer Science student at ISI Kolkata, he joined BHEL at Bhopal in the year 1988. He has extensive experience in BHEL in Manufacturing, Performance Evaluation Software and R&D. At BHEL (R&D) he is involved in the development of Artificial Neural Network (ANN) based systems for a variety of engineering applications including residual life assessment studies of transformers. He also has allied interests in Network Simulation; Machine learning, Case Based Reasoning, Speech Processing, Information Theory, Triple Modular Redundancy, Reliability Modelling, Gas Turbine control and Boiler Performance Prediction. He is currently working in the area of Power System Automation. He has a number of national and international publications to his credit in the areas of Neural Networks, Networking and Reliability Prediction. He was a reviewer in the National Advisory Committee of TENCON 2003. He is a Senior Member of the Computer Society of India and Member SIGAI. He is a Life Member of the Association of British Scholars. He is a Member of IEEE and the Industry Applications Society. He is also Member of the ACM. He has delivered guest lectures on ANN in a few engineering colleges spanning the states of Andhra Pradesh and Tamil Nadu. He has chaired two sessions on Data Mining at the International Conference on Data Management held at Institute of Management Technology, Ghaziabad. He was Chief Guest Southern Regional Conference on Embedded and Real Time Computing Systems held at National Engineering College, Kovilpatti and also Chief Guest for ICEECE & ICARME conference held by the Interscience Research Network at Ahmedabad in 2012.

**Entry Process:**

Lecture is open to all professionals and students.

Please write to us if you have any questions or concerns.

**Dr. Amit Jain**  
Chair, PES/IAS/PELS Joint Chapter  
IEEE Hyderabad Section
Queries to be directed to:

Mr. Santosh Kumar Kukkadapu  
Secretary, IEEE PES/IAS/PELS joint chapter, Hyderabad Section  
Email: santosh3581@gmail.com

For Queries about Venue location:  
Mr Rajesh Kumar: +91-9705038000  
Manager Food & Beverage, Kamat Lingapur Hotel