Multi-Disciplinary International Workshop on Artificial Intelligence (MIWAI-2011)

(8th December and 9th December 2011)

Venue: C. V. Raman Auditorium, Science Complex, University of Hyderabad, India

Technical Programme Schedule

8th December 2011

8:00 A.M to 9:00 A.M:	Registration
9:00 A.M to 10:00 A.M:	Inauguration
10:00 A.M to 11:00 A.M:	Keynote talk: Prof. B. Chandrasekaran "Diagrammatic Reasoning: Giving Perception Its Due in Thinking" Chair: Prof. B. Yegnanarayana
11:00 A.M to 11:30 A.M:	Tea Break
11:30 A.M to 1:00 P.M:	Technical Session-1 (Six papers) Session Chair: Prof. M N Murty

1. Handwritten Kannada Vowel Character Recognition using Crack codes and Fourier Descriptors (Ganapatsingh Rajput and Rajeshwari Horakeri)
2. A Rule-based Approach to Form Mathematical Symbols in Printed Mathematical Expressions (P Pavan Kumar, Arun Agarwal and Chakravarthy Bhagvati)
3. PCA plus LDA on Wavelet co-occurrence histogram features: Application to CBIR (S Shivashankar, Vasudev K Parvati, Jagadeesh D Pujari and Sachin S Veerashetty)
4. Printed Text Characterization for Identifying Print Technology using Expectation Maximization Algorithm (Uma Devi Maramreddy, Arun Agarwal and C Raghavendra Rao)
5. A shape representation scheme for hand-drawn symbol recognition (Viswanath Pulabaigari, Gokaramaiah T and Prabhakar Gouripeddi)
6. Distributed Methodology of CanTree Construction (Swarupa Rani and Raghavendra Rao C.)

1:00P.M to 2:00 P.M:	Lunch Break
2:00 P.M to 3:00 P.M:	Invited Talk-1: Prof. Sheela Ramanna Chair: Dr. Chattrakul Sombattheera

3:00 P.M to 4:00 P.M: Technical Session-2 (Four papers)
                         Session Chair: Dr. Tho Quan

1. Fibred BDI Logics: Completeness Preservation in the presence of Interaction Axioms (Vineet Padmanabhan, Guido Governatori and Abdul Sattar)
2. Formalizing and Reasoning with P3P Policies Using a Semantic Web Ontology Boontawee (Suntisrivaraporn and Assadarat Khurat)
3. Gibbs Sampling with Deterministic Dependencies (Oliver Gries)
4. Structural Distance Between EL+ Concepts (Boontawee Suntisrivaraporn)

4:00 P.M to 4:30 P.M   Tea Break

4:30 P.M to 6:00 P.M: Technical Session-3 (Six papers)
                         Session Chair: Prof. Pawan Lingras

1. Enhancing Cooperation in Distributed Information Systems using Conviviality and Multi-Context Systems (Patrice Caire and Antonis Bikakis)
2. A Rule based Approach to Group Recommender Systems (Vineet Padmanabhan, Sivakrishna Seemala and Wilson Naik)
3. Combining Collaborative Filtering and Sentiment Classification for Improved Movie Recommendations (Vivek Kumar Singh, Mousumi Mukherjee and Ghanshyam Kumar Mehta)
4. Typhon - A Mobile Agent Framework For Real World Emulation in Prolog (Jatin Matani and Shivashankar Nair)
5. Optimal Service Composition via Agent-Based Task Allocation (Chattrakul Sombattheera)
6. Compromise Matching in P2P e-Marketplaces: Concept, Algorithm and Use Case (Manish Joshi, Virendrakumar C. Bhavsar and Harold Bole)

6:00 P.M to 9:00 P.M: Cultural Programme and Conference Banquet dinner

9th December 2011

9:00 A.M to 10:00 A.M: Invited Talk-2: Dr. Karthik Visweswariah/Dr Manish Gupta
                                          Chair: Prof. Sheela Ramanna

10:00 A.M to 11:00 A.M: Technical Session-4 (Four papers)
                                          Session Chair: Dr. V Ravi

1. Data Clustering Using Modified Fuzzy-PSO (MFPSO) (Suresh Satapathy)
2. Crisp and soft clustering of mobile calls (Pawan Lingras, Parag Bhalachandra, Santosh Khamitkar, Satish Mekewad and Ravindra Rathod)
3. Fuzzy-based Trusted Ant Routing (FTAR) Protocol in Mobile Ad hoc Networks (Srinivas Sethi and Siba K. Udgata)
4. Swarm Intelligence based Localization in Wireless Sensor Network (Lavanya Dama and Siba K. Udgata)

11:00 A.M to 11:30 A.M: Tea Break

11:30 A.M to 1:00 P.M: Technical Session-5 (Six papers)
                                          Session Chair: Dr. Boontawee Suntisrivaraporn

1. Extensions to IQuickReduct (Sai Prasad P.S.V.S and Raghavendra Rao C.)
2. Forecasting Using Rules Extracted from Privacy Preserving Neural Network (Naveen Nekuri, Vadlamani Ravi and Raghavendrarao Chillarige)
3. A Modified Harmony Search Threshold Accepting Hybrid Optimization Algorithm (Maheshkumar Yeturu and Vadlamani Ravi)
4. Local and global intrinsic dimensionality estimation for better chemical space representation (Mohammed Hussein Shukur, Sobha Rani T, Durga Bhavani S, G Narahari Sastry and Raju Surampudi Bapi)
5. A Resilient Voting Scheme for Improving Secondary Structure Prediction (Chittaranjan Hota, Filippo Ledda and Giuliano Armano)
6. Differential Evolution algorithm for motion estimation (Samrat Sabat, Shravan Kumar and Rangababu P.)

1:00 P.M to 2:00 P.M: Lunch Break

2:00 P.M to 3:15 P.M: Technical Session-6 (Five papers)
                                          Session Chair: Dr. Shivashankar Nair

1. Automatic Composition and Mediation on Multiple-Language Semantic Web Services (Tho Quan, Cach Dang, Ngan Le, Chattrakul Sombattheera and Vu Lam)
2. On modeling the affective effect on learning Arunkumar Balakrishnan
3. Association Rule Centric Clustering of Web Search Results (Hima Bindu K. and Raghavendra Rao C.)
4. Investigative Behavior Profiling With One Class SVM For Computer Forensics (Wilson Naik Bhukya)
5. Reasoning about DNSSEC (Ramesh Babu, Vineet Padmanabhan and Wilson Naik)

3:15 P.M to 3:45 P.M: Tea Break

3:45 P.M to 5:00 P.M: Technical Session-7: (Five papers)
                               Session Chair: Prof. V N Sastry

1   Pattern synthesis using fuzzy partitions of the feature set for nearest neighbor classifier design (Viswanath Pulabaigari, Chennakesalu S, Rajkumar R and Raja Sekhar M)
2   Online assignments of containers to trains using constraint programming (Aggoun Abder and Ahmed Rhiat)
3   A binary-real-coded differential evolution for unit commitment problem: a preliminary study (Saptarshi Dutta and Dilip Datta)
4   Machine Learning Based Performance Prediction for Multi-core Simulation (Jitendra Kumar Rai, Atul Negi and Rajeev Wankar)
5   New Replica Selection Broker for Binding Replica Sites in DataGrid environment (Rafah M. Almuttairi, Rajeev Wankar, Atul Negi and C.R. Rao)

5:00 P.M to 5:30 P.M   Valedictory

Dr. B. Chandrasekaran (Keynote Speaker)

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Brief Biography:

B. Chandrasekaran is Professor Emeritus, Senior Research Scientist and Director of the Laboratory for AI Research in the Department of Computer & Information Science at Ohio State University. His major research activities have been in knowledge-based reasoning (especially causal understanding as applied to design and diagnosis), image-based reasoning, architecture of mind, and cognitive science. His work on generic tasks in knowledge-based systems is among the most heavily cited in recent research in the area of knowledge-based systems, as is his work on engineering design and functional reasoning. His current focus is on causal understanding and use of images in problem solving. Chandrasekaran was Editor-in-Chief of IEEE Expert from 1990 to 1994. He co-edited Diagrammatic Reasoning: Cognitive and Computational Perspectives (AAAI Press/ The MIT Press, 1995). From July 2001-Dec 2009, he was part of the US Army Research Laboratories Collaborative
Technology Alliance on Advanced Decision Architectures, which supported his group's research on diagrammatic reasoning, decision architectures and information fusion. He has been elected Fellow of IEEE, AAAI and ACM.

Title: Diagrammatic Reasoning: Giving Perception Its Due in Thinking

Abstract: AI and cognitive science by and large subscribe to the "Language of Thought" hypothesis, which treats thinking as taking place on a representational substrate made up expressions composed of symbolic predicates. Thus, in much AI work on problem solving as goal-directed reasoning, goals, knowledge, and problem states are all taken to be such representations. On the other hand, phenomenological accounts of our own thought reveal that the cognitive state is multi-modal: In addition to the linguistic component, we also experience, as part of our cognitive state, perceptual images in different modalities. In this talk, I focus on diagrammatic reasoning as a window into general multi-modal cognition. External representations in the form of diagrams are ubiquitous in modern cultures. Cognitive architectures, such as Soar and Act-R, view cognition entirely within the framework of predicate-symbolic representations. However, even when using external diagrams, diagrammatic reasoning calls for the construction of internal diagrams, i.e., diagrammatic imagination. In this talk, I describe DRS, a representation framework that we have been developing for a number of years, to support diagrammatic reasoning and imagination. The work on diagrammatic representations suggests what a more fully developed multi-modal cognitive architecture would look like.

Dr. Sheela Ramanna (Invited Speaker)

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Sheela Ramanna is a Full Professor and head of the Applied Computer Science Department at the University of Winnipeg. She received a Ph.D. in Computer Science from Kansas State University, U.S.A. and a B.E. in Electrical Engineering and M.Tech. in Computer Science and Engineering from Osmania University, Hyderabad, India. She is the Managing Editor for Springer Transactions on Rough Sets Journal (TRS). She serves on the Editorial Board of TRS, Journal of Intelligent Decision Technology (IOS Press), Int. Journal of Advanced Intelligent Paradigms (Inderscience), and Journal of Agents and Multi-Agent Systems. She served as Program Co-Chair for RSKT2011, RSCTC2010 and JRS2007. She is currently co-editing a Springer book on Emerging Paradigms in Machine Learning. Her paper on rough control co-authored with James F. Peters received the IFAC Best Paper Award in 1998. She has served on numerous program committees for international conferences and is a reviewer for several international journals. She has published numerous articles on the theory and application of computational intelligence techniques (rough and near sets, fuzzy sets and neural networks) in journals, conferences, books and edited volumes. She is a member of the Computational Intelligence Laboratory at the University of Manitoba (http://wren.ece.umanitoba.ca/). Her current research interests are focused on computational intelligence techniques in designing perceptual systems.

Title: Sufficiently Near Neighbourhoods in Pattern Analysis

Abstract: The focus of this talk is on the discovery of approaches in determining nearness (or apartness) of sets of neighbourhoods of points. This discovery process hinges on the recognition of the importance of object descriptions. A particular object description is represented by a feature vector. A determination of sufficient nearness results from considering the distance between descriptions of members in sets of objects to determine the perceived similarity or dissimilarity of the sets. This study has important implications in M. Katetov's approach to topologising the part of a set. The Lowen form of an approach space and the more recent Naimpally-Peters-Tiwari generalised approach space are briefly explained. Two forms of Cech distance are given in this talk (location-based and description-based). This leads to two forms of neighbourhoods of points, namely, traditional spherical (location-based) neighbourhoods from topology and new description-based neighbourhoods of points. A spherical neighbourhood has a center, whereas a description-based neighbourhood has a reference point. A pair of neighbourhoods of points is sufficiently near (apart), provided that the Cech distance between the neighbourhoods is less than (greater than) some number ε. Patterns emerge from the study of sets of neighbourhoods that are sufficiently near or apart, depending on the choice of neighbourhood reference points, radii and extracted features. Some applications such as as detecting anomalies in power system equipment, visual arts (paintings), nearness of rough sets, and content-based image retrieval (CBIR) will be discussed.

Dr. Karthik Visweswariah (Invited Speaker)

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Karthik Visweswariah is a Senior Technical Staff Member at IBM Research, India. His primary interests are in statistical modelling applied to text and speech. Prior to joining IBM Research, India in 2008 he spent 8 years at IBM's T.J. Watson Research Centre in the Human Language Technologies group working on improving speech recognition technologies in IBM's products. His current focus is on improving machine translation for translating between Indian languages and English. He has published over 60 papers in these areas in various refereed journals and conferences. He obtained his Ph.D from Princeton University in 1999 and B.Tech from Indian Institute of Technology, Madras.

Title: Building Watson: An overview of the DeepQA project

Abstract: A computer system that aims to beat the best humans at the Jeopardy challenge needs to be able to provide high precision answers to open domain questions in under three seconds while knowing when it knows. In this talk, we will briefly describe the Jeopardy challenge and give an overview of the DeepQA architecture that enables high precision and speed by using a highly parallel architecture capable of generating and evaluating evidence for thousands of hypotheses.