The Third International Conference on Hybrid Intelligent Systems

http://his03.hybridsystem.com

14-17, December 2003
Melbourne, Australia

Advanced Programme and Call for Participation

Honorary Chair's Welcome Message

People have developed computer algorithms and heuristics for problem solving for decades. Much of this time was spent "proving" that one method was better than another, or that a particular method would perform optimally, in theory. As the famous saying states: "In theory, theory is the same as in practice. But in practice, it isn't." This truth has now become well recognized: Perfect solutions are no longer the goal in real-world problem solving, rather solutions are needed that are simply good enough and achieved in a short enough amount of time to be useful. To that end, efforts are now being made in earnest to examine the properties of diverse problem-solving techniques and search for ways to hybridize them for more effective and efficient procedures.

This Third International Conference on Hybrid Intelligent Systems (HIS'03) offers much vital information to the problem-solving practitioner. The topics of neural networks, evolutionary computation, fuzzy systems, support vector machines, clustering, classification, and others will undoubtedly be familiar. What is unfamiliar is the degree to which combinations of these methods and other techniques can be applied to a wide range of problems, which is evidenced in these proceedings. There remains the challenge of generalizing from problem to problem, understanding what it is that makes an approach effective in a particular setting and porting that approach to a new setting effectively. The papers offered here serve as data points for future data mining, as we endeavor to garner insight into how to craft the best combinations of approaches to our own problems.

It's my pleasure to serve as the honorary chair of this event. I am especially pleased that this conference is taking place in Melbourne, Australia, where fifty percent of my genes got their start. We are all hybrids, after all. It is an exciting time, for even as the perceived rate of advance in the core methods of computational intelligence may appear to be slowing, the rate of advance in combining these techniques and addressing some of the most important issues and challenges we face continues to accelerate. I look forward to hybridizing that excitement with you at HIS'03.

Sincerely,

David B. Fogel
Honorary Chair, HIS'03
Natural Selection, Inc. – USA

Welcome Message

Hybridization of intelligent systems is a promising research field concerned with the development of the next generation of intelligent systems. A fundamental stimulus to the investigations of Hybrid Intelligent Systems (HIS) is the awareness in the academic communities that combined approaches will be necessary if the remaining tough problems in artificial intelligence are to be solved. Recently, hybrid intelligent systems are getting popular due to their capabilities in handling several real world complexities involving imprecision, uncertainty and vagueness. Current research interests in this field focus on integration of the different computing paradigms like fuzzy logic, neurocomputation, evolutionary computation, probabilistic computing, intelligent agents, machine learning, other intelligent computing frameworks and so on. The phenomenal growth of hybrid intelligent systems and related topics has created the need for this International conference as a venue to present the latest research. HIS'03 builds on the success of last year's. HIS'02 was held in Santiago, Chile, 01-04, December 2002 and attracted participants from over 26 countries.

HIS'03, the Third International Conference on Hybrid Intelligent Systems, will be held in Melbourne, Australia, December 14-17, 2003, addressing the following eight important themes:

- Hybrid Intelligent Systems Architectures and Applications
- Soft Computing for Image and Signal Processing
- Intelligent Internet Modeling, Communication and Networking
- Intelligent Data Mining
- Intelligent Business Systems
- Soft Computing for Control and Automation
- Multi-agent Systems
- Knowledge Management

HIS'03 is technically co-sponsored by IEEE Systems Man and Cybernetics Society, International Fuzzy Systems Association, The World Federation on Soft Computing, ENNS (European Neural Network Society), EUSFLAT (European Society for Fuzzy Logic and Technology), EVONET (European Network of Excellence in Evolutionary Computing), Australian Computer Society, IEEE Region 5 and IOS Press. HIS'03 program committee represented 21 countries on 5 continents and authors submitted over 200 papers from 32 countries on 5 continents. This certainly attests to the widespread, international importance of the theme of the conference. Each paper was peer reviewed by at least two independent referees of the program committee and based on the recommendation of the reviewers 114 papers were finally accepted. HIS'03 also received 3 technical sessions and 8 tutorial proposals addressing different aspects of intelligent systems and applications.

HIS'03 is blessed to have the following plenary speakers:

- David B. Fogel, *Hybrid Computational Intelligence with Evolutionary Computation and Object Neural Networks*
- Graham Williams, *Mining the Data Stream*
- David Corne, *Bioalgorithmics: Evolutionary and Other Algorithms ex Silico*
- Nikhil Pal, *On-Line Feature and Sensor Selection - The Way to Go*
- Liz Sonenberg, *Agent Deliberation in a Sensor Rich World*
- Rajkumar Roy, *Integrating Quantitative and Qualitative Information in Design Optimisation: A Soft Computing Approach*

We would like to express our sincere gratitude to all the authors and members of the program and local organizing committees that has contributed towards the success of this conference. Our special thanks also to the plenary speakers and tutorial presenters for their effort in preparing the lectures.

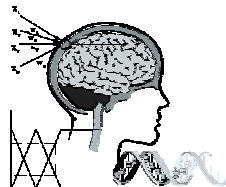We look forward to seeing you in Melbourne during HIS'03, (14-17) December 2003

Ajith Abraham and Mario Köppen *(General Chairs)*   November 2003
Kate Smith and Lakhmi Jain *(Program Chairs)*

HIS'03 Technical Co-Sponsors

IEEE — IEEE Systems, Man, and Cybernetics Society

World Federation Soft Computing

ENNS
European Neural Network Society

EUSFLAT — EUROPEAN SOCIETY FOR FUZZY LOGIC AND TECHNOLOGY

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HIS'03 - Program at a Glance

The program for this conference consists of a morning session, and an afternoon session, each of 3-4 hours duration arranged in 3 parallel tracks over three days (Monday, December 15, Tuesday, December 16 and Wednesday, December 17), 4-5 papers of 25 minutes duration each will be presented in each session. There will be over 110 papers presented at the conference from a total submission of over 200 manuscripts. Nine tutorials are offered on Sunday, December 14. Six plenary lectures are presented by distinguished researchers in the field of hybrid intelligent systems, two each (morning and evening) on all the three conference days. Conference banquet will be held on Tuesday after the evening session at the Melbourne Aquarium.

Venue: Monash Conference Centre
Level 7, 30 Collins Street, Melbourne
Phone: +61 3 9903 8000
Fax: +61 3 9903 8052

Please note:

- Conference registration desk is in the foyer area.
- All plenary sessions, opening and closing addresses will be held in seminar room 2+3 (large room)
- 3 Parallel tracks will be held in seminar rooms 1, 2, and 3.
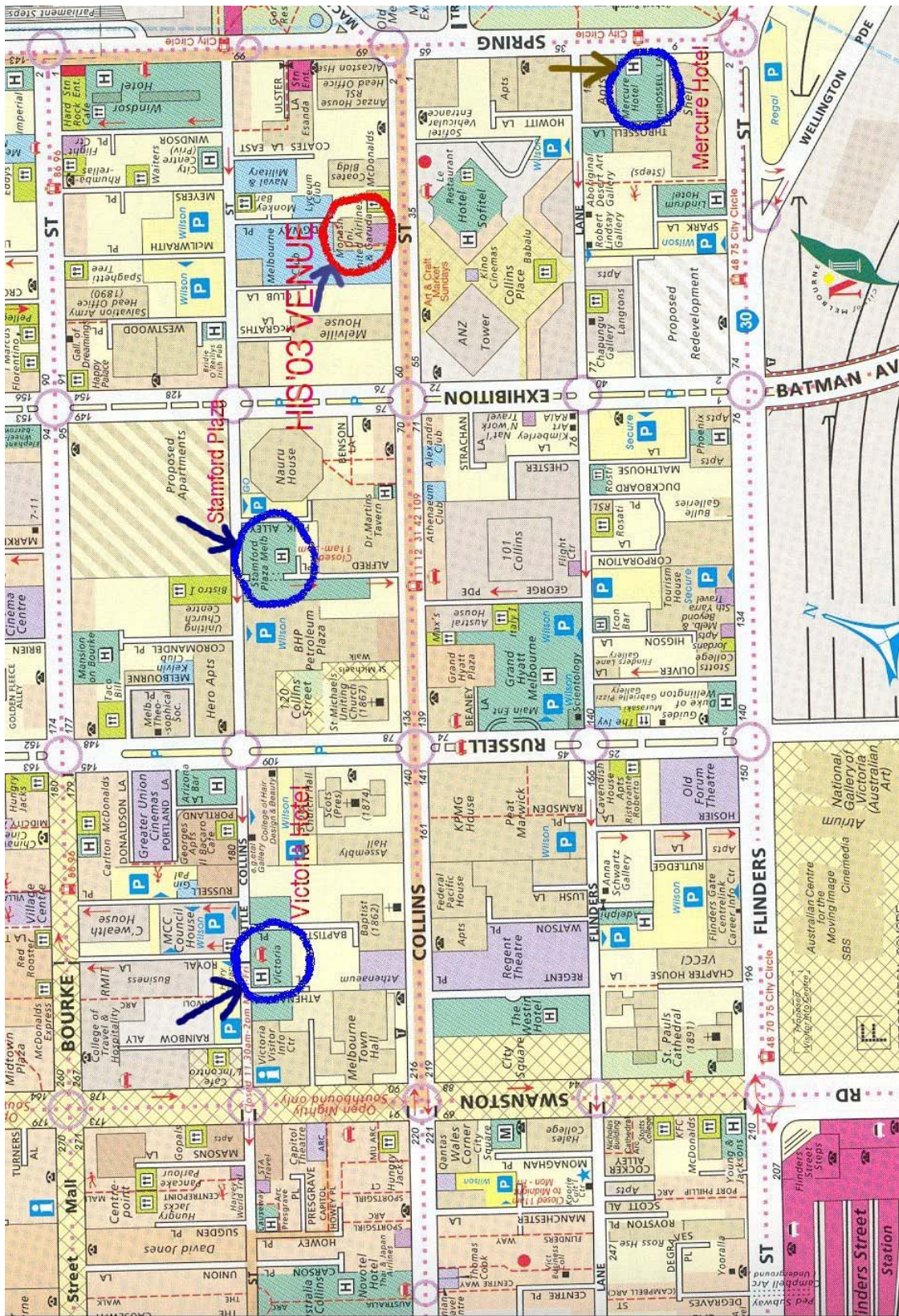
Conference hotels are marked in blue circles and the HIS'03 venue in red

HIS'03: Plenary Abstracts

Plenary Talk - I

Hybrid Computational Intelligence with Evolutionary Computation and Object Neural Networks

David B. Fogel, Natural Selection, Inc., USA

Abstract

Evolutionary computation provides a basis for computer self-learning in the absence of human expertise. Evolutionary algorithms can be combined usefully with diverse other structures and methods of computational intelligence and AI to optimize performance, adapt to changing circumstances, and meet goals in a range of environments. Experiments with "Blondie24" have recently shown that an evolutionary algorithm can be combined with neural networks to learn to play checkers (draughts) at a level that is comparable with human experts, even without relying on human expertise in selecting features to evaluate alternative positions. The results from this Blondie24 project will be reviewed. New efforts that extend the approach to evolving object neural networks, which focus on specific areas of concern as defined by human expertise, in the game of chess will be detailed. The potential for allowing an evolutionary process to learn how to focus its attention without human guidance will be discussed. Members in the audience will have the opportunity to challenge Blondie24 to a game of checkers, and may also have the opportunity to compete against chess program that has evolved to the master level of competition.

Bio

Dr. David B. Fogel is chief executive officer of Natural Selection, Inc. His experience includes over 17 years of applying computational intelligence methods and statistical experimental design to real-world problems in industry, medicine, and defense. Prior to joining Natural Selection, Inc. in 1993, he was a Systems Analyst for Titan Systems, Inc. (1984-1988), and a Senior Principal Engineer at ORINCON Corporation (1988-1993). He received the Ph.D. in engineering sciences from the University of California at San Diego in 1992, and has subsequently taught undergraduate and graduate courses in evolutionary computation, stochastic processes, and statistical process control. Dr. Fogel has over 200 publications in the technical literature, the majority treating the science and application of evolutionary computation. He is the author or co-author of six books, including Blondie24: Playing at the Edge of AI, 2002 and How to Solve It: Modern Heuristics. Dr. Fogel served as the founding editor-in-chief of the IEEE Transactions on Evolutionary Computation (1996-2002). He was the founding president of the Evolutionary Programming Society (1991-1993) and was elected a Fellow of the IEEE in 1999. He also serves as the editor-in-chief of BioSystems, and is on the editorial boards of several other technical journals. Dr. Fogel served as the general chairman for the 2002 IEEE World Congress on Computational Intelligence, held in Honolulu, Hawaii, May 12-17, 2002, and was program chair for the First IEEE Symposium on Combinations of Evolutionary Computation and Neural Networks, May 11-12, 2000, San Antonio, TX. He received the 2002 Sigma Xi Southwest Regional Young Investigator Award, the 2003 Sigma Xi San Diego Section Award for Distinguished Achievement, the 2003 SPIE Computational Intelligence Pioneer Award, and will receive the 2004 IEEE Kiyo Tomiyasu Technical Field Award next summer.

Plenary Talk II

Mining the Data Stream

Graham Williams, CSIRO Data Mining, Australia

Abstract

Data Streaming involves processing data as it becomes available. Generally there is only a single chance to see the data. Such a scenario is becoming more common given the growing amount of data being collected. Streaming presents a number of interesting challenges for Data Mining, and can be considered more than just iterative model building. In this talk we will discuss in particular the temporal aspect that is inherent in stream data mining and review and investigate suitable ananlysis techniques. The talk will be grounded in actual applications in administrative data mining, particularly in health care and insurance data.

Bio

Dr Graham Williams is principal computer scientist, CSIRO Data Mining. Graham has lead many data mining projects for clients including the Health Insurance Commission, the Australian Taxation Office, the Commonwealth Bank, NRMA Insurance Limited, and the Federal Department of Health and Ageing. He has developed software and hardware environments for data mining, and implemented web services for the delivery of data mining. Developments include HotSpots for identifying target areas in very large data collections and WebDM for the delivery of data mining services over the web. Graham is involved in numerous international artificial intelligence and data mining research activities and conferences. He has worked with collaborators in Europe, Asia, and the US. His research interests cover many aspects of artificial intelligence, data mining and very large databases, including linked health data, spatio-temporal data mining, evolutionary rule induction, agent systems, web services, machine learning, and GNU/Linux. He has editted a number of books and has authored many academic and industry papers. Graham's PhD (Australian National University, 1991) introduced the then novel idea of combining multiple predictive models for the better understanding of data and predictive capability. The thesis explored algorithms for building multiple decision trees from a source data set (land use data) and combining those decision trees. Graham has worked for a number of organisations including: CSIRO Land and Water in Canberra, Australia, developing award wining spatial expert systems (using Prolog); BBJ Computers in Melbourne, Australia, as Research and Development manager and then Marketing Manager, overseeing the implementation of a data mining tool for integration with a 4GL database environment; Vish Corporation, developing one of the first and one of the longest running Expert Systems for Esanda Finance, Melbourne, Australia; and the Australian National University, Canberra, lecturing in Database Systems, Machine Learning, Data Mining, and Software Engineering.

Plenary Talk III

Bioalgorithmics: Evolutionary and other algorithms ex silico

David Corne, University of Exeter, UK

Abstract

"Bioalgorithmics" encompasses the interdisciplinary science of computation with biological substrates, as well as in silico algorithms inspired from nature and the use of intelligent computation on biological problems. In this talk we focus on the former, which concerns algorithms implemented ex silico; that is, computations performed by or with DNA, cells, proteins and other biomolecules. This includes the familiar notion of DNA computing, as well as the new sciences of protein, cellular and molecular computing, and the directed evolution, via evolutionary algorithms implemented in high-throughput biological processes, of novel proteins. By exploiting the computational capabilities of biomolecules, and the discovery power of evolutionary search, developments in bioalgorithmic technologies are set to have major impact in health, pharmaceuticals, materials, and more.

Bio

David Corne occupies a Chair in Computer Science (from September 2003) at the University of Exeter, United Kingdom, where his group works across the scope of bioalgorithmics, with projects in bioinformatics, evolutionary (and other bio-inspired) computing, molecular computing and directed evolution. Following degrees in Mathematics and Artficial Intelligence (respectively), he was a researcher at the Department of Artificial Intelligence, University of Edinburgh for six years, working first on intelligent design support systems (with Tim Smithers), and then on evolutionary scheduling and timetabling (with Peter Ross and Hsiao-Lan Fang), producing some early and influential ideas and techniques which have since become common in such applications. He moved to the University of Reading in 1995, and built up a track record in various aspects and applications of evolutionary computation, notably new algorithms and theory in evolutionary multiobjective optimisation (with Joshua Knowles), novel observations on evolutionary algorithm dynamics and parameterisation (with Martin Oates), new pattern discovery techniques in bioinformatics (with Andrew Meade and Richard Sibly), and new theory and modelling techniques with particular relevance to Directed Evolution (with Douglas Kell and Martin Oates). He has also published (with various), on applications of evolutionary computation, neural computation, and immune systems methods in cancer radiotherapy, database management, data mining, DNA sequencing, phylogeny, pipeline routing, telecommunications routing, refrigeration system management, and web intelligence. He is a member of the UK EPSRC Peer Review College, editorial board member for six journals, steering committee member for two international conference series, and programme committee member for about six conferences per year. Lately, per annum, he writes/co-writes about 12 articles, and reviews about 120.

Plenary Talk IV

ON-LINE Feature and sensor selection - the way to go

Nikhil Pal, Indian Statistical Institute, India

Abstract

An important goal of designing intelligent systems is to honor two principles of design: use of minimum information and use of minimum description length. If we can use only the features that are adequate for the task at hand, we move a few steps to honor the two stated principles. So feature selection is very important. Feature selection methods are primarily "off-line" in nature and they ignore the fact that the quality (importance) of a feature depends on the TOOL being used and the PROBLEM being solved. So we introduce a novel concept of "ON-LINE" feature selection where the system picks up the required features along with training of the system. In this context, we will explain three systems. The first system is designed for multi-layer perceptron type networks. The system is applicable to both classification and function approximation type problems. The second system is built based on a neuro-fuzzy framework for solving function approximation type problems. This system is then modified for dealing with classification type problems. There is another important related problem, selection of sensors. For many applications, the input comes from different sensors. For example, in case of an intelligent weld inspection system, the sensors could be X-ray image, Acoustic emission, eddy current and so on. The signal obtained from each sensor is used to compute several features; eg., the X-ray image can be used to compute several co-occurrence based features. In such cases, a more challenging problem comes - selection of sensors (in other words, selection of groups of features, where each group is computed using the signal obtained from a particular sensor). Clearly, if the number of necessary sensors can be reduced, the hardware cost of the system, the design complexity of the system and the cost (both in terms of time and money) of decision making can be drastically reduced. We will discuss two systems for online sensor selection. The first approach is applicable to multi-layer perceptron type networks while the second method is for radial basis function type network.

Plenary Talk IV

Integrating Quantitative and Qualitative Information in Design Optimisation: A Soft Computing Approach

Rajkumar Roy and Victor Oduguwa, University of Cranfield, UK

Abstract

When solving a real life engineering design problem, engineers strive to ensure that the obtained results are sufficiently real in order to apply them in practice. The quest to achieve this realism in engineering solutions is still generating enormous research interest from various fields. It is widely accepted that Quantitative (Q^T) and Qualitative (Q^L) information is an intrinsic feature engineering design optimisation. However, it is surprising that the use Q^L models in design optimisation problem are not as common as Q^T models. This could become a problem if Q^T based models are not available or are partially defined. There are various instances where both type of information are equally important for decision-making and yet solutions are merely solved based only on the Q^T model. For example, in deciding possible solutions in terms of the likely quality of a hot rolled steel (perceived from the colour of the hot steel) and the cost of increasing the process performance. Here, practitioners reducing the problem formulation to cost related behaviour bias could end up with unrealistic solutions.

Although robust methods such as statistical methods and evolutionary based approaches are emerging as solution alternative for engineering design problems, there are still limited efforts in combining Q^T and Q^L information for engineering design optimisation. Cranfield approach for addressing this problem is based on hybrid combination of evolutionary computing techniques and fuzzy logic. This elaborate approach adopts the principle of multi-objective optimisation to explore the functional relationship between the Q^T and Q^L information. Here, is it assumed that the design objective is conflicting in nature which suggests that Pareto front is present in the problem (Oduguwa, 2003). From the Fuzzy logic models both the membership function values and the deffuzzified domain values were used as fitness function values in the optimisation algorithm to guide the search. The optimisation algorithm, using objectives for fitness evaluation, ranks both objectives based on the Pareto dominance criteria. Provided a Pareto front exists, this finds the best compromise between both the Q^T and Q^L information.

Oduguwa et al presented a real life rod design optimisation problem to illustrate the solution strategy outlined above. The design problem outlined in the paper is a two objective problem where the first objective is to minimise the deformation load expressed by a Q^T model and the second objective is to maximise the roundness shape profile of the rod. Where the roundness profile is based on the perception of the engineers. The roundness profile was expressed in fuzzy rules were developed by interactive interview with the domain experts. In most of the cases examined, the proposed approach resolved the conflict between Q^T and Q^L information and provided realistic set of optimal solutions. This lecture presents perspectives in combining Q^T and Q^L information for engineering design optimisation problems. It also outlines the challenges and opportunities for future research directions.

Plenary Talk VI

Agent deliberation in a sensor rich world

Liz Sonenberg, University of Melbourne, Australia

Abstract

Exploitation of hand crafted domain knowledge has lead to the construction of many successful multiagent systems, successful in the sense that they exhibit complex and appropriate run-time behaviours in a dynamic, somewhat unpredictable, environment. As the environments where such systems can operate evolve to support more – and more intelligent – sensors, new design considerations arise. For example, opportunities for new strategies to balance designed-in knowledge with knowledge accessible at run time from the environment, and approaches to selecting useful levels of abstraction for encoding situational information. I will discuss some successes and present some challenges.

Bio

Liz Sonenberg has research interests in aspects of reasoning machinery as may be useful for the design of systems that exhibit complex collaborative behaviours. For some years her major research efforts have been in the foundations and applications of systems within the BDI (Belief, Desire, Intention) agent paradigm, with a particular focus on teamwork, but she has also dabbled with various elements of non-monotonic reasoning. Industry collaborations have included the Australian Artificial Intelligence Institute, Agent Oriented Software P/L, the Defence Science and Technology Organisation, and Neuragenix P/L. Liz has also worked with collaborators in Psychology and Education on studies involving human reasoning processes. More recently she has been exploring opportunities for the use of agent technologies to meet the challenges faced by designers and developers of mobile, context aware applications. As part of an active group of agent researchers in academia and industry based in Melbourne, Liz was involved in attracting to Melbourne the Second International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS-03), held in July 2003. She is Program Co-Chair for AAMAS-04 to be hosted in New York, and is a member of the Board of the International Foundation for Multiagent Systems.

Liz is currently Head of the Department of Information Systems at the University of Melbourne, having joined that department after 15 years in the Department of Computer Science and Software Engineering at Melbourne. She teaches in both formal and pragmatic aspects of computing, and has a long standing teaching involvement in the social impacts of technology and in human computer interaction.

HIS'03 Tutorials

T1: Information Assurance and Security
Andrew H. Sung and Srinivas Mukkamala, New Mexico Tech., USA

As a result of the rapidly increasing incidents of security breaches and malicious attacks, and the heightened concern for cyber terrorism, there is an increasing need for governments, organizations, enterprises, and individuals to employ enhanced security measures and security devices to protect their computer systems and information assets. This tutorial begins with an introduction to the basic concepts and issues of information assurance. An assortment of important current topics will be discussed next, including vulnerability analysis, computer attacks (with in-depth coverage of denial of service attacks), intrusion detection, and software security assurance. Current research in selected areas will also be presented to give the audience an understanding of the technical challenges involved and the techniques being explored in information security. The tutorial is presented at introductory level and intended for conference attendees of general interest in information security.

T2: Intelligent Feature Extraction from Knowledge for Forecasting and Decision Making
Parag Kulkarni, Siemens Information Systems Ltd. India

In many complex situations we need to take decisions. Decisions are based on past experience, intuition or expert advises. Neural networks, statistical methods and qualitative methods are some of the methods those used for this purpose. As quantitative methods are based on actual history are most commonly used methods.Passed information or data is used for extracting features. Here features are the properties specific to domain or application. If the features are unique for a particular situation we can analyze and make decision more accurately. Trend analysis, seasonality can also play major role in this process. In this tutorial we will discuss about various decision methods and feature extraction methodologies. Decision based on features. Time dependant decisions and time independent decision. Various modeling methodologies for decision systems including MDP and SMDP will be covered as a part of decision process and model development. Incremental learning based on AI tools and statistical methodologies is necessary for dynamically changing situations. We will also cover methods suitable for static situations and dynamic situations and time dependant modeling.

T3: The Brain and Mind Tissue and Networks that Merge the Understanding, Consciousness, Emotions and Knowledge
Branko Soucek, Iris, Italy

Nested, Fractal, Time I Information I Space S set, TISS is presented. TISS fine and course computing networks directly emulate some of the functions of animal and human brain and mind. TISS net offers a high level of the generalization, recognition, learning and converging. TISS net chaotic self organization leads to the new real - time applications: in medicine, business, communication, industry, internet.

T4: Bayesian Al Tutorial
Kevin B. Korb and Ann E. Nicholson, Monash University, Australia

T5: The Top 10 Data Mining Mistakes
John F. Elder IV, Elder Research, Inc., USA

The tutorial will reveal the top mistakes we Data Miners can make, from the simple to the subtle, using real-world (often humorous) stories. The topics will be presented from case studies of real projects and the (often overlooked) symptoms that suggested something might be amiss...

The goal will be to learn "best practices" from their flip side -- mistakes. But also, following the introduction of a topic (e.g., bootstrapping) the 3-hour tutorial format will allow for brief summaries of how to do it right -- that is, mini-tutorials on the key principles to keep in mind when using a particular Data Mining technique. Mistakes to be covered include: Lack data, Focus on Training, Rely on 1 technique, Ask the wrong question, Listen (only) to the data, Accept

leaks from the future, Discount pesky cases, Extrapolate (practically and theoretically), Answer every inquiry, Sample without care, Believe the best model.

T6: Innovative Soft Computing Applications for Mobile Communication
Suthikshn Kumar, Larsen & Toubro Infotech Ltd. India

Soft Computing techniques comprise of topics from Fuzzy logic, Neuro computing, evolutionary computing, probabilistic computing, chaotic computing and machine learning. They are frequently being used where the mathematical model for given problem is not available. It is a step in lateral thinking for solving numerous unsolved problems. As the use of soft computing leads to High Machine IQ (HMIQ), the resulting smart systems find innovative applications. The soft computing techniques are increasingly being used for mobile communications. In this session, the speakers explore the design and development of some innovative applications of soft computing for mobile communication. Smart Volume Tuner for Cellular Phones: Using the information on background noise levels, a fuzzy logic controller adjusts the acoustic volume levels of mobile handset. This leads to a smart mobile phones which delivers an improved speech quality. Voice dialling for mobile phones: A genetic-fuzzy algorithm used for voice dialling application. The resulting smart dialling application is described. The demo of these applications will be provided at the end of the session. Also, we will distribute demo CDs to the attendees with the product brochures.

T 7: Linguistic Geometry: Theory and Applications
Boris Stilman, University of Colorado, Denver, USA

Linguistic Geometry (LG) is a new type of game theory for Abstract Board Games, which includes mathematical models for conventional games like chess as well as large-scale multi-agent systems including wargaming, cyberwar, robotics, manufacturing, software re-engineering, etc. The purpose of LG is to provide strategies to guide the participants of a game to reach their goals. Traditionally, finding such strategies required searches, which are often beyond capabilities of modern and even conceivable future computers. LG dramatically reduces the size of the searches, thus making the problems computationally tractable. The total number of publications on LG has already exceeded 150; the first book on LG, *Linguistic Geometry: From Search to Construction*, by B. Stilman, has been published by Kluwer in March of 2000. A number of highly advanced software systems utilizing LG, especially, those related to defense, have been developed in the USA. By joint opinion of scientists and military experts, applications of LG lead to a revolution in military affairs. Theoretical foundations of LG, up-to-date results, and advanced software including LG-PROTECTOR (cruise missile defense), LG-SHIELD (ballistic missile defense/offense), Joint Warfare Tools, GDK (Game Development Kit) will be presented at the tutorial. A brochure with two demo CDs with recorded LG software demonstrations will be given to the participants.

T 8: Support Vector Machines: Background, Theory and Case Studies
M. Palaniswami, University of Melbourne, Australia

This tutorial is aimed at introducing engineers and Scientists to Support Vector Machines; to motivate and explain how SVMs are used for pattern classification, function approximation, and regression problems; and to demonstrate their potential both through simple examples and real world case studies. Data classification, prediction, regression etc. are areas heavily used in information technology.   Consider a bank when presented with a loan   application for a commercial development: what are the best criteria to determine the likelihood of success, i.e. whether or not the loan should be approved? Another example comes from fisheries management: how can remote video sensing be used in the real-time identification of fish   species in rivers? Though these examples are rather different, they share a need for analysis of large amounts of data to interpret or predict properties of a very complex environment. In recent years, Machine Learning has become a focal point in Artificial Intelligence. Support Vector Machines (SVMs) are a relatively new,   general formulation for learning machines. SVMs perform exceptionally well on well pattern classification, function approximation, and regression problems dealing with large data sets. Topics covered include a selected review of Machine Learning, fundamentals of SVMs, training and adaptive re-training techniques   (optimization), incremental learning, comparison with Artificial Neural Nets, and various practical examples based on problems from loan default prediction (case studies), fish identification applications (case studies), and learning and prediction from large data bases of protein sequences (case Studies) in computational biology.

T 9: Software Architectures for Hybrid Intelligent Systems

Martin R. Stytz and Sheila B. Banks, Air Force Research Laboratory, USA

In this workshop we discuss the issues that must be addressed when designing and developing an architecture for hybrid intelligent actors systems that can effectively address a number of crucial cost and technical requirements. A modern hybrid intelligent system must allow management to contain costs while also accelerating development and pushing the envelope technically in order to address ever more stringent user requirements and desires in conjunction with an increasing number of application areas. These demands placed upon the hybrid intelligent system community coupled with the myriad of research issues that remain to be addressed point to the need for a class of hybrid intelligent systems that must be modifiable, flexible, portable, interoperable, secure, employ variable and high fidelity representations of users and their environment, and can exploit continued advances in hardware and network technologies. To address the issues raised above, it is apparent at this time that to be effective, a hybrid intelligent system architecture must exploit the technological advantages provided by object-orientation, component software, software frameworks, gauges, containerization, human behavior modeling, intent modeling, and rapid prototyping. These technologies allow the architecture to achieve composability, flexibility, re-usability, and generality, which in turn help to control costs, help in requirements specification, aid in development, and enable effective and rapid experimentation. The architecture would also support hybrid reasoning and knowledge bases; thereby, further helping to minimize costs, refine requirements, and advance the state of the art. In the workshop, we will discuss the challenges of developing architectures for hybrid intelligent systems. The discussion will address current technologies available to address these challenges and the form and features of the architectures that arise from the application of these technologies. We will examine architectural tradeoffs that must be considered when developing hybrid intelligent systems, architectural component interface issues, and architecture and knowledge base documentation and re-use issues. The workshop will also address the human-computer interface, human behavior modeling, and intent modeling issues in regard to hybrid intelligent systems and their impact upon the architecture of the hybrid intelligent system. The workshop will also include a discussion of coming hybrid intelligent system architectural issues (such as distributed computation, higher reliability, and need for increased confidence in their reliability and performance) and our opinion of their effect upon hybrid intelligent system architectures.

PRELIMINARY HIS'03 PRESENTATION PROGRAMME

DATE & DAY	TIME HRS	TRACK 1 (SEMINAR ROOM 1)	TRACK 2 (SEMINAR ROOM 2)	TRACK 3 (SEMINAR ROOM 3)
15/12/2003 MONDAY	0830-0930	REGISTRATION		
	0930-1000	OPENING ADDRESS		
	1000-1100	PLENARY: HYBRID COMPUTATIONAL INTELLIGENCE WITH EVOLUTIONARY COMPUTATION AND OBJECT NEURAL NETWORK (DAVID B FOGEL)		
	1100-1130	MORNING TEA/COFFEE		
	1130-1300	OPTIMISATION	DATA MINING I	NEURAL NETWORKS I
	1300-1400	LUNCH		
	1400-1500	PLENARY: BIOALGORITHMICS:EVOLUTIONARY AND OTHER ALGORITHMS EX SILICO (DAVID CORNE)		
	1500-1530	AFTERNOON TEA/COFFEE		
	1530-1700	MACHINE LEARNING I	FUZZY SYSTEMS	EVOLUTIONARY COMPUTATION I
16/12/2003 TUESDAY	0830-0930	REGISTRATION		
	0830-1000	AGENT SYSTEMS I	ROUGH SET THEORY & APPLICATIONS	NEURAL NETWORK II
	1000-1100	PLENARY: MINING THE DATA STREAM (GRAHAM WILLIAMS)		
	1100-1130	MORNING TEA/COFFEE		
	1130-1300	SIGNAL/IMAGE PROCESSING I	DATA MINING II	EVOLUTIONARY COMPUTATION II
	1300-1400	LUNCH		
	1400-1500	PLENARY: ON-LINE FEATURE AND SENSOR SELECTION-THE WAY TO GO (NIKHIL PAL)		
	1500-1530	AFTERNOON TEA/COFFEE		
	1530-1700	MACHINE LEARNING II	WEB INTELLIGENCE	EVOLUTIONARY NEURAL NETWORK
	1900-	CONFERENCE BANQUET (MELBOURNE AQUARIUM)		
17/12/2003 WEDNESDAY	0830-0930	REGISTRATION		
	0830-1000	AGENT SYSTEMS II	FEATURES, CLASSIFICATION AND CLUSTERING	PREDICTION AND TIME SERIES
	1000-1100	PLENARY: AGENT DELIBERATION IN A SENSOR RICH WORLD (LIZ SONENBERG)		
	1100-1130	MORNING TEA/COFFEE		
	1130-1300	SIGNAL/IMAGE PROCESSING II	SUPPORT VECTOR MACHINES	REAL WORLD APPLICATIONS
	1300-1400	LUNCH		
	1400-1500	PLENARY: INTEGRATING QUANTITATIVE AND QUALITATIVE INFORMATION IN DESIGN OPTIMISATION: A SOFT COMPUTING APPROACH (RAJKUMAR ROY AND VICTOR ODUGUWA)		
	1500-1530	AFTERNOON TEA/COFFEE		
	1530-1630	MACHINE LEARNING III	EMOTIONAL INFORMATION PROCESSING	SECURITY APPLICATIONS
	1630-1700	CLOSING ADDRESS (DISCUSSION OF OPEN RESEARCH ISSUES)		

HIS'03: Presentation Schedule

Session 1. Optimisation
1) Horizon-Scan – A Heuristic Search Technique, *P. Chand and L.F. Sugianto*
2) A Self-Organising Neural Network with Intermittent Switching for Combinatorial Optimisation, *T. Kwok and K. Smith*
3) A Mixed Branch-and-bound and Neural Network Approach for the Broadcast Scheduling Problem, *H. Shi and L. Wang*
4) A Constraint-Based Hybrid Heuristic Solver for Practical School Timetabling, *A.C.M. Kwan, K.C.K. Chung and K.K.K. Yip*
5) An XML Schema Definition for an Operations Research Modeling Language, *M. Calle, S. Lozano, K. Smith and G. Villa*

Session 2. Neural Networks I
1) A Simplified Neuro-Fuzzy Inference System (S-NFIS) Tool for Criteria Matching, *A.T.H. Sim and V.C.S. Lee*
2) Demand Forecast in a Supermarket Using a Hybrid Intelligent System, *L. Aburto and R. Weber*
3) Incremental Neural Network Construction by Using Correlation as Cost Function, *X.X. Wang and D.J. Brown*
4) Overfitting Problem: a New Perspective from the Geometrical Interpretation of MLP, *S.Q. Ding and C. Xiang*
5) An Incremental Constructive Layer Algorithm for Controller Design, *N.P. Bidargaddi and M. Chetty*

Session 3. Neural Networks II
1) Mixtures of Simple Models vs ANNs in Hydrological Modeling, *D.P. Solomatine*
2) A Software Engineering Approach to Develop Adaptive RBF Neural Networks, *A. Talevski, E. Chang, D.H. Wang and T.S. Dillon*
3) Growing Neural Network Trees Efficiently and Effectively, *T. Takeda and Q.F. Zhao*
4) Improving Risk Grouping Rules for Prostate Cancer Patients Using Self-Organizing Maps, *D. Schwartz, K. Smith, L. Churilov, M. Dally and R. Weber*
5) Modeling and Optimization of an Internal Combustion Engine Mapping Using Neural Networks and Particle Swarm Optimization, *S. Rezazadeh and G.R. Vossoughi*

Session 4. Evolutionary Neural Networks
1) A GA-based Neural Network Weight Optimization Technique for Semi-Supervised Classifier Learning, *A. Skabar*
2) Opening Neural Network Black Box by Evolutionary Approach, *U. Markowska-Kaczmar and M. Chumieja*
3) Stopping Criteria for Ensembles of Evolutionary Artificial Neural Networks, *M.H. Nguyer, H.A. Abbass and R.I. McKay*
4) Evolving Feedforward Neural Network for Harmonics Signature Identification, *W.S. Ng, D. Srinivasan and A.C. Liew*
5) Evolutionary Learning of Fuzzy Neural Network Using A Modified Genetic Algorithm, *K. P. Seng and K. M. Tse*

Session 5. Evolutionary Computation I
1) Replacing Generality with Coverage for Improved Learning Classifier Systems, *P. Dixon, D. Corne and M. Oates*

2) Adaptive Dymanic Load-balancing Through Evolutionary Formation of Coalitions, *L. Hovey, D. Volper and J. Oh*
3) On the Performance of Ant-based Clustering, *J. Handl, J. Knowles and M. Dorigo*
4) PDGA: the Primal-Dual Genetic Algorithm, *S. Yang*
5) Multiple DNA Sequences Alignment by Means of Genetic Algorithm, *C.-C. Lai and S.-W. Chung*

Session 6. Evolutionary Computation II
1) Immunity-based Autonomous Guided Vehicles Control, *H.Y.K. Lau, V.W.K. Wong and I.S.K. Lee*
2) A Simple but Powerful Multiobjective Hybrid Genetic Algorithm, *H. Ishibuchi and S. Kaige*
3) A Hybrid Genetic Hill-climbing Algorithm for Four-Coloring Map Problems, *B. H. Gwee and J.S. Chang*
4) Optimization in Continuous Domain by Real-coded Estimation of Distribution Algorithm, *T.K. Paul and H. Iba*
5) Use of Learning Classifier System for Inferring Natural Language Grammar, *O. Unold and G. Dabrowski*

Session 7. Machine Learning I
1) Creative Activity Support for Discovering Effective Combinations, *Y. Nishihara, W. Sunayama and M. Yachida*
2) Decision Support Systems Using Hybrid Neurocomputing, *C. Tran, A. Abraham and L. Jain*
3) A Neuro-Fuzzy Model Applied to Odor Recognition in an Artificial Nose, *C. Zanchettin and T.B. Ludermir*
4) A Hybrid Approach for Learning Parameters of Probabilistic Networks from Incomplete Databases, *S. Haider*
5) Hybrid Approach for Case Adaptation, *C.A. Policastro, A.C.P.L.F. Carvalho and A.C.B. Delbem*

Session 8. Machine Learning II
1) Fast Qualitative Reasoning about Categories in Conceptual Spaces, *I. Lee*
2) An Experimental Evaluation of Reinforcement Learning for Gain Scheduling, *I.S.K Lee, H.Y.K. Lau and L.C.C. Wai*
3) Combining a Rule-Based Expert System and Machine Learning in a Simulated Mobile Robot Control System, *K. Foster and T. Hendtlass*
4) A Similarity Measure Based on Causal Neighbours and Mutual Information, *J. Chua and P. Tischer*
5) A Symbolic Method for Structure Verification in Multiply Sectioned Bayesian Networks, *Y. F. Zeng and K.L. Poh*

Session 9. Machine Learning III
1) Seneschal: Classification and Analysis in Supervised Mixture-modelling, *R. Munro*
2) Neural-Symbolic Intuitionistic Reasoning, *A.S.A. Garcez, L.C. Lamb and D.M. Gabbay*
3) Stochastically Equivalent Dynamical System Approach To Nonlinear Deterministic Prediction, *I. Matsuba, H. Takahashi and S. Wakasa*
4) Hybridization of GA, ANN and Classical Optimization for B-spline Curve Fitting, *G.S. Kumar, P.K. Kalra and S.G. Dhande*

Session 10. Fuzzy Systems
1)A Fuzzy-Routing-Zone-Based Routing Protocol for Bluetooth MANET, *C.J. Huang, W.K. Lai, H.S. Tsai, S.Y. Hsiao and H.Y. Liu*
2)Fuzzy Multicriteria Decision Making under Attitude and Confidence Analysis, *W. Wang and K.L. Poh*
3)Fuzzy Tracking Expert System for Enhancing Situation Awareness, *Q.V. Do, A. Filippidis, L. Jain and V.A.B. Hardikar*

4)On a Set Theory With Uncertain Membership Relations, *S. Yatabe, K. Kakuda and M. Kikuchi*
5) Design of Transparent Mamdani Fuzzy Inference Systems, *G. Castellano, A.M. Fanelli and C. Mencar*

Session 11. Features, Clustering and Classification
1)An Algorithm for Clustering and Classification of Series Data with Constraint of Contiguity, *B. Bhattacharya and D.P. Solomatine*
2)Rated MCRDR: Finding non-Linear Relationships Between Classifications in MCRDR, *R. Dazeley and B.H. Kang*
3)Feature Selection of Intrusion Detection Data using a Hybrid Genetic Algorithm/KNN Approach, *M. Middlemiss and G. Dick*
4)A Cluster Ensembles Framework, *E. Dimitriadou, A. Weingessel and K. Hornik*
5) Refining A Divisive Partitioning Algorithm for Unsupervised Clustering, *C. Kruengkrai, V. Sornlertlamvanich and H. Isahara*

Session 12. Support Vector Machines and Kernel Methods
1)Automatic Ship Classification using Support Vector Machines, *B. Owen, M. Palaniswami and L. Swierkowski*
2)Matching SVM Kernel's Suitability to Data Characteristics Using Tree by Fuzzy C-means Clustering, *S. Ali and K. Smith*
3)Learning Adaptive Kernels for Model Diagnosis, *B. Ribeiro*
4)Predicting Haptic Data with Support Vector Regression for Telepresence Applications, *S.M. Clarke, M.F. Zaeh and J.H. Griebsch*
5) Automatic Acquisition of Long-Distance Acronym Definitions, *M. Zahariev*

Session 13. Rough Sets: Theory and Applications
1) Approximated Measures in Construction of Decision Trees from Large Databases, *H. S. Nguyen and S. H. Nguyen*
2) Approximating Monotone Concepts, *J. Saquer and J.S. Deogun*
3) Diagnosis of Melanoma Based on Data Mining and ABCD Formulars, *S. Bajcar, J.W. Grzymala-Busse, W.J. Grzymala-Busse and Z.S. Hippe*
4) Rough-Fuzzy-Neurocomputing Based on Rough Mereological Calcus of Granules, *L. Polkowski and M. Semaniuk-Polkowska*
5) Hybridized Rough Set Framework for Classification: An Experimental View, *S. Minz and R. Jain*

Session 14. Data Mining I
1)A Hybrid Neural Network Based DBMS System for Enhanced Functionality, *S. Asghar and D. Alahakoon*
2)Efficient Mining of Long Frequent Patterns from Very Large Dense Datasets, *R.P. Gopalan and Y.G. Sucahyo*
3)An Efficient Algorithm for Mining Quantitative Association Rules to Raise Reliance of Data in Large Databases, *H.J. Lee, W.H. Park and D.S. Park*
4)An Empirical Investigation of the Impact of Discretization on Common Data Distributions, *M. Ismail and V. Ciesielski*

Session 15. Data Mining II
1)Mining Sequential Causal Patterns with User-Specified Skeletons in Multi-Sequence of Event Data, *X. Hang, H. Dai and E. Lanham*
2)Knowledge Extraction from Construction Cost Databases Using Fuzzy Queries, *Z. Popovic*
3)Decision Trees Using Class Hierarchy, *T. Takamitsu, T. Miura and I. Shioya*
4)A SOM-Based Query Refinement Mechanism, *H Ye and H. Liu*

5) A Boosting Genetic Fuzzy Classifier for Intrusion Detection Using Data Mining Techniques for Rule Pre-screening, *T. Özyer, R. Alhajj and K. Barker*

Session 16. Agent Systems I
1) Agent WiSARD: A Hybrid System for Reconstructing and Understanding Two-dimensional Geometrical Figures, *E. Burattini, P. Coraggio and M. De Gregorio*
2) A Framework for Interfacing BDI agents to a Real-time Simulated Environment, *C. Sioutis, N. Ichalkaranje and L. Jain*
3) An Architecture to Address Uncertain Requirements and Composability for Intelligent Agents in Distributed Simulations, *M. Stytz and S. Banks*
4) Employing OLAP Mining for Multiagent Reinforcement Learning, *R. Alhajj and M. Kaya*
5) New Analysis on Mobile Agents Based Network Routing, *W. Qu, H. Shen and J. Sum*

Session 17. Agent Systems II
1) Distributed Multi-Intelligent Agent Framework for Detection of Stealthy Probes, *S. Mukkamala, A. Sung and A. Abraham*
2) Policy Gradient Methods in Multi-Agent Systems, *S. Ishihara and H. Igarashi*
3) Building Agent-Based Hybrid Intelligent Systems, *Z. Zhang and C. Zhang*
4) Development of Hybrid Interface for Intelligent Sensor Management, *K. Chan, N. Kansara, M. Mirbagheri, S. M. Guru, S. Halgamuge and S. Fernando*
5) Anchoring Symbols in Hybrid Autonomous Systems Using Isomap Sequences, *E. Prem, E. Hoertnagl and P. Poelz*

Session 18. Signal and Image Processing I
1)Feature Extraction Techniques for Ultrasonic Shaft Signal Classification, *K. Lee and V. Estivill-Castro*
2)Discriminal Exploration of Image Features for Describing Visual Impressions of Black Fabrics, *S. Hirakawa, C.M. Asano, N. Hamahashi and A. Asano*
3) Content-based Image Collection Profiling and Comparison via Self-Organized Maps, *D. Deng*
4)Fair Multi-Path Selection For Real-Time Video Transmission In Ad-Hoc Networks Using Artificial Intelligence, *M. Kwan, K. Doğançay and L. Jain*
5) Salience Detection in Time-Evolving Image Sequences, *E. Celaya and P. Jiménez*

Session 19. Signal and Image Processing II
1) Spectral Matching of Bipartite Graphs, *S.H. Srinivasan*
2) Concurrent Application of Genetic Algorithm in Pattern Recognition, *M. Köppen and E. Dimitriadou*
3) Constructing Neighbourhood-based Image Similarity Measures, *D. Van der Weken, M. Nachtegael and E. Kerre*
4)Wavelet Filter for Noise Reduction and Signal Compression in an Artificial Nose, *C. Zanchettin and T.B. Ludermir*
5)WANDA: A generic Framework applied in Forensic Handwriting Analysis and Writer Identification, *K. Franke, L. Schomaker, C. Veenhuis, C. Taubenheim, I. Guyon, L. Vuurpijl, M. Van Erp, G. Zwarts*

Session 20. Web Intelligence
1) Evolving Better Stoplists for Document Clustering and Web Intelligence, *M. Sinka and D. Corne*
2) Detection of Spam E-Mails by Analyzing the Distributing Behaviors of E-Mail Servers, *L.S Tseng and C.H. Wu*
3) Data Mining of Web Access Logs From an Academic Web Site, *V. Ciesielski and A. Lalani*
4) Dominant Meanings Classification Model for Web Information, *M. Abdel-Razek, C. Frasson and M. Kaltenbach*

5) Constrained Coordinated En-Route Web Caching in Tree Networks, *K. Li and H. Shen*

Session 21. Real-World Applications

1) User Driven Exploration of System Performance: The Use of VRDM Building Blocks to Create a Custom Made System Management Tool, *K. Thornton and E. Burn*
2) Systematic Engineering in Designing Architecture of Telecommunications Business Intelligence System, *L. Cao, D. Luo, C. Luo and C. Zhang*
3) Victim Detection System for Urban Search and Rescue Based on Active Network Operation, *H. Sugiyama, T. Tsujioka and M. Murata*
4) Cooperative Transportation by Humanoid Robots: Learning to Correct Positioning, *Y.Inoue, T. Tohge and H. Iba*
5) A Hybrid Case-Based Reasoning Approach to Business Failure Prediction, *A.Y.N. Yip*

Session 22. Prediction/Time series

1) A Hybrid Statistical and Feedforward Network Model for Time-series Forecasting with a Limited Amount of Data, *G. Rumantir*
2) Novelty Detection for Short Time Series with Neural Networks, *A.L.I.. Oliveira, F.B.L. Neto and S.R.L. Meira*
3) Applying Dynamic Self Organizing Maps for Identifying Changes in Data Sequences, *R. Amarasiri and D. Alahakoon*
4) Novel Time Series Analysis and Prediction of Stock Trading Using Fractal Theory and Time Delayed Neural Network, *F. Yakuwa, M. Yoneyama and Y. Dote*
5) Pattern Refinement with Model Data Fusion to Predict Exchange Rate Movement, *H. Shimakawa, H. Yamahara, Y. Imayama, M. Ushijima and S. Azuma*

Session 23. Emotional Information Processing

The GALA Layered Emotion Model for Advanced HCI Interfaces, *A. Szaló, A. Csordás, L. Laufer, G. Tatai*
Emotion-based Hierarchical Reinforcement Learning, *W. Zhou and R. Coggins*
MEXI: Machine with Emotionally eXtended Intelligence, *N. Esau, B. Kleinjohann, L. Kleinjohann and D. Stichling*

Session 24. Security Applications

1) Plagiarism Detection of Text using Knowledge-based Techniques, *J.S Yang and C.H. Wu*
2) A Neural-Network Approach for Visual Cryptography and Authorization, *T.W. Yue and S. Chiang*
3) A Novel VQ-Based Watermarking Scheme with Genetic Codebook Partition, *F.H. Wang, L. Jain and J.S Pan*

HIS'03: REGISTRATION FORM

All rates are in Australian Dollars and GST Inclusive

Title: _____ Given Name: _____

Surname: _____

Department: _____

Organisation: _____

Postal Address: _____

_____

Suburb/ City _____ State _____ Country _____ Postcode _____

Tel: _____ Fax: _____ Email: _____

Do you agree to have your details available to other attendees?   Yes   ☐   No ☐

Will you be attending the Conference Dinner?   Yes   ☐   No ☐
(Tuesday 16th December, 7pm, Melbourne Aquarium)

REGISTRATION DETAILS

FULL REGISTRATION	**$750**
(Inclusive of morning/afternoon teas, Lunches, Conference Dinner & Proceedings)	
Members of the Australian Computer Society or IEEE System, Man and Cybernetics are offered a 10% discount on the registration cost (IEEE membership is not sufficient, must be IEEE SMC)	
ACS/ IEEE SMC Member number: _____	**$675**
STUDENT REGISTRATION	**$550**
(Inclusive of morning/afternoon teas, Lunches, Proceedings) Please include a photocopy of valid student ID card, and letter from supervisor confirming student status	
EXTRA CONFERENCE DINNER: no. of additional people _____	**$110 each**
TUTORIALS: no. of tutorials _____	**$100 each**
REGISTRATION TOTAL **AUS$** _____	

Please indicate the tutorials (T1 – T8) you intend to register (one each from session 1 and 2)

Session 1 _____   Session 2 _____

10AM - 1PM Session 1	2PM - 5PM Session 2
T1: Information Assurance and Security *Andrew H. Sung and Srinivas Mukkamala,* New Mexico Tech.	**T4: Bayesian AI Tutorial** *Kevin B. Korb and Ann E. Nicholson,* Monash University, Australia
T2: Intelligent Feature Extraction from Knowledge for Forecasting and Decision Making *Parag Kulkarni,* Siemens Information Systems Ltd. India	**T5: The Top 10 Data Mining Mistakes** *John F. Elder IV* Elder Research, Inc.
T3: The Brain and Mind Tissue and Networks that Merge the Understanding, Consciousness, Emotions and Knowledge *Branko Soucek,* Iris, Italy	**T6: Innovative Soft Computing Applications for Mobile Communication** *Suthikshn Kumar,* Larsen & Roubro Infotech Ltd. India
T8: Support Vector Machines: Background, Theory and Case Studies M. Palaniswami, University of Melbourne, Australia	**T7: Linguistic Geometry: Theory and Applications** *Boris Stilman,* University of Colorado, Denver
T9: Software Architectures for Hybrid Intelligent Systems Martin R. Stytz and Sheila B. Banks, Air Force Research Laboratory, US	

Accompanying Dinner Guest Name: _____

Special Dietary Requirements: _____

CONFERENCE DINNER
The conference dinner is to be held at Melbourne Aquarium
Tuesday 16th December, 7pm
Cnr. Queenswharf Road (Flinders St) and Kingsway

ACCOMMODATION –Please circle room type
Special accommodation rates have been negotiated with the following hotels. These rates are available only by booking through the conference secretariat. **To guarantee accommodation, all bookings must be accompanied with a deposit for one night's accommodation.**
Backpacker accommodation is also available - please book through the following website: http://www.hostelworld.com.au/availability.php/HostelNumber.1705

Stamford Plaza (4.5 Star)
111 Little Collins Street
Melbourne 3000
Standard Room (Studio apartment/Twin) $155 per room per night

Mercure (3.5 Star)
13 Spring Street

Melbourne 3000
Standard Room (Single/Double/Twin) $119 per room per night

Victoria Hotel
215 Little Collins Street
Melbourne 3000
Standard Single Room $79.00 per room per night
Standard Twin/Double Room $99.00   "   "   "   "
Superior Single/Twin/Double $115.00 "   "   "   "

Date of Arrival _____ 12/03   **Date of Departure** _____12/03

REGISTRATION TOTAL (from previous page)   **$AUS**_____

ACCOMMODATION DEPOSIT (one night)   **$AUS**_____
Remainder of accommodation cost is payable to hotel upon check-in

TOTAL AMOUNT PAYABLE   **$AUS**_____

PAYMENT DETAILS

PAYMENT OPTIONS:
*Registration fees are payable in **AUSTRALIAN DOLLARS ONLY**.*
Bank transfers are not accepted. American Express, Visa, MasterCard and Bankcard will be accepted.

CHEQUE (Payable in Australian Dollars to **MONASH UNIVERSITY**)   ☐

CREDIT CARD   ☐

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Mail to:
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Telephone: + 61 3 9905 1344
Fax: + 61 3 9905 1343
Email: irene.thavarajah@adm.monash.edu.au

CANCELLATION POLICY
Refunds for Conference / Accommodation are applicable as follows:
Prior 21 Nov 2003   Full refund minus $200.00, Administration Fees
After 21 Nov 2003   No refunds

The Conference Secretariat must receive cancellation in writing by the dates specified

Disclaimer: The conference organisers reserve the right to change activities, topics and presenters where necessary. "Monash University shall not be liable for any loss caused by the cancellation of the conference where such cancellation is due to Force Majeure. The term "Force Majeure" means any circumstance beyond the reasonable control of Monash University including but not limited to War, hostilities (whether war be declared or not), terrorism, aircraft hijacking, military operation, riot, civil war, rebellion, civil commotion or unrest, Acts or Regulations of government, refusal to grant visas, explosions, transport delays, transport difficulties and the insolvency of airline carriers. Monash University will use all reasonable efforts to conduct the conference despite the intervention or occurrence of any such cause."