# Programme of the Sixth International Conference on Intelligent Data Engineering and Automated Learning IDEAL'05

**6th - 8th July, 2005**

**School of Information Technology & Electrical Engineering**
**The University of Queensland, Brisbane**
**Queensland, Australia**

| Tuesday, July 5th 2005 | |
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| 5:00 – 7:00PM | **Welcome Reception**<br>UQ Staff and Graduates Club, Staff House |

| Wednesday, July 6th 2005 | | |
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| [8:00AM-6:00PM] | Registration (Hawken Room S201), Internet Access | |
| 8:45-9:00AM | **Welcome/Conference Opening (Hawken 3)** | |
| 9:00-10:00AM | **Plenary Session: (Hawken 3)**<br>**Session Chair**: James Hogan<br>**Keynote Address:** *Selection Bias and Other Issues in Applications of Machine Learning in Bioinformatics*<br>Geoff McLachlan, University of Queensland | |
| 10:00-10:30AM | **Morning Tea** | |
| | **Stream 1: (Hawken 3)** | **Stream 2: (Hawken 2)** |
| 10:30AM-12:30PM | **Bioinformatics**<br>**Session Chair:** James Hogan | **Knowledge Engineering & Discovery**<br>**Session Chair:** Frederic Maire |

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| | Evolving Neural Networks for the Classification of Malignancy Associated Changes - Jennifer Hallinan<br><br>Matching Peptide Sequences with Mass Spectra<br>K. W. Lau, B. Stapley, S. Hubbard, and H. Yin<br><br>Extraction by Example: Induction of Structural Rules for the Analysis of Molecular Sequence Data from Heterogeneous Sources - Olivo Miotto, Tin Wee Tan, and Vladimir Brusic<br><br>SVM Based Prediction of Bacterial Transcription Start Sites James Gordon and Michael Towsey<br><br>Exploiting Sequence Dependencies in the Prediction of Peroxisomal Proteins - Mark Wakabajashi, John Hawkins, Stefan Maetschke, and Mikael Boden<br><br>Deriving a Matrix of Peptide-MHC Interactions in the Diabetic Mouse by Genetic Algorithms - Menaka Rajapakse, Lonce Wyse, Bertil Schmidt, and Vladimir Brusic | EXiT-B: A New Approach for Extracting Maximal Frequent Subtrees from XML Data - Juryon Paik, Dongho Won, Farshad Fotouhi, and Ung Mo Kim<br><br>Synthetic Environment Representational Semantics Using the Web Ontology Language- Mehul Bhatt, Wenny Rahayu, and Gerald Sterling<br><br>New Rules for Hybrid Spatial Reasoning - Wenhui Li and Haibin Sun<br><br>Using Pre-aggregation for Efficient Spatial Query Processing in Sensor Environments - Soon-Young Park and Hae-Young Bae<br><br>Generating Predicate Rules from Neural Networks - Richi Nayak |
| 12:30-1:30PM | **Lunch (St. Leo's College)** | |
| | **Stream 1: (Hawken 3)** | **Stream 2: (Hawken 2)** |
| 1:30-2:45PM | **Evolutionary Computation & Complex Systems**<br>**Session Chair:** Jennifer Hallinan | **Engineering Applications**<br>**Session Chair:** Gordon Wyeth |

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| | Co-evolutionary Rule-Chaining Genetic Programming<br>Wing-Ho Shum, Kwong-Sak Leung, and Man-Leung Wong<br><br>A Dynamic Migration Model for Self Adaptive Genetic Algorithms<br>Srinivasa K G, P. Deepa Shenoy, Karthik Sridharan, Venugopal K R and Lalit M. Patnaik<br><br>Combining Influence Maps and Cellular Automata for Reactive Game Agents - Penelope Sweetser and Janet Wiles | Analysis/Synthesis of Speech Signals Based on AbS/OLA Sinusoidal Modeling Using an Elliptic Filter - Kihong Kim, Jinkeun Hong and Jongin Lim<br><br>Robust Model Adaptation using Mean and Variance Transformations in the Linear Spectral Domain - Donghyun Kim and Dongsuk Yook<br><br>Intelligent Predictive Control of a 6-dof Robotic Manipulator with Reliability Based Performance Improvement - Ahmet Akbas |
| 2:45-3:15PM | **Afternoon Tea** | |

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| 3:15-4:30PM | **Image Analysis**<br>**Session Chair:** | **Data Mining I**<br>**Session Chair:** Marcus Gallagher |
| | Multiresolution Analysis of Connectivity<br>Atul Sajjanhar, Guojun Lu and Dengsheng Zhang<br><br>Kernel Biased Discriminant Analysis using the Histogram Intersection Kernel for Content-Based Image Retrieval<br>Lin Mei, Gerd Brunner, Lokesh Setia and Hans Burkhardt | Probabilistic Data Generation for Deduplication and Data Linkage<br>Peter Christen<br><br>Mining Job Logs Using an Incremental Attribute-Oriented Approach<br>Idowu O. Adewale and Reda Alhajj<br><br>Dimensional Reduction of Large Image Datasets using Non-Linear Principal Components - Silvia S. C. Botelho, Willian Lautenschlger, Matheus Bacelo de Figueiredo, Tania Mazzadri Centeno and Mauricio M. Mata<br><br>Knowledge Reduction of Rough Sets Based On Partition<br>Xiaobing Pei and Yuanzhen Wang |

| Thursday, July 7th 2005 | | |
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| [8:00AM-5:30PM] | Registration (Hawken Room S201), Internet Access | |
| | **Stream 1: (Hawken 3)** | **Stream 2: (Hawken 2)** |
| 8:30AM-10:30AM | **Gene Expression and Proteins**<br>**Session Chair:** Mikael Boden | **Machine Learning I**<br>**Session Chair:** |
| | A Multi-population Chi-Squared Test Approach to Informative Gene Selection - Jun Luo and Jinwen Ma<br><br>Gene Selection of DNA Microarray Data Based on Regularization Networks - Xin Zhou and K.Z. Mao<br><br>Application of Mixture Models to Detect Differentially Expressed Genes - Liat Ben-Tovim Jones, Richard W. Bean, Geoff McLachlan, and Justin Zhu<br><br>A Comparative Study of Two Novel Predictor Set Scoring Methods Chia Huey Ooi and Madhu Chetty<br><br>Predictive Vaccinology: Optimisation of Predictions Using Support Vector Machine Classifiers - Ivana Bozic, Guang Lan Zhang, and Vladimir Brusic<br><br>Protein Fold Recognition using Neural Networks and Support Vector Machines - Nan Jiang, Wendy Xinyu Wu, and Ian Mitchell | Neural Networks: a Replacement for Gaussian Processes?<br>Matt Lilley and Marcus Frean<br><br>Bayesian Radial Basis Function Neural Network<br>Zheng Rong Yang<br><br>Model Trees for Classification of Hybrid Data Types<br>Hsing-Kuo Pao, Shou-Chih Chang, and Yuh-Jye Lee<br><br>An Empirical Study of Hoeffding Racing for Model Selection in k-Nearest Neighbor Classification<br>Flora Yu-Hui Yeh and Marcus Gallagher<br><br>Designing an Optimal Network Using the Cross-Entropy Method<br>Sho Nariai, Kin-Ping Hui, and Dirk Kroese<br><br>Improving Ensembles With Classificational Cellular Automata<br>Petra Povalej, Mitja Lenic, and Peter Kokol |
| 10:30AM-11:00AM | **Morning Tea** | |

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| 11:00AM-12:30PM | **Data Mining II**<br>**Session Chair:** | **Machine Learning II**<br>**Session Chair:** |
| | A Focused Crawler with Document Segmentation<br>Jaeyoung Yang, Jinbeom Kang and Joongmin Choi<br><br>An Intelligent Grading System using Heterogeneous Linguistic Resources - Yu-Seop Matt Kim, Woo-Jin Cho, Jae-Young Lee, and Yu-Jin Oh<br><br>Finding Uninformative Features in Binary Data<br>Xin Wang and Ata Kaban<br><br>Classification by an Instance-Based Learning Algorithm<br>Yongguang Bao, Eisuke Tsuchiya, Naohiro Ishii and Xiaoyong Du | Sequential Search for Decremental Edition - Jose A. Olvera-Lopez, J. Ariel Carrasco-Ochoa and Jose Fco. Martnez-Trinidad<br><br>A Gradient BYY Harmony Learning Algorithm on a Mixture of Experts for Curve Detection - Zhiwu Lu, Qiansheng Cheng and Jinwen Ma<br><br>Novel Anomaly Detection Using Small Training Sets<br>Qingbo Yin, Liran Shen, Rubo Zhang and Xueyao Li<br><br>Induction of Linear Decision Trees with Real-coded Genetic Algorithms and k-D Trees - Sai-cheong Ng and Kwong-sak Leung |
| 12:30-1:30PM | **Lunch (St. Leo's College)** | |
| 1:30-2:30PM | **Plenary Session: (Hawken 3)**<br>**Session Chair**: Marcus Gallagher<br>**Keynote Address:** *Improving Web Information Finding by Learning with Large Datasets*<br>Mehran Sahami, Google and Stanford University | |
| 2:30-3:00PM | **Afternoon Tea** | |

| | **Stream 1: (Hawken 3)** | **Stream 2: (Hawken 2)** |
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| 3:00PM-5:00PM | **Special Session**<br>**Session Chair:** | **Cluster Analysis**<br>**Session Chair:** |
| | Circular SOM for Temporal Characterisation of Modelled Gene Expressions - Carla S. Moller-Levet and Hujun Yin<br><br>A Recursive Self-Organizing Map as a Contractive Iterative Function System - Peter Tino Igor Farkas and Jort van Mourik<br><br>Differential Priors for Elastic Nets - Miguel A. Carreira-Perpinan, Peter Dayan, and Geoffrey J. Goodhill<br><br>Graphics Hardware Implementation of the Parameter-less Self Organising Map - Alexander Campbell, Erik Berglund and Alexander Streit<br><br>SOM-based Novelty Detection Using Novel Data<br>Hyoung-joo Lee and Sungzoon Cho<br><br>Multi-Level Document Classifications with Self-Organising Maps<br>Huilin Ye | A Dynamic Merge-Or-Split Learning Algorithm on Gaussian Mixtures for Automated Model Selection - Jinwen Ma and Qicai He<br><br>Bearing Similarity Measures for Self-Organizing Feature Maps<br>Narongdech Keeratipranon and Frederic Maire<br><br>An Efficient Spatial Clustering Algorithm Using a Binary Tree<br>Mohsin Ali, Xue Li and Zhao Yang Dong<br><br>Cluster Analysis of High-Dimensional Data: A Case Study<br>Richard Bean and Geoff McLachlan<br><br>Universal Clustering with a Family of Power Loss Functions in Probabilistic Space - Vladimir Nikulin |
| **Evening** | **Conference Dinner: Vino's Restaurant and Bar, Eagle St. Pier, City** | |

| Friday, July 8th 2005 | | |
|---|---|---|
| [8:00AM-2:30PM] | Registration (Hawken Room S201), Internet Access | |
| | **Stream 1: (Hawken 3)** | **Stream 2: (Hawken 2)** |
| 9:00AM-10:30AM | **Financial Engineering**<br>**Session Chair:** | **Multi-Agent Systems (Theory)**<br>**Session Chair:** |
| | A Multicriterion Sorting Procedure for Financial Classification Problems: the Case of Business Failure Risk Assessment Ceyhun Araz, Irem Ozkarahan<br><br>Volatility Modelling of Multivariate Financial Time Series by Using ICA-GARCH Models - Edmond H.C. Wu and Philip L.H. Yu<br><br>Volatility Transmission between Stock and Bond Markets: Evidence from the U.S. and Australia - Victor Fang, Vincent C S Lee and Yee Choon Lim<br><br>A Machine Learning Approach to Intraday Trading on Foreign Exchange Markets - Andrei Hryshko and Tom Downs | A Support Tool for Multi-Agent Development - Hyunsang Youn, Sungwook Hwang, Heeyong Youn and Eunseok Lee<br><br>A Hybrid Agent Architecture for Modeling Autonomous Agents in SAGE - Amina Tariq, Amna Basharat, Hafiz Farooq Ahmad, Hiroki Suguri, and Arshad Ali<br><br>Toward Transitive Dependence in MAS - Bo An, Chunyan Miao, Lianggui Tang, Shuangqing Li, and Daijie Cheng<br><br>An Architecture for Multi-Agent based Self-Adaptive Systems in Mobile Environments - Seunghwa Lee, Jehwan Oh, and Eunseok Lee |
| 10:30AM-11:00AM | **Morning Tea** | |

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| 11:00AM-12:00PM | **Complex Systems Models**<br>**Session Chair:** | **Multi-Agent Systems (Applications)**<br>**Session Chair:** |
| | EEG Source Localization for Two Dipoles in the Brain Using a Combined Method - Zhuoming, Li, Yu Zhang, Qinyu Zhang, Masatake Akutagawa, Hirofumi Nagashino, Fumio Shichijo, and Yohsuke Kinouchi<br><br>Identification of Anomalous SNMP Situations Using a Cooperative Connectionist Exploratory Projection Pursuit Model<br>Alvaro Herrero, Emilio Corchado, Jose Manuel Saiz<br><br>Patterns in Complex Systems Modelling<br>Janet Wiles and James Watson | Autonomous and Dependable Recovery Schemes in UPnP Network Settings - Youngsoo Choi, Sanguk Noh, Kyunghee Choi, and Gihyun Jung<br><br>A Transitive Dependence Based Social Reasoning Mechanism for Coalition Formation - Bo An, Chunyan Miao, Lianggui Tang, Shuangqing Li, and Daijie Cheng<br><br>A Multi-Agent Based Context Aware Self-Healing System<br>JeongMin Park, HyunSang Youn, and EunSeok Lee |
| 12:00-1:00PM | **Plenary Session: (Hawken 3)**<br>**Session Chair**: Frederic Maire<br>**Keynote Address:**<br>*Challenges of Learning from Very Small Size Sample in a Very High Dimensional Space*<br>Adam Kowalczyk, Statistical Machine Learning, NICTA Canberra.<br>**Conference Close.** | |
| 1:00-2:00PM | **Lunch (St. Leo's College)** | |
| 2:00-5:00PM | **Social Event: Trip to Lone Pine Koala Sanctuary** | |