The Fourth International Workshop on Advanced Computation for Engineering Applications (ACEA08)

Program

Al- Balqa Applied University
Salt, Jordan

July 23-24, 2008

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Wednesday, July 23, 2008

9:00- 9:30	Opening
9:30- 11:00	INVITED TALK: Cognitive Systems Engineering: the fringes of AI and its practical applications in the not-too-far futuristic homes Prof. Aladdin Ayesh, De Montfort University, UK
11:00- 11:30	Coffee – Break
11:30- 1:30	SESSION (A1) : Genetic Algorithms

Mohammad Alshraideh
Using Genetic Algorithms to Solve Flag Problem in Test Data Generation (A1-1)

Sakha'a Al Manaseer and Alaa Sheta
Analogue Circuit Synthesis Using Differential Evolution (A1-2)

Mohaned Al-Obaidy, Aladdin Ayesh, Alaa Sheta
Optimizing The Communication Distance Of An Ad Hoc Wireless Sensor Networks By Genetic Algorithms (A1-3)

Gada Al-Hudhud
Multi-Agent Communication Model to Control a Group of Networked Mobile Robots Performing a Team Work (A1-4)

1:30- 2:30	Lunch
2:30- 4:30	SESSION (B1): Artificial Neural Networks

Alexander Gavrilov
Welding Process Engineering Using Artificial Neural Networks (B1-1)

Zainab A. Rahamneh and Alaa Sheta
Financial Time Series Forecasting Using Fuzzy Logic And Neural Network (B1-2)

Brahim Boulebtateche, Adel Djella, Abderaouf Youcef Khodja
LQ-Guided Reinforcement Learning Controller (B1-3)

Bara'a ali, Laylan Mohammad and Wafaa Khazzal
An Evolutionary Approach for Example-Based Image Painting (B1-4)

Wednesday, July 23, 2008

Tutorial

11:30 – 1:30	(A2) Multimedia Watermarking Ali Al-Haj
1:30 – 2:30	Lunch
2:30 – 4:30	(B2) Super Resolution: Challenges & Rewards Alaa Al-Hefnawy

Special Session (A3): Al-Salt Greater Municipality

11:30 – 12:30 Session Chair: Eng. Salama Al-hiary

Topics Covered:

- Quick Introduction on Information Technology (IT)
- IT growth in Al-Salt Greater City.
- Evolution of Al-Salt Greater City IT Systems.
- Investment Learning and Training for Employee.
- Opportunity for fresh graduates at Al-Salt Greater City.
- Infrastructure and Networking at Al-Salt Greater City: Current Status
- Projects under Construction.
- Future Plans.

Thursday, July 24, 2008

9:30 - 11:00 INVITED TALK: Association Rule based Supervised Classification
Prof. François Rioult, Université de Caen Basse-Normandie
Département informatique

11:00 - 11:30 Coffee – Break

11:30 -1:30 SESSION (C1): Engineering Applications

Mohammad Al Hamami
Approach to Protect Internet Servers from Unauthorized Usage of Mobile Devices (C1-1)

Khalaf Khatatneh and Thaer Mustafa
Software Reliability Modeling using Soft Computing Technique (C1-2)

Mansour Mededjel and Hafida Belbachir
Optimization of Decision Trees by the Association Measures in Data Mining (C1-3)

Mohammad Salamah, Alaa Sheta
A Multi-Stage Image Processing Methodology for Landmine Detection Using IR Images (C1-4)

1:30- 2:30 Lunch

2:30- 4:30 SESSION (D1): Multi-Objective Optimization

Noor Khrisat, Alaa Sheta
Solving Multi-Objective Optimization Problems Using Genetic Algorithm for Production Systems (D1-1)

Sarab Majeed, Mayada Abdulhalim and Baraa Attea
Diploid Genetic Algorithm with Exogenous Recombination Scheme for Merkle-Hellman Knapsack Attack (D1-2)

Nashwan Ghaleb
System Visualization of Recursion (VSR) (D1-3)

Saad ALshaban, Salama H. Farhan
Implementation of DICOM Protocol For Biomedical Station (D1-4)

Thursday, July 24, 2008

Special Session: Modelling and Analysing Complex Interacting Systems

9:00 - 11:00 (S1) Part 1: Chair: Professor Gérard H.E. Duchamp

Tutorial 1: Professor Shaher Momani
Algorithms for Nonlinear Fractional Partial Differential Equations: A Selection of Numerical Methods

Reyad El-Khazali
Fractional Analog and Digital Phase-Looked Loops (S1-1)

Muhammad Zurigat, Shaher Momani, Ahmad Alawneh
The Homotopy Analysis Method for Handling Systems of Fractional Differential Equations (S1-2)

Ahmad Al-Ajou, Zaid Odibat, Ahmed Alawneh
Numerical Approximation for Population Growth Models (S1-3)

Jamal Al-Bastanjy
Homotopy Analysis Method for Systems of Fractional Partial Differential Equations (S1-4)

11:00 - 11:30 Coffee – Break

11:30 -1:30 (S2) Part 2: Chair: Professor Shaher Momani

Tutorial 2: Professor M.A. Aziz-Alaoui
Dynamical Systems Synchronization

Tutorial 3: Professor Cyrille Bertelle
Self-Organization Modelling

Ahmed Y. Abdallah
Exponential Attractors for First Order Lattice Dynamical System (S2-1)

R. Ghnemat, C. Bertelle, G.H.E. Duchamp
Swarm Intelligence Engineering for Spatial Organization Modelling (S2-2)

Nathalie Corson, M. A. Aziz Alaoui
From Neuronal Oscillation to Complexity (S2-3)

1:30- 2:30 Lunch

2:30- 4:30 (S3) Part 3: Chair: Professor Zaid Odibat

Tutorial 4: Professor Gérard H.E. Duchamp
Dynamic combinatorics, complex systems and applications to physics

Omar Abu-Argob, Nabil T. Shawagfeh, Zaer S. Abo-Hammour
Numerical Solution of Initial Value Problems Using Continuous Genetic Algorithms (S3-1)

Sana Abu-Ghurra, Vedat Suat Erturk, Shaher Momani
Application of the modified differential transform method to strongly non-linear oscillators (S3-2)

Bnan Ma'aiah
Non-Standard Discretization for Nonlinear Systems of Fractional Differential Equations (S3-3)

M. Arfi, B.O.M. Lemine, C. Selmi
Using Infinite Words to Model Nash Equilibria in Infinitely Repeated Games (S3-4)

Thursday, July 24, 2008

Tutorial

11:30 – 1:30	(C2): Association rules: fundamentals and applications E. Mephu Nguifo
1:30 – 2:30	Lunch
2:30- 4:30	(D2): Concise representations of patterns (cont.) Sadok Ben Yahia