

**ISCIS 2006 – 21st Intl. Symposium on Computer and Information Sciences  
Technical Program**

**November 1, 2006**

Time Slot	Giza	Babylon-1	Petra
08:00-08:30	Registration		
08:30-09:00	Opening Session – Kemal İnan, Albert Levi, Yakup Paker		
09:00-10:00	Invited Talk by Jacques G. Verly Université de Liège, Belgium <i>“Problems and Challenges of Image-guided Neurosurgical Navigation and Intervention”</i>		
10:00-10:30	Coffee Break		
10:30-12:10	1.1.A Databases-I	1.1.B Algorithms and Theory-I	1.1.C Computer Networks-I
12:10-13:30	Lunch		
13:30-15:30	1.2.A Computer Graphics-I	1.2.B Computational Intelligence	1.2.C Security and Cryptography-I
15:30-16:00	Coffee Break		
16:00-17:40	1.3.A Mobile Computing	1.3.B Computer Architecture	1.3.C Data Mining & Performance Evaluation
19:00-22:00	Welcome Reception (Point Hotel)		

**November 2, 2006**

Time Slot	Giza	Babylon-1	Petra
09:00-10:40	2.1.A Computer Graphics-II	2.1.B Information Retrieval	2.1.C Computer Networks-II
10:40-11:10	Coffee Break		
11:10-12:10	Invited Talk by Daniel Thalmann EPFL, Switzerland <i>“Advanced Mixed Reality Technologies for Surveillance and Risk Prevention Applications”</i>		
12:10-13:30	Lunch		
13:30-14:30	Invited Talk by Erol Gelenbe Imperial College, UK <i>“Analysis of Automated Auctions”</i>		
14:30-15:00	Coffee Break		
15:00-17:00	2.2.A Computer Vision-I	2.2.B Algorithms & Theory-II	2.2.C Security and Cryptography-II
19:30-23:00	Conference Dinner - Ponte Restaurant, İstiklal cad. Beyoğlu iş merkezi No.365-367 kat.7, Beyoğlu-Tepebaşı-Istanbul. <a href="http://www.ponterestaurant.com">www.ponterestaurant.com</a> - Shuttles will depart from Point Hotel at 19:15		

**November 3, 2006**

Time Slot	Giza	Babylon-1	Petra
09:00-10:40	3.1.A Software Engineering	3.1.B Parallel and Distributed Computing-I	3.1.C Bioinformatics
10:40-11:10	Coffee Break		
11:10-12:10	Invited Talk by Manfred Broy Technische Universität München, Germany <i>“Requirements Engineering as a Key to Holistic Software Quality”</i>		
12:10-13:30	Lunch		
13:30-14:30	Invited Talk by Eric Badiqué European Commission <i>“Information and Communication Technologies in the EU's Seventh Framework Programme”</i>		
14:30-15:00	Coffee Break		
15:00-16:20	3.2.A Computer Vision-II	3.2.B Parallel and Distributed Computing-II	3.2.C Embedded Systems
16:20-16:30	Closing Session		

**November 1, 2006**

**Time Slot: 8:30-9:00**

**Opening Session**

Room: Giza

**Time Slot: 9:00-10:00**

**Invited Talk** - Problems and Challenges of Image-guided Neurosurgical Navigation and Intervention, *Jacques G. Verly*

Room: Giza

Session Chair: Yakup Paker

**Time Slot: 10:30-12:10**

**Session 1.1.A - Databases-I**

Room: Giza

Session Chair: Reda Alhajj

- 226 - Credential-based Policies management in an access control framework Protecting XML Resources, *Konstantina Stoupa, Zisis Simeoforidis, and Athena Vakali*
- 346 - Evaluating Proposals in Web Services, *Yonglei Yao, Fangchun Yang, and Sen Su*
- 605 - Nested Bitemporal Relational, *Abdullah Uz Tansel and Canan Eren Atay*
- 621 - A Protocol for Reconciling Recovery and High-Availability in Replicated Databases, *J.E. Armendáriz-Iñigo, F.D. Muñoz-Escóí, H. Decker, J.R. Juárez-Rodríguez, and J.R. González de Mendivil*
- 638 - Migrating A Hierarchical Legacy Database Application onto an XML-Based Service-Oriented Web Platform, *Özgür Yürekten, Kivanç Dinçer, Berk Akar, Müberra Sungur, and Elif Kurtaran Özbudak*

**Session 1.1.B - Algorithms and Theory-I**

Room: Babylon-1

Session Chair: Hüsnü Yenigün

- 142 - Test Suite Reduction Based on Dependence Analysis, *Guy-Vincent Jourdan, Panitee Ritthiruangdech, and Hasan Ural*
- 212 - The Greedy Prepend Algorithm for Decision List Induction, *Deniz Yuret and Michael de la Maza*
- 213 - Heuristics for Minimum Brauer Chain Problem, *Fatih Gelgi and Melih Onus*
- 214 - Dispatching Rules for Allocation of Component Types to Machines in the Automated Assembly of Printed Circuit Boards, *Mehmet Bayram Yildirim, Ekrem Duman, and Dilek Duman*
- 319 - Heuristic Approach to Schedule Crew for a Regional Airline, *Byung T Kim and Young Hoon Lee*

**Session 1.1.C - Computer Networks-I**

Room: Petra

Session Chair: Sema Oktuğ

- 170 - On the Stability of Application-Layer Multicast Tree, *Ke Xu, Jiangchuan Liu, Lizheng Fu, and Chunyu Liu*
- 219 - Extended Authentication Integrating Scheme for Beyond 3G Wireless Networks, *JongMin Jeong, GooYeon Lee, and SangJae Moon*
- 231 - A New Function for Optimization of Working Paths in Survivable MPLS Networks, *Krzysztof Walkowiak*
- 323 - HIMUTSIS: Hierarchical Multi-Tier Adaptive Ad-hoc Network Security Protocol Based on Signcryption Type Key Exchange Schemes, *Attila Altay Yavuz, Fatih Alagoz, and Emin Anarim*

**November 1, 2006**  
**Time Slot: 13:30-15:30**

**Session 1.2.A - Computer Graphics-I**

Room: Giza

Session Chair: Ali Vahit Şahiner

- 350 - PARM: Data Structure for Efficient Volume Ray Casting, *Sukhyun Lim and Byeong-Seok Shin*
- 422 - Triangle Propagation for Mass-Spring Chain Algorithm, *Alpaslan Duyşak*
- 480 - Hardware Acceleration of Terrain Visualization Using ef-Buffers, *Hyun-Duk Chang and Byeong-Seok Shin*
- 243 - Computer Simulation of Woven Fabric Defects Based on Faulty Yarn Photographs, *Hakan ÖZDEMİR and Güngör BAŞER*
- 497 - Bidirectional Distancemap for Efficient Volume Ray Casting, *Sukhyun Lim and Byeong-Seok Shi*
- 299 - Segmenting Free-Form 3D Objects by a Function Representation in Spherical Coordinates, *Olçay Sertel and Cem Ünsalan*

**Session 1.2.B - Computational Intelligence**

Room: Babylon-1

Session Chair: Cem Say

- 123 - An Intelligent Shopping Agent for Optimal Purchasing Decision on the Semantic Web, *Hak-Jin Kim, Wooju Kim, and Jungmyong Kim*
- 186 - Adapting the Pyramid Technique for Indexing Ontological Data, *Övünç Öztürk, Tuğba Özacar, Murat Osman Ünalır, and Ata Önal*
- 390 - Comparison of Different Neural Networks Performances on Motorboat Datasets, *M.Fatih Amasyalı, Mert Bal, Uğur B. Çelebi, Serkan Ekinci, and U.Kaşif Boyacı*
- 396 - Dynamic Role Assignment for Multi-Agent Cooperation, *In-Cheol Kim*
- 459 - Lexical Ambiguity Resolution for Turkish in Direct Transfer Machine Translation Models, *A. Cüneyd TANTUĞ, Eşref ADALI, and Kemal OFLAZER*
- 716 - Design of A Feature Set For Face Recognition Problem, *Emre Akbaş and Fatoş T. Yarman-Vural*

**Session 1.2.C - Security and Cryptography-I**

Room: Petra

Session Chair: Berk Sunar

- 238 - An Anomaly Intrusion Detection Approach Using Cellular Neural Networks, *Zhongxue Yang and Adem Karahoca*
- 271- A Lookup Table Model for Time-Memory Trade-Off Attacks on Binary Additive Stream Ciphers, *Imran Erguler and Emin Anarim*
- 324- Improved Merkle Cryptosystem (IMC), *Attila Altay Yavuz, Emin Anarim, and Fatih Alagoz*
- 420 - Threshold Cryptography Based on Asmuth-Bloom Secret Sharing, *Kamer Kaya, Ali Aydın Selçuk, and Zahir Tezcan*
- 421- Capture Resilient ElGamal Signature Protocols, *Hüseyin Acan, Kamer Kaya, and Ali Aydın Selçuk*
- 456- A New Efficient Protocol for Authentication and Certificate Status Management in Personal Area Networks, *Chul Sur, Jong-Phil Yang, and Kyung Hyune Rhee*

**November 1, 2006**  
**Time Slot 16:00-17:40**

**Session 1.3.A - Mobile Computing**

Room: Giza

Session Chair: Attila Gürsoy

- 209 - A Dynamic Service Range Management Strategy for Improving Mobile Multicast Protocol Performance, *Ping Wang, Yunze Cai, Jinjie Huang, and Xiaoming Xu*
- 245 - A Survey of Major Challenges and Future Directions for Next Generation Pervasive Computing, *Yong-Bin Kang and Yusuf Pisan*
- 360 - Camera-Based Virtual Environment Interaction on Mobile Devices, *Tolga Çapın, Antonio Haro, Vidya Setlur, and Stephen Wilkinson*
- 380 - A Cost Model for an Adaptive Cell-Based Index Structure, *Wonik Choi, Jinseok Chae, Nam-Joong Kim, and Mee Young Sung*
- 435 - Positioning Method for Outdoor Systems in Wireless Sensor Networks, *Namkoo Ha and Kijun Han*

**Session 1.3.B - Computer Architecture**

Room: Babylon-1

Session Chair: William Knottenbelt

- 108 - Low-Cost Microarchitectural Techniques for Enhancing the Prediction of Return Addresses on High-Performance Trace Cache Processors, *Yunhe Shi, Emre Özer, and David Gregg*
- 164 - Recovery Logics for Speculative Update Global and Local Branch History, *Jong Wook Kwak and Chu Shik Jhon*
- 327 - An ILP Formulation for Task Scheduling on Heterogeneous Chip Multiprocessors, *Suleyman Tosun, Nazanin Mansouri, Mahmut Kandemir, and Ozcan Ozturk*
- 386 - Hardware Designs for Local Alignment of Protein Sequences, *Mustafa Gök and Çağlar Yılmaz*
- 662 - A New Model of BAM: Alpha-Beta Bidirectional Associative Memories, *María Elena Acevedo-Mosqueda, Cornelio Yáñez-Márquez, and Itzamá López-Yáñez*

**Session 1.3.C - Data Mining & Performance Evaluation**

Room: Petra

Session Chair: Nikola Stojanovic

- 285 - Prediction of Moving Object Location Based on Frequent Trajectories, *Mikolaj Morzy*
- 649 - A Framework for Visualizing Association Mining Results, *Gürdal Ertek and Ayhan Demiriz*
- 470 - Computing the steady-state distribution of G-networks with synchronized partial flushing, *J.M. Fourneau and F. Quessette*
- 651 - Worst-case Analysis of Router Networks with Rival Queueing Models, *Nalan Gülpınar, Pete Harrison, and Berç Rustem*

**November 2, 2006**  
**Time Slot: 09:00-10:40**

**Session 2.1.A - Computer Graphics-II**

Room: Giza

Session Chair: Tolga Çapın

- 347 - Applying Natural Neighbor Coordinates for Electromagnetic Tracker Calibration, *Yi Li, Weidong Chen, Dongming Lu, and Lei Zhao*
- 578 - Minkowski Sum Based Octree Generation for Triangular Meshes, *Engin Deniz Diktas. and Ali Vahit Şahiner*
- 426 - Hardware-Oriented Visualisation of Trees, *C. Rebollo, I. Remolar, M. Chover, and J. Gumbau*
- 636 - A Multi-resolution Technique for Real-time Animation of Large Crowds, *Ingu Kang, Young-Ik Eom, and JungHyun Han*
- 685 - A Framework for Working with Digitized Cultural Heritage Artifacts, *Can Ozmen and Selim Balcisoy*

**Session 2.1.B - Information Retrieval**

Room: Babylon-1

Session Chair: Uğur Sezerman

- 280 - A Target Oriented Agent to Collect Specific Information in A Chat medium, *Cemal Köse and Özcan Özyurt*
- 581 - Algorithms for Within-Cluster Searches Using Inverted Files, *Ismail Sengor Altingovde, Fazli Can, and Özgür Ulusoy*
- 595 - Effect of Inverted Index Partitioning Schemes on Performance of Query Processing in Parallel Text Retrieval Systems, *B. Barla Cambazoglu, Aytul Catal, and Cevdet Aykanat*
- 596 - Exploiting social networks dynamics for P2P resource organisation, *Vincenza Carchiolo, Michele Malgeri, Giuseppe Mangioni, and Vincenzo Nicosia*
- 597 - Security Considerations in e-Cognocracy, *Joan Josep Piles, José Luis Salazar, José Ruiz, and José María Moreno-Jiménez*

**Session 2.1.C - Computer Networks-II**

Room: Petra

Session Chair: Krzysztof Walkowiak

- 342 - Dual-level Traffic Smoothing Technique over Switched Ethernet for Hard Real-Time Communication, *Hai Jin, Minghu Zhang, and Pengliu Tan*
- 405 - A Model of a Packet Aggregation System, *Jung Ha Hong, Oleg Gusak, Neal Oliver, and Khosrow Sohraby*
- 476 - On the Use of Principle Component Analysis for the Hurst Parameter Estimation of Long-Range Dependent Network Traffic, *Melike Erol, Tayfun Akgul, Sema Oktug, and Suleyman Baykut*
- 539 - Throughput analysis of UDP and VPN Traffic in 802.11g networks, *Süheyla İkiz and YM Erten*
- 562 - Path Loss Rate Driven Burst Assembly in OBS Networks, *Burak Kantarcı and Sema Oktug*

**Time Slot: 11:10-12:10**

**Invited Talk** - Advanced Mixed Reality Technologies for Surveillance and Risk Prevention Applications, *Daniel Thalmann*

Room: Giza

Session Chair: Selim Balcısoy

**November 2, 2006**  
**Time Slot: 13:30-14:30**

**Invited Talk** - Analysis of Automated Auctions, *Erol Gelenbe*

Room: Giza

Session Chair: Yakup Paker

**Time Slot: 15:00-17:00**

### **Session 2.2.A - Computer Vision-I**

Room: Giza

Session Chair: Fatoş T. Yarman-Vural

- 149 - Pixel Domain Spatio-Temporal Denoising for Archive Videos, *M. Kemal Güllü, Oğuzhan Urhan, and Sarp Ertürk*
- 151 - Fast Sub-Pixel Motion Estimation by means of One-Bit Transform, *Orhan Akbulut, Oğuzhan Urhan, and Sarp Ertürk*
- 178 - Neighborhood Decomposition of Convex Structuring Elements for Mathematical Morphology on Hexagonal Grid, *Syng-Yup Ohn*
- 335 - Automatic segmentation of the liver in CT images using a model of approximate contour, *Marcin Ciecholewski and Krzysztof Debski*
- 388 - Block Motion Estimation Using Modified Two-Bit Transform, *Begüm Demir and Sarp Ertürk*
- 412 - 3D Face Tracking using Appearance Registration and Robust Iterative, Closest Point Algorithm, *Fadi Dornaika and Angel D. Sappa*

### **Session 2.2.B - Algorithms and Theory-II**

Room: Babylon-1

Session Chair: Pierre Flener

- 475 - Unambiguous 3D Measurements by a Multi-Period Phase Shift Method, *E. Lilienblum and B. Michaelis*
- 535 - Hybrid Techniques for Dynamic Optimization Problems, *Demet Ayvaz, Haluk Topcuoglu, and Fikret Gurgen*
- 593 - Minimizing the Search Space for Shape Retrieval Algorithms, *M. Abdullah-Al-Wadud and Oksam Chae*
- 635 - Decision Support For Packing In Warehouses, *Gürdal Ertek and Kemal Kılıç*
- 695 - A Fast Partial Distortion Elimination Algorithm Using Selective Matching Scan, *Jong-Nam Kim, Tae-Kyung Ryu, and Yongjae Jeong*
- 705 - Variable Neighborhood Search for the Orienteering Problem, *Zühal Sevklı and F. Erdoğan Sevilgen*

### **Session 2.2.C - Security and Cryptography-II**

Room: Petra

Session Chair: Albert Levi

- 488 - A New Image Encryption Algorithm Based on One-Dimensional Polynomial Chaotic Maps, *Amir Akhavan, Hadi Mahmodi, and Afshin Akhshani*
- 513 - A Non-committing Encryption Scheme Based on Quadratic Residue, *Feiyu Lei, Wen Chen, and Kefei Chen*
- 558 - Biometric Cryptosystem Using Online Signatures, *Alisher Kholmatov and Berrin Yanikoglu*
- 589 - Finite Field Polynomial Multiplication in the Frequency Domain with Application to Elliptic Curve Cryptography, *Selçuk Baktır and Berk Sunar*
- 628 - A Threshold Proxy Signature Scheme with Nonrepudiation and Anonymity, *Yuan Yumin*
- 668 - Deterministic Analysis of Balancedness in Symmetric Cryptography, *Candelaria Hernández-Goya and Amparo Fúster-Sabater*

**November 3, 2006**  
**Time Slot: 09:00-10:40**

**Session 3.1.A - Software Engineering**

Room: Giza

Session Chair: Guy-Vincent Jourdan

- 215 - Realism in Project-Based Software Engineering Courses: Rewards, Risks, and Recommendations, *Pierre Flener*
- 418 - Problems of Adiabatic Quantum Program Design, *Evgeniya Khusnitdinova and A.C. Cem Say*
- 482 - Modified Cognitive Complexity Measure, *Sanjay Misra*
- 492 - Coverage-Based, Prioritized Testing Using Neural Network Clustering, *Nida Gökçe, Mubariz Eminov, and Fevzi Belli*
- 545 - Component Oriented Design Based on Axiomatic Design Theory and COSEML, *Cengiz Togay and Ali H. Dogru*

**Session 3.1.B - Parallel and Distributed Computing-I**

Room: Babylon-1

Session Chair: Cevdet Aykanat

- 188 - Formal Description of a Runtime Infrastructure for Automatic Distribution of Programs, *Omid Bushehrian and Saeed Parsa*
- 443 - Super-peer Selection based Framework using Dynamic Capacity and Similarity, *Suhong Min and Dongsub Cho*
- 519 - A General Graph Model For Representing Exact Communication Volume in Parallel Sparse Matrix-Vector Multiplication, *Aleksandar Trifunović and William Knottenbelt*
- 521 - Safety of Rollback-Recovery Protocol Maintaining WFR Session Guarantee, *Jerzy Brzeziński, Anna Kobusińska, and Jacek Kobusiński*
- 552- 3-D Parallel Implementation of the Wave-Equation PML Algorithm Using Distributed System, *Oyku Akaydin and Omar Ramadan*

**Session 3.1.C - Bioinformatics**

Room: Petra

Session Chair: Berrin Yanıkoğlu

- 173 - Extracting gene regulation information from microarray time-series data using hidden Markov models, *Osman N. Yoğurtçu, Engin Erzin, and Attila Gürsoy*
- 176 - Asymptotical Lower Limits on Required Number of Examples for Learning Boolean Networks, *Osman Abul, Reda Alhaji, and Faruk Polat*
- 394 - Modified Association Rule Mining Approach for the MHC-Peptide Binding Problem, *Galip Gürkan Yardımcı, Alper Küçükural, Yücel Saygın, and Uğur Sezerman*
- 569 - Prediction and Classification for GPCR Sequences Based on Ligand Specific Features, *Bekir Ergüner, Özgün Erdoğan, and Uğur Sezerman*
- 690 - An efficient algorithm for the identification of repetitive variable motifs in the regulatory sequences of co-expressed genes, *Abanish Singh and Nikola Stojanovic*

**Time Slot: 11:10-12:10**

**Invited Talk** - Requirements Engineering as a Key to Holistic Software Quality, *Manfred Broy*

Room: Giza

Session Chair: Fevzi Belli

**November 3, 2006**  
**Time Slot: 13:30-14:30**

**Invited Talk** - Information and Communication Technologies in the EU's Seventh Framework Programme, *Eric Badiqué*

Room: Giza

Session Chair: Erkey Savaş

**Time Slot: 15:00-16:20**

### **Session 3.2.A - Computer Vision-II**

Room: Giza

Session Chair: Yücel Saygın

- 537 - Video as Input: Spiral Search with the Sparse Angular Sampling, *Tatiana V. Evreinova, Grigori Evreinov, and Roope Raisamo*
- 544 - An Adept Segmentation Algorithm and Its Application to The Extraction of Local Regions Containing Fiducial Points, *Erhan AliRiza Ince and Syed Amjad Ali*
- 615 - Lossless Compression of Volumetric Medical Data, *Samy Ait-Aoudia, Fatma-Zohra Benhamida, and Mohamed-Azzeddine Yousfi*
- 698 - Identification of Luminal and Medial Adventitial Borders in Intravascular Ultrasound Images Using Level Sets, *Ali Iskurt, Sema Candemir, and Yusuf Sinan Akgul*

### **Session 3.2.B - Parallel and Distributed Computing-II**

Room: Babylon-1

Session Chair: Attila Gürsoy

- 579 - Trustworthy Distributed Algorithm Design to Defend Distance Cheating in Link- weighted ALM, *Dan Li, Jianping Wu, Yong Cui, Jiangchuan Liu, and Ke Xu*
- 585 - jEQN a Java-based Language for the Distributed Simulation of Queueing Networks, *Andrea D'Ambrogio, Daniele Gianni, and Giuseppe Iazeolla*
- 594 - Exact Performance Measures for Peer-to-Peer Epidemic Information Diffusion, *Öznur Özkasap, Emine Şule Yazıcı, Selda Küçükçifçi, and Mine Çağlar*
- 658 - A Leader Election Protocol for Timed Asynchronous Distributed Systems, *Amirhasan Amintabar, Alexander Kostin, and Ljudmila Ilushechkina*

### **Session 3.2.C - Embedded Systems**

Room: Petra

Session Chair: Haluk Topçuoğlu

- 506 - Power-Aware Processors for Wireless Sensor Networks, *Gürhan Küçük and Can Başaran*
- 522 - Effects of Asynchronism and Neighborhood Size on Clustering in Self-Propelled Particle Systems, *Andaç T. Şamiloğlu, Veysel Gazi, and Buğra Koku*
- 548 - Virtual-ROM: a New Demand Paging Component for RTOS and NAND Flash Memory Based Mobile Devices, *Hyojun Kim, Jihyun In, DongHoon Ham, SongHo Yoon, and Dongkun Shin*
- 633 - Model-Driven Development of RTOS-based Embedded Software, *Ji Chan Maeng, Dongjin Na, Yongsoon Lee, and Minsoo Ryu*