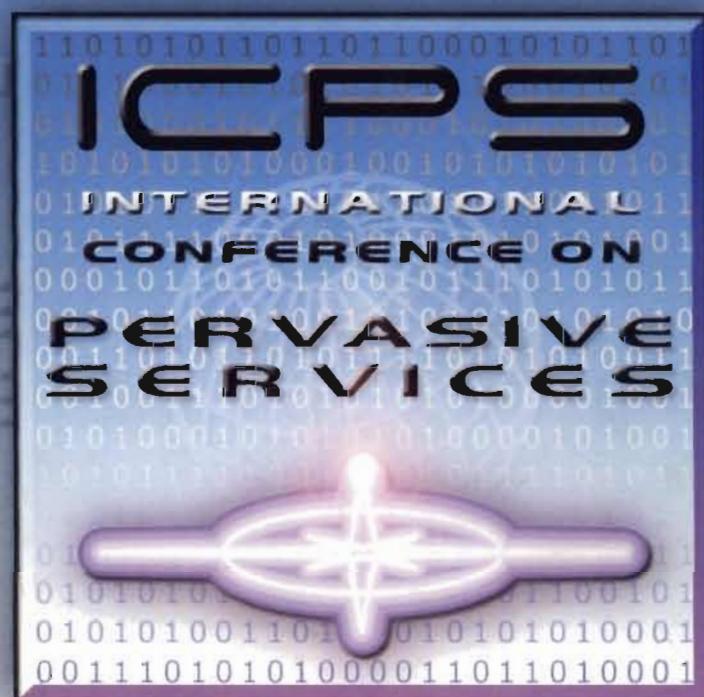


PERVASIVE SERVICES



IEEE
COMPUTER
SOCIETY



BEIRUT , LEBANON
JULY 19-23, 2004

Proceedings

The IEEE/ACS International Conference on Pervasive Services

ICPS2004

July 19 – 23, 2004

Center for Advanced Mathematical Sciences (CAMS)
American University of Beirut
Beirut, Lebanon



Table of Contents

The IEEE/ACS International Conference on Pervasive Services, ICPS2004

General Co-Chairs' Message.....	vii
Program Co-Chairs' Message	viii
Organizing Committees	ix
Reviewers	x
Keynote I	
Chair: Mazin Yousif	
Hassan Alkhatib: <i>Virtual Networks - Next Generation Platform for Network Services</i>.....	3
Session 1: Invited Papers	
Chair: Ramzi Haraty	
Autonomic Computing; Research Challenges and Opportunities	7
<i>Salim Hariri</i>	
Privacy-Preserving Location-Dependent Query Processing	9
<i>Mikhail Atallah & Keith Frikken</i>	
"How long is your belt?" Towards a Single Device for Multiple Functions	19
<i>Walid Najjar</i>	
Wireless smart implants dedicated to Multichannel monitoring and Microsimulation	21
<i>Mohamad Sawan</i>	
Session 2: Pervasive Services	
Chair: Mikhail Atallah	
A Programmable Structure for Pervasive Computing	29
<i>Ingar Maehlum Arntzen and Dag Johansen</i>	
Context-Aware Computing: A Guide for the Pervasive Computing Community	39
<i>Ghita Kouadri Mostéfaoui, Jacques Pasquier-Rocha and Patrick Brézillon</i>	
PALLAS: A querying Interface for Pervasive computing using Handheld Devices.....	49
<i>Stavros Polyviou, Paraskevas Evripidou and George Samaras</i>	
Session 3: Discovery	
Chair: Manish Parashar	
An Acoustic Identification Scheme for Location Systems	61
<i>Raja Jurdak, Cristina Videira Lopes and Pierre Baldi</i>	
Context-Aware Service Provisioning	71
<i>Soraya Kouadri Mostéfaoui & Béat Hirsbrunner</i>	
Next Generation Vehicle Network (NVGN): Internet Access Utilizing Dynamic	
Discovery Protocols	81
<i>Rami Baroody, Nizar Al-holou, Asif Rashid and Salim Hariri</i>	
Keynote II	
Chair: Salim Hariri	
Albert Zomaya: <i>Opportunities for Grid Computing in Bio- and Health-Informatics</i>	91
Session 4: Security	
Chair: Ahmed Helmy	
A Dynamic Honeypot Design for Intrusion Detection.....	95
<i>Iyad Kuwatly, Malek Sraj, Zaid Al-Masri and Hassan Artail</i>	

Abnormality Metrics to Detect and Protect against Network Attacks.....	105
<i>Guangzhi Qu, Salim Hariri, Santosh Jangiti, Suhail Hussain, Seungchan Oh, Samer Fayssal and Mazin Yousif</i>	
TRUMMAR - A Trust Model for Mobile Agent Systems Based on Reputation	113
<i>Ghada Derbas, Ayman Kayssi, Hassan Artail and Ali Chehab</i>	
Reconfigurable Computing for RC6 Cryptography	121
<i>May Itani and Hassan Diab</i>	
Session 5: Management	
Chair: Esma Aimeur	
Design Principles for Inducing Reactivity in Ubiquitous Environments	131
<i>Fahd Al-Bin-Ali</i>	
The Use of a Hopfield Neural Network in Solving the Mobility Management Problem	141
<i>Javid Taheri and Albert Y. Zomaya</i>	
An Intelligent Interface for the Dynamic Negotiation of QoS in ARCADE	151
<i>Zeina Jrad and Francine Krief</i>	
Panel Session: Pervasive Services in Vertical Sciences - Exploration & Challenges	
Panel Moderator: Salim Hariri	
Panelists: Albert Zomaya, Tarek El-Ghazawi & Mohamad Sawan	
Keynote III	
Chair: Hassan Diab	
Tarek El-Ghazawi: <i>Reconfigurable Supercomputing</i>	163
Session 6: Network Sensors and Performance	
Chair: Madhu Jayaprakash	
Analysis of Wired Short Cuts in Wireless Sensor Networks	167
<i>Rohan Chitradurga and Ahmed Helmy</i>	
RUGGED: RoUting on finGerprint Gradients in sEnsor Networks.....	179
<i>Jabed Faruque and Ahmed Helmy</i>	
Internet Performance Modeling Using Mixture Dynamical System Models	189
<i>Z. Liu, J. Almhana, V. Choulakian and R. McGorman</i>	
A Scalable High-performance Router Platform Supporting Dynamic Service Extensibility on Network and Host Processors.....	199
<i>Lukas Ruf, Ralph Keller and Bernhard Plattner</i>	
Session 7: Miscellaneous	
Chair: Ghita Kouadri Mostéfaoui	
Hybrid Cache Invalidation Schemes in Mobile Environments	209
<i>Yuliang Bao, Reda Alhajj and Ken Barker</i>	
Opportunistic Application Flows in Pervasive Environments (Invited Paper).....	219
<i>N. Jiang, C. Schmidt, V. Matossian and M. Parashar</i>	
A Distributed Framework for Relaying Stereo Vision for Telerobotics	221
<i>M. Al-Mouhamed, O. Toker, A. Iqbal and M. Nazeeruddin</i>	
Towards a Unified Graph-Based Framework for Dynamic Component-Based Architectures Descriptions in Z.....	227
<i>Imen Loulou, Ahmed Hadj Kacem, Mohamed Jmaiel and Khalil Drira</i>	
Poster Session	
Modeling Jini-UPnP Bridge Using Rapid ADL	237
<i>Ahmed Sameh and Rehab El-Kharbouthly</i>	

Simulation Performance Evaluation of Energy Efficient Routing Protocol for Mobile Ad Hoc Networks	238
<i>Djamel Djenouri and Nadjib Badache</i>	
A Method of Capturing System Stableness Degree in Resource Discovery and Interaction	239
<i>Tang Shancheng and Hou Yibin</i>	
Secure Pervasive Computing without a Trusted Third Party	240
<i>Asad Amir Pirzada and Chris McDonald</i>	
Middies: Passive Middleware Abstractions for Pervasive Computing Environments	241
<i>Daniel Cutting, Adam Hudson and Aaron Quigley</i>	
Self-Deployment and Self-Configuration of Pervasive Network Services.....	242
<i>Huoping Chen, Salim Hariri, Byoung Kim, Yeliang Zhang and Mazin Younis</i>	