

# **2010 Fourth International Conference on Digital Society**

**(ICDS 2010)**

**St. Maarten, Netherlands Antilles  
10-16 February 2010**



**IEEE Catalog Number: CFP1073B-PRT**  
**ISBN: 978-1-4244-5805-9**

# 2010 Fourth International Conference on Digital Society

## ICDS 2010

### Table of Contents

|                                 |        |
|---------------------------------|--------|
| ICDS 2010 Preface.....          | .xi    |
| ICDS 2010 Committees .....      | .xiii  |
| ICDS 2010 Reviewers.....        | .xvi   |
| CYBERLAWS 2010 Preface.....     | .xviii |
| CYBERLAWS 2010 Committees ..... | .xx    |
| CYBERLAWS 2010 Reviewers.....   | .xxiii |

---

#### ICDS 1: eGovernment Services in the Context of Digital Society I

|  |    |
|--|----|
| Mobile Government in Action at Local Councils: A Case Study .....  | 1  |
| <i>Shadi Al-Khamasey and Elaine Lawrence</i>   |    |
| Intelligent e-Tools for Wound Image Understanding and Evaluation .....                                       | 8  |
| <i>Augustin Prodan, Madalina Rusu, Cornelia Revnic, Remus Campean,<br/>Paulina Mitrea, and Rodica Prodan</i> |    |
| ICT for Good: Opportunities, Challenges and the Way Forward .....  | 14 |
| <i>Birhanu Eshete, Andrea Mattioli, Adolfo Villafiorita, and Komminist Weldemariam</i>                       |    |
| Combining Biometric ID Cards and Online Credit Card Transactions .....                                       | 20 |
| <i>Muhammet Yildiz and Mehmet Göktürk</i>  |    |

#### ICDS 2: eGovernment Services in the Context of Digital Society II

|   |    |
|---|----|
| The Future of the Internet: Tussles and Challenges in the Evolution Path<br>as Identified ..... | 25 |
| <i>Borka Jerman Blažič</i>  |    |
| Electronic Voting Using Identity Based Cryptography .....                                       | 31 |
| <i>Gina Gallegos-Garcia, Roberto Gomez-Cardenas, and Gonzalo I. Duchon-Sanchez</i>              |    |
| The All-In Publication Policy .....   | 37 |
| <i>Christoph Bartneck</i>   |    |

## ICDS 3: Networking and Telecommunications I

|  |    |
|--|----|
| Improving the Acknowledgment Handling of SCTP .....  | 41 |
| <i>Irene Rüngeler, Michael Tüxen, and Erwin P. Rathgeb</i>                                 |    |
| Service Discovery in Future Open Mobile Environments .....                                 | 47 |
| <i>Nor Shahniza Kamal Bashah, Ivar Jørstad, and Do van Thanh</i>                           |    |
| A New Paradigm of CAC Dimensioning for VoIP Traffic over Wireless Access<br>Networks ..... | 54 |
| <i>Kiril Kassev, Yakim Mihov, Adriana Kalaydzhieva, and Boris Tsankov</i>                  |    |

## ICDS 4: Networking and Telecommunications II

|  |    |
|--|----|
| A Study of Time between Retried Calls in Voice over Internet Protocol<br>Networks .....  | 60 |
| <i>Zoltán Gáspár and Izabella Gócza</i>  |    |
| An Efficient DSP Implantation of Wavelet Audio Coding for Digital<br>Communication .....   | 66 |
| <i>Gaoyong Luo</i>   |    |
| A Modular UPnP Proxy for Secure Remote Access .....  | 72 |
| <i>Tobias Wegner</i>   |    |
| Scheduling and Channel Assignment of Backhaul Traffic in Infrastructure<br>Wireless Mesh Networks with Near-Minimal Delay and Jitter ..... | 78 |
| <i>T. H. Szymanski</i>   |    |

## ICDS 5: Internet and Web Services I

|   |     |
|---|-----|
| A Crawler for Local Search .....  | 86  |
| <i>Pedro Huitema and Perry Fizzano</i>  |     |
| Reserving Clinical Resources for Healthcare Processes .....                                     | 92  |
| <i>Juha Puustjärvi and Leena Puustjärvi</i>   |     |
| Inernet Tool for Electronic Circuit Analysis .....  | 98  |
| <i>Jaroslav Kadlec, Lukáš Popelka, Radek Kuchta, and Radimír Vrba</i>                           |     |
| The Future of Online Distance Education (ODE) in Public Universities<br>in Quebec, Canada ..... | 102 |
| <i>Bastien Sasseville</i>   |     |

## ICDS 6: Internet and Web Services II

|  |     |
|--|-----|
| How to Summarize an OWL Domain Ontology .....  | 106 |
| <i>Christian Kop</i>   |     |
| The Metric Model for Personal Information Disclosure .....   | 112 |
| <i>Ryosuke Yasui, Atsushi Kanai, Takashi Hatashima, and Keiichi Hirota</i>   |     |
| Evaluation of WS-* Standards Based Interoperability of SOA Products for<br>the Hungarian e-Government Infrastructure ..... | 118 |
| <i>Balázs Simon, Zoltán László, Balázs Goldschmidt, Károly Kondorosi,<br/>and Péter Risztics</i>                           |     |

## ICDS 7: Social Networking

|   |     |
|---|-----|
| Detecting Opinion Leaders and Trends in Online Communities .....  | 124 |
| <i>Freimut Bodendorf and Carolin Kaiser</i>   |     |
| Aiding Social Interaction via a Mobile Peer to Peer Network .....   | 130 |
| <i>Soulakshmee D. Nagowah</i>   |     |
| Relationship between Mobile Switching Center Information and Social<br>Behavior in Week Days and Holidays in a Telecommunication Area ..... | 136 |
| <i>Rasim Aguliyev, Yadigar Imamverdiyev, Hamid Zargari, and Saeid Bairami</i>   |     |
| Public Internet Portal for Primary and High Schools .....   | 139 |
| <i>Radek Kuchta, Jaroslav Kadlec, and Radimir Vrba</i>  |     |

## ICDS 8: Computation and eCollaboration

|  |     |
|--|-----|
| Towards a Virtual Organisation for Computational Intelligence .....                      | 144 |
| <i>Wajeeha Khalil and Erich Schikuta</i>   |     |
| Proposing a Federated Approach to Global Software Development .....                      | 150 |
| <i>Ozgur Tufekci, Semih Cetin, and Ali Arifoglu</i>                                      |     |
| Information Communication Technologies Role in Extended and Dynamics<br>Clustering ..... | 158 |
| <i>Rimantas Gatautis, Elena Vitkauskaitė, and Takis Damaskopolous</i>                    |     |
| Towards Learning Domain Ontology from Legacy Documents .....                             | 164 |
| <i>Yijian Wu, Shaolei Zhang, and Wenyun Zhao</i>   |     |

## ICDS 9: eDefense for Security and Protection

|  |     |
|--|-----|
| Detecting Return-to-libc Buffer Overflow Attacks Using Network Intrusion<br>Detection Systems .....              | 172 |
| <i>David J. Day, Zhengxu Zhao, and Minhua Ma</i>   |     |
| Is McAfee SecurityCenter/Firewall Software Providing Complete Security<br>for Your Computer? .....               | 178 |
| <i>Sirisha Surisetty and Sanjeev Kumar</i>   |     |
| Confidentiality Labeling Using Structured Data Types .....   | 182 |
| <i>Aljoša Jerman Blažič and Svetlana Šaljić</i>  |     |
| Performance of Windows XP, Windows Vista and Apple's Leopard Computers<br>under a Denial of Service Attack ..... | 188 |
| <i>Raja Sekhar Reddy Gade, Hari Vellalacheruvu, and Sanjeev Kumar</i>  |     |
| A Web Client Authentication System Using Smart Card for e-Systems: Initial<br>Testing and Evaluation .....       | 192 |
| <i>Shadi Aljawarneh, Maher Dababneh, Hiba Hosseney, and Eklass Alwadi</i>  |     |

## ICDS 10: Citizen-Centric Disruptive and Enabling Technologies

|   |     |
|---|-----|
| Children’s Information Technology (IT) Use and Their Physical, Cognitive, Social and Psychological Well-Being ..... | 198 |
| <i>Linda Jackson, Edward A. Witt, Alex von Eye, Hiram E. Fitzgerald, and Yong Zhao</i>                              |     |
| Body Sensor Networks for Mobile Health Monitoring: Experience in Europe and Australia .....                         | 204 |
| <i>Val Jones, Valerie Gay, and Peter Leijdekkers</i>  |     |
| Context Information Refinement for Pervasive Medical Systems .....  | 210 |
| <i>Dawit Bekele, Birhanu Eshete, Adolfo Villafiorita, and Komminist Weldemariam</i>                                 |     |
| Improving Recall and Precision of a Personalized Semantic Search Engine for E-learning .....                        | 216 |
| <i>Oifa Nasraoui and Leyla Zhuhadar</i>   |     |

## ICDS 11: eCommerce and eBusiness

|  |     |
|--|-----|
| The Level of International Business and Its Association with Different Internet E-Commerce Practices ..... | 222 |
| <i>Luc Cassivi, Pierre-Majorique Léger, Michael Wybo, and Pierre Hadaya</i>                                |     |
| Doubts about Digitization: An Explorative Case Study .....   | 226 |
| <i>Ching-Cha Hsieh and Chia-Hui Lo</i>   |     |
| Credit Fraud Detection in the Banking Sector in UK: A Focus on E-Business .....                            | 232 |
| <i>Md Delwar Hussain Mahdi, Karim Mohammed Rezaul, and Muhammad Azizur Rahman</i>                          |     |
| E-Banking and Its Impact on Banks' Performance and Consumers' Behaviour .....                              | 238 |
| <i>Aqeel Ahmed, Karim Mohammed Rezaul, and Muhammad Azizur Rahman</i>                                      |     |

## ICDS 12: Digital Analysis and Processing I

|  |     |
|--|-----|
| Customer Segmentation Architecture Based on Clustering Techniques .....  | 243 |
| <i>Guillem Lefait and Tahar Kechadi</i>  |     |
| Implementing an ITIL-Based IT Service Management Measurement System .....  | 249 |
| <i>Antti Lahtela, Marko Jäntti, and Jukka Kaukola</i>  |     |
| A Fuzzy Logic System for Classification of the Lung Nodule in Digital Images in Computer Aided Detection .....       | 255 |
| <i>Rahil Hosseini, Jamshid Dehmeshki, Sarah Barman, Mahdi Mazinani, Anne-Marie Jouannic, and Salah Qanadli</i>       |     |
| Compression of Digital Medical Images Based on Multiple Regions of Interest .....                                    | 260 |
| <i>M. Firoozbakht, J. Dehmeshki, M. Martini, Y. Ebrahimdoost, H. Amin, M. Dehkordi, A. Youannic, and SD. Qanadli</i> |     |
| Analysis of Deputy and Party Similarities through Hierarchical Clustering .....                                      | 264 |
| <i>Guillem Lefait and Tahar Kechadi</i>  |     |

## ICDS 13: Digital Analysis and Processing II

|  |     |
|--|-----|
| Medical Image Segmentation Using Active Contours and a Level Set Model:<br>Application to Pulmonary Embolism (PE) Segmentation ..... | 269 |
| <i>Y. Ebrahimdoost, J. Dehmeshki, T. S. Ellis, M. Firoozbakht, A. Youannic,<br/>and S.D. Qanadli</i>                                 |     |
| Automatic Segmentation of Soft Plaque by Modeling the Partial Volume<br>Problem in the Coronary Artery .....                         | 274 |
| <i>Mahdi Mazinani, J. Dehmeshki, Rahil Hosseini, T. Ellis, and Salah D. Qanadli</i>  |     |
| Utilization of an Image Specific Areas in Searching .....  | 279 |
| <i>Radoslav Fasuga, Petr Kašpar, and Martin Šurkovský</i>  |     |
| Visualizing Plot in 3D .....   | 285 |
| <i>Teresa Dobson, Piotr Michura, and Stan Ruecker</i>  |     |
| Automated Detection of Peripheral Arteries in CTA Datasets .....   | 290 |
| <i>Adina Ion, J. Dehmeshki. H. Amin, A. Jouannic, and S. Qanadli</i>   |     |

## CYBERLAWS 1: ACCESSIBILITY: Digital Divide, e-Democracy and e-Government

|   |     |
|---|-----|
| FLOSS for the Canadian Public Sector: Open Democracy .....    | 294 |
| <i>Mark Perry and Thomas Margoni</i>                          |     |
| Interpreting Network Discrimination in the CRTC and FCC ..... | 301 |
| <i>Mark Perry and Thomas Margoni</i>                          |     |
| The Digital Divide and Internet Voting Acceptance .....       | 307 |
| <i>France Bélanger and Lemuria Carter</i>                     |     |
| Regulatory Measures to Support eDemocracy .....               | 311 |
| <i>Lasse Berntzen and Evika Karamagioli</i>                   |     |

## CYBERLAWS 2: PRIVACY: e-Anonymity and e-Identity

|   |     |
|---|-----|
| Content Filtering and the New Censorship .....              | 317 |
| <i>Lilian Edwards</i>                                       |     |
| Squaring the Circle of Smart Surveillance and Privacy ..... | 323 |
| <i>Joseph A. Cannataci</i>                                  |     |

## CYBERLAWS 3: PROTECTION: e-Fraud Prevention, e-Law, e-Punishment, e-International relations

|   |     |
|---|-----|
| e-Fraud Prevention Based on the Self-Authentication of e-Documents .....                                  | 329 |
| <i>J. M. Blackledge and E. Coyle</i>  |     |
| Legal Issues Regarding Distributed and High Performance Computing<br>in Geosciences and Exploration ..... | 339 |
| <i>Claus-Peter Rückemann</i>  |     |
| E-Banking and e-Fraud: A Comparison Investigation in Jamaica and the UK .....                             | 345 |
| <i>Clare Chambers and Umut Turksen</i>  |     |

Modeling and Analysis of Laws Using BPR and Goal-Oriented Framework .....353  
*Adolfo Villafiorita, Komminist Weldemariam, Angelo Susi, and Alberto Siena*

**Author Index** .....359