2013 IEEE 38th Conference on Local Computer Networks Workshops

(LCN Workshops 2013)

Sydney, Australia
21-24 October 2013

goSMART: Welcome and Introduction

SenseApp: Welcome and Introduction

09:00 - 10:30

P2MNET: QoS Analysis and Performance Evaluation

Chair: Hossam S. Hassanein (Queen's University, Canada)

Predicting Short 802.11 Sessions From RADIUS Usage Data ⋯⋯%
Anisa Allahdadi (INESC TEC, Portugal); Ricardo Morla (University of Porto, Portugal); Ana C Aguiar (University of Porto & Instituto de Telecomunicações, Portugal); Jaime Cardoso (Faculty of Engineering and INESC TEC, Portugal)

A Performance Study of Hybrid Protocols for Opportunistic Communications ⋯⋯-
Ranjana Pathak (The University of Queensland, Australia); Peizhao Hu (NICTA, Australia); Jadwiga Indulska (The University of Queensland, Australia); Marius Portmann (University of Queensland, Australia); Saaidal Azzuhri (University of Queensland, Australia)

QoS Analysis and Evaluations: Improving Cellular-based Distance Education ⋯⋯%+
Farnaz Farid (University of Western Sydney, Australia); Seyed Shahrestani (University of Western Sydney, Australia); Chun Ruan (UWS, Australia)

09:00 - 09:40

goSMART: Session 1

Chair: Chun Tung Chou (University of New South Wales, Australia)

SocialCycle: What Can a Mobile App Do to Encourage Cycling? ⋯⋯&(
Karla Felix Navarro (University of Technology Sydney, Australia); Valérie Gay (University of Technology, Sydney, Australia); Loic Golliard (University of Technology Sydney, Australia); Benjamin Johnston (University of Technology Sydney, Australia); Peter Leijdekkers (University of Technology, Sydney, Australia); Ewan Vaughan (University of Technology Sydney, Australia); Xun Wang (University of Technology Sydney, Australia); Mary-Anne Williams (University of Technology Sydney, Australia)

Sharing Risk-Awareness for Reliable Resource Management in Smart Buildings ⋯⋯ %
Satoko Itaya (NICT, Japan); Peter Davis (Telecognix Corporation, Japan); Rie Tanaka (NEC Corporation, Japan); Shin-ichi Doi (NEC Corporation, Japan); Keiji Yamada (NEC C&C Innovation Research Laboratories, Japan)

09:00 - 10:30

SenseApp: Applications for a Smarter Planet

Chair: Neil W Bergmann (University of Queensland, Australia)

Going All the Way - Detecting and Transmitting Events with Wireless Sensor Networks in Logistics `·····'` -
Sebastian Zöller (Technische Universität Darmstadt & Multimedia Communications Lab - KOM, Germany); Markus Wachtel (Technische Universität Darmstadt, Germany); Fabian Knapp (Technische Universität Darmstadt, Germany); Ralf Steinmetz (Technische Universität Darmstadt, Germany)

Processing and Visualizing Traffic Pollution Data in Hanoi City From a Wireless Sensor Network `·····(`,
Thieu Nga Pham (University of Civil Engineering, Vietnam); Dang Hai Hoang (Ministry of Information and Communications, Vietnam); Thorsten Strufe (TU Darmstadt, Germany); Quang Duc Le (Hanoi University of Civil Engineering, Vietnam); Phong Thanh Bui (Hanoi University of Civil Engineering, Vietnam); Nguyet Thi Thai (Hanoi University of Civil Engineering, Vietnam); Thuy Duong Le (Hanoi University of Civil Engineering, Vietnam); Immanuel Schweizer (Technische Universität Darmstadt, Germany)

HazeWatch: A Participatory Sensor System for Monitoring Air Pollution in Sydney `·····)` *
Vijay Sivaraman (University of New South Wales, Australia); James Carrapetta (University of New South Wales, Australia); Ke Hu (University of New South Wales, Australia); Blanca Gallego Luxan (University of New South Wales, Australia)

09:40 - 10:30

goSMART Keynote: Prof. Rajiv Khosla, La Trobe University, Australia

Emotionally Engaging Wellness Robot for Smart Cities
Room: Bennelong Point
Chair: Satoko Itaya (NICT, Japan)

Abstract: Wellness is important for development and sustainability of smart cities. This talk will share our experiences with design of Wellness robots like Sophie and Charlie and their trials in private homes in Australia. The talk will demonstrate integration of social design with technology design to enhance the subjective emotional well being of their human partners.

10:30 - 11:00

Coffee break

11:00 - 12:30

P2MNET: IEEE 802.11 and LTE Networks

Room: Farm Cove
Chair: Ehab S. Elmallah (University of Alberta, Canada)

Grassmannian Beamforming for Coordinated Multipoint Transmission in Multicell Systems `·····*)`
Nizar Zorba (QMIC, Qatar); Hossam S. Hassanein (Queen's University, Canada)

Implementation and Validation of Multimedia Broadcast Multicast Service for LTE/LTE-Advanced in OpenAirInterface Platform `·····+$`
Ngoc-Duy Nguyen (Eurecom, France); Raymond Knopp (Institut Eurecom, France); Navid Nikaein (Eurecom, France); Christian Bonnet (EURECOM, France)

HOF: A History-based Offloading Framework for LTE Networks Using Mobile Small Cells and Wi-Fi `·····++`
Mahmoud H. Qutqut (Queen's University, Canada); Fadi M. Al-Turjman (University of Guelph, Canada); Hossam S. Hassanein (Queen's University, Canada)

11:00 - 11:40

goSMART: Session 2

Room: Bennelong Point
Chair: Peter Davis (Telecognix Corporation, Japan)

Model-Free HVAC Control Using Occupant Feedback ˙˙˙˙¸ (
Sean Purdon (CSIRO, Australia); Branislav Kusy (Commonwealth Scientific and Industrial Research Organisation (CSIRO) ICT Centre, Australia); Raja Jurdak (Commonwealth Scientific and Industrial Research Organisation (CSIRO) ICT Centre, Australia); Geoffrey Werner Challen (Massachusetts Institute of Technology, USA)

A Framework for Massive Access and Radio Resource Management in Urban WLANs ˙˙˙˙¸ '
Stefan Aust (NEC Communication Systems, Ltd., Japan); R Venkatesha Prasad (TU Delft, India); Ignas G.M.M. Niemegeers (Delft University of Technology, The Netherlands)

11:00 - 12:00

SenseApp Keynote: Dr. Raja Jurdak, CSIRO, Australia

Continental-scale Tracking of Flying Foxes: Where delay tolerance meets resource constraints
Room: Port Jackson
Chair: Andreas Reinhardt (The University of New South Wales, Australia)

Abstract: Long-term outdoor localisation with battery-powered devices remains an unsolved challenge, mainly due to the high energy consumption of GPS modules. The use of inertial sensors and short-range radio can reduce reliance on GPS to prolong the operational lifetime of tracking devices, but they only provide coarse-grained control over GPS activity. An alternative yet promising approach is to use context-sensitive mobility models to guide scheduling and sampling decisions in localisation algorithms. In this talk, I will present our work towards continental-scale long-term tracking of flying foxes, as part of the National Flying Fox Monitoring Program in Australia, using a model-driven approach. At the core of our approach is the multimodal GPS-enabled Camazotz sensor node platform that has been designed at CSIRO for flying fox collars, with a cumulative weight just under 30g.
The project has already deployed tens of devices on live flying foxes, which have been operating in the field for several months. We are using the data from these devices to build mobility models and algorithms for designing the next generation of software, as we will progressively deploy more than 1000 nodes within the coming months. The progressive deployment of nodes coupled with delay tolerance, constrained resources, and incremental feature development raises interesting systems challenges and opportunities, which I will highlight. The talk will also provide a snapshot of the current data collection effort, and draw lessons from our activities in this area over the past 18 months.

11:40 - 12:20

goSMART: Panel Discussion

Sustainability Indicators for Smart Cities
Room: Bennelong Point
Chair: Satoko Itaya (NICT, Japan)

More than half of the world's population lives in urban areas today. The current trend of unprecedented migration from rural areas to urban centers is expected to continue in the near future. This increasing urbanization has placed continuous and increasing pressure upon infrastructure, residential and commercial properties, and social communities. Cities of the future can be models of environmental efficiency, because increased density and better management reduce the cost of service delivery, promote innovation, and enable prosperity through economic development.
Sustainability requires that the wellbeing of society - the combination of community liveability, environmental sustainability and economic prosperity - is maintained or improved over time. Measuring sustainability is about monitoring how each of these is tracking over time. In recent times, there has been a lot of interest on defining and quantifying suitable indicators for measuring sustainability of cities. In this panel, we will investigate the latest research in this domain and outline strategies for future research.

12:00 - 12:30

SenseApp: Understanding Frameworks, Protocols, Mechanisms, Components

Room: Port Jackson
Chair: Vijay Sivaraman (University of New South Wales, Australia)

A Smart Data Forwarding Method Based on Adaptive Levels in Wireless Sensor Networks ⸱⸱⸱⸱⸱*%$$*
Dang Hai Hoang (Ministry of Information and Communications, Vietnam); Thorsten Strufe (TU Darmstadt, Germany); Thieu Nga Pham (University of Civil Engineering, Vietnam); Hong Ngoc Hoang (TU Darmstadt, Germany); Chung Tien Nguyen (Academy of Cryptography Techniques, Vietnam); Van Tho Tran (Hanoi University of Civil Engineering, Vietnam); Immanuel Schweizer (Technische Universität Darmstadt, Germany)

Wireless Underwater Power and Data Transfer ⸱⸱⸱⸱⸱*%$(*
Neil W Bergmann (University of Queensland, Australia); Jarrod Trevathan (Giffith University, Australia); Jonathan Juergens (Leibniz University of Hannover, Germany); Liqun Hou (University of Queensland, Australia); Yunlong Wang (RMIT University, Australia)

12:20 - 12:30

goSMART: Conclusions and Wrap-Up

Room: Bennelong Point

12:30 - 13:30

Lunch break

13:30 - 15:00

P2MNET: Performance Evaluation of Wireless Networks

Room: Farm Cove
Chair: Fadi M. Al-Turjman (University of Guelph, Canada)

Rethinking Connectivity Restoration in WSNs Using Feedback From a Low-cost Mobile Sensor Network Testbed ⸱⸱⸱⸱⸱*%$,*
Shadi Janansefat (Southern Illinois University Carbondale, USA); Kemal Akkaya (Southern Illinois University Carbondale, USA); Izzet F Senturk (Southern Illinois University Carbondale, USA); Michael Gloff (Southern Illinois University, USA)

EE-MAC: Energy Efficient Sensor MAC Layer Protocol ⸱⸱⸱⸱⸱*%%**
Afraa Attiah (University of Central Florida, USA); Mustafa İ Akbaş (University of Central Florida, USA); Mainak Chatterjee (University of Central Florida, USA); Damla Turgut (University of Central Florida, USA)

Estimating Contention of IEEE 802.11 Broadcasts Based on Inter-Frame Idle Slots ⸱⸱⸱⸱⸱*%&$*
Quincy Tse (The University of Sydney & NICTA, Australia); Weisheng Si (University of Western Sydney, Australia); Javid Taheri (The University of Sydney, Australia)

13:30 - 14:30

ON-MOVE Keynote: Prof. Salil Kanhere, The University of New South Wales, Australia

Improving QoS in Mobile Networks using Geo-Intelligence
Room: Bennelong Point

Abstract: An increasing number of users today access the Internet from fast moving platforms, either directly through their personal devices or through broadband connectivity embedded in the vehicle. This trend is only expected to continue as in-car mobile broadband services are rapidly being introduced by the automotive industry. However, at vehicular speed, cellular network bandwidth becomes notoriously uncertain as the user moves through many different locations within the same Internet session. If we had better ways to reduce this uncertainty, we could improve the robustness of many real-time Internet applications that critically depend on the accurate knowledge of available network bandwidth. Based on real experiments on the roads of Sydney, this talk will first examine the extent of bandwidth uncertainty for vehicular Internet access. Then, a geo-intelligence framework will be presented that seeks to reduce this uncertainty by exploiting the geo-dependency property of cellular bandwidth. Finally, application of geointelligence to improve the performance of mobile streaming will be demonstrated. The talk will conclude with open issues and future directions of research in developing seamless geo-intelligence for mobile computing.

13:45 - 15:00

SenseApp: Routing, Development and Deployment Support

Room: Port Jackson
Chair: Raja Jurdak (Commonwealth Scientific and Industrial Research Organisation (CSIRO) ICT Centre, Australia)

CREST: An Epoch-Oriented Routing Control Plane for Low-Power and Lossy Networks `····˙%&,`
James Pope (George Mason University & C4I Center, USA); Robert Simon (George Mason University, USA)

All Eyes on Code: Using Call Graphs for WSN Software Optimization `····˙% +`
Wolf-Bastian Pöttner (Technische Universität Braunschweig, Germany); Daniel Willmann (Technische Universität Braunschweig, Germany); Felix Büsching (Technische Universität Braunschweig, Germany); Lars C Wolf (Technische Universität Braunschweig, Germany)

PROVIZ: An Integrated Visualization and Programming Framework for WSNs `····˙%( *`
Ramalingam K. Chandrasekar (Georgia Institute of Technology, USA); Selcuk Uluagac (Georgia Institute of Technology & The School of ECE, USA); Raheem Beyah (Georgia Institute of Technology, USA)

14:30 - 15:00

ON-MOVE: Session 1

Room: Bennelong Point

Supporting User Mobility with Peer-to-Peer-based Application Mobility in Heterogeneous Networks `····˙%) $`
Dan Johansson (Luleå University of Technology, Sweden); Karl Andersson (Luleå University of Technology, Sweden); Christer Åhlund (Lulea University of Technology, Sweden)

15:00 - 15:30

Coffee break

15:30 - 16:30

P2MNET: Multimedia over Vehicular Networks

Room: Farm Cove
Chair: Damla Turgut (University of Central Florida, USA)

North-American Speed Limit Sign Detection and Recognition for Smart Cars ⸱⸱⸱⸱⸱%)(
Abdelhamid Mammeri (University of Ottawa, Canada); Azzedine Boukerche (University of Ottawa, Canada); Jingwen Feng (University of Ottawa, Canada); Renfei Wang (University of Ottawa & PARADISE Research Laboratory, Canada)

Protocol of Change Pseudonyms for VANETs ⸱⸱⸱⸱⸱%*&
Adigun Adetundji (University of Quebec at Trois-Rivières, Canada); Amar Bensaber Boucif (University of Quebec, Trois Rivieres, Canada); Ismail Biskri (Quebec University at Trois-Rivieres, Canada)

15:30 - 18:00

ON-MOVE: Session 2

Room: Bennelong Point

A Novel Route Guidance Algorithm Using Beamforming Techniques for Vehicular Networks ⸱⸱⸱⸱⸱%*,
Ismehene Chahbi (University of Manouba, Tunisia)

Multi-User-Type Travel Simulator Based on Open Travel Data ⸱⸱⸱⸱⸱%+)
Rie Tanaka (NEC Corporation, Japan); Satoko Itaya (NICT, Japan); Naoki Yoshinaga (NEC Corporation, Japan); Taku Konishi (NEC Corporation, Japan); Shin-ichi Doi (NEC Corporation, Japan); Keiji Yamada (NEC C&C Innovation Research Laboratories, Japan); Peter Davis (Telecognix Corporation, Japan)

Enhancing Safety Messages Dissemination Over 802.11p/DSRC ⸱⸱⸱⸱⸱%+-
Omar Chakroun (Université de Sherbrooke, Canada); Soumaya Cherkaoui (Université de Sherbrooke, Canada)

Mobile Computing Application for Industrial Field Service Engineering: A Case for ABB Service Engineers ⸱⸱⸱⸱⸱%,
Welderufael Berhane Tesfay (Lulea University of Technology, Sweden); Markus Aleksy (ABB Corporate Research Center Germany, Germany); Karl Andersson (Luleå University of Technology, Sweden); Marko K Lehtola (ABB Corporate Research, Sweden)

15:30 - 16:30

SenseApp: Outside the box: Innovative Applications

Room: Port Jackson
Chair: Delphine Christin (Technische Universität Darmstadt, Germany)

SNOWWEB - Wirelessly Connected Weather Stations in Antarctica ⸱⸱⸱⸱⸱%(
Ben Jolly (University of Canterbury, New Zealand); Andreas Willig (University of Canterbury, New Zealand); Adrian McDonald (University of Canterbury, New Zealand); Matthew Pannell (University or Canterbury, New Zealand); Graeme Plank (University of Canterbury, New Zealand)

Toward a Rapidly Deployable RTI System for Tactical Operations `·····&$'`

Dustin Maas (University of Utah & Xandem Technology LLC, Salt Lake City, Utah, USA); Joey Wilson (University of Utah, USA); Neal Patwari (University of Utah, USA)

16:30 - 16:45

SenseApp: Best Paper Award and Conclusion

Room: Port Jackson

18:00 - 18:00

Workshops Monday - End of the technical program

Tuesday, October 22

08:00 - 08:30

Registration with Coffee and Tea

08:30 - 09:00

Opening and Welcome

Rooms: Port Jackson, Bennelong Point, Farm Cove

09:00 - 10:00

Keynote 1: Kevin Bloch, Chief Technical Officer, Cisco Australia and New Zealand

Software Defined Networks (SDN) - Enabling Virtualised, Programmable Infrastructure
Rooms: Port Jackson, Bennelong Point, Farm Cove
Chair: Anura P Jayasumana (Colorado State University, USA)

Abstract: In its formative stages, SDN was popular in research and venture capital communities. However as organisations tackle issues such as complexity, automation and time to market, the industry has become involved in this transition. SDN potentially addresses some of these challenges at the same time as exposing new options for cloud, predictive analytics and the Internet of Everything. This presentation provides an industry perspective of the drivers, status and potential of SDN and the promise of infrastructure virtualisation and programmability.

10:00 - 10:30

Coffee break

10:30 - 12:10

1A: Plenary session: Best Paper Candidates·····

Rooms: Port Jackson, Bennelong Point, Farm Cove
Chair: Damla Turgut (University of Central Florida, USA)

Autonomous Deployment of Sensors for Maximized Coverage and Guranteed Connectivity in Underwater Acoustic Sensor Networks ·····*B#5*
Fatih Senel (Antalya International University, Turkey); Kemal Akkaya (Southern Illinois University Carbondale, USA); Turgay Yilmaz (Middle East Technical University, Turkey)

Let's Talk Together: Understanding Concurrent Transmission in Wireless Sensor Networks ··*B#5*
Dingwen Yuan (Technische Universität Darmstadt, Germany); Matthias Hollick (Technische Universität Darmstadt & Secure Mobile Networking Lab, Center for Advanced Security Research Darmstadt, Germany)

Efficient Multicast Delivery for Wireless Data Center Networks ·····*B#5*
Ya-Ju Yu (Academia Sinica, Taiwan); Ching-chih Chuang (National Taiwan University, Taiwan); Hsin-Peng Lin (Telecommunication Laboratories & Chunghwa Telecom, Taiwan); Ai-Chun Pang (National Taiwan University, Taiwan)

PopCache: Cache More or Less Based on Content Popularity for Information-Centric Networking ·····*B#5*
Kalika Suksomboon (The National Institute of Informatics, Japan); Saran Tarnoi (National Institute of Informatics & The Graduate University for Advanced Studies, Japan); Yusheng Ji (National Institute of Informatics, Japan); Michihiro Koibuchi (National Institute of Informatics, Japan); Kensuke Fukuda (National Institute of Informatics, Japan); Shunji Abe (National Institute of Infomatics, Japan); Motonori Nakamura (National Institute of Informatics, Japan); Michihiro Aoki (National Institute of Informatics, Japan); Shigeo Urushidani (National Institute of Informatics, Japan); Shigeki Yamada (National Institute of Informatics, Japan)

12:10 - 13:30

Lunch break

13:30 - 14:30

Keynote 2: Prof. Aruna Seneviratne, University of New South Wales & NICTA, Australia

Challenges of Data Access and Transport in a Truly Mobile World
Rooms: Port Jackson, Bennelong Point, Farm Cove
Chair: Damla Turgut (University of Central Florida, USA)

Abstract: Mobile devices already produce about 600 terabytes of data every month, through more than 1.5 million cellular base stations and 5 billion mobile phones. Moreover, the rate of data that is being produced is expected to grow exponentially over time. Mobile broadband is fast becoming an essential part of modern life. The ability to cater to this demand is severely hampered by the shortage of radio frequency spectrum. So apart from developing new technologies that use the spectrum efficiently, it is also necessary to make the mobile systems smarter.
This talk will describe the techniques that are making systems smarter through the provision of user centered/personalized services and applications, and highlight one of the major challenges of designing such systems, namely preservation of privacy of the users. It will examine some the recent recommender systems, personalized content delivery systems, and mobile applications to highlight the potential privacy threat these applications and services pose to users. Then it will outline some of the current solutions that are being proposed by the research community and provide discussion of one such approach — mobile service overlays — by focusing

on the principles and practical considerations that went into the design of a privacy-preserving user generated content distribution system called mobitribe.

14:30 - 14:45

Invitation to LCN 2014

Rooms: Port Jackson, Bennelong Point, Farm Cove

15:00 - 17:00

Demonstrations with Coffee·····

Rooms: Port Jackson, Bennelong Point, Farm Cove
Chair: Kemal Akkaya (Southern Illinois University Carbondale, USA)

SDN API for Access Network Virtualization·····B#5
John Matthews (CSIRO, Australia); Craig L Russell (CSIRO, Australia); Vijay Sivaraman (University of New South Wales, Australia)

Characterizing the Driving Style Behavior Using Artificial Intelligence Techniques·····B#5
Javier Meseguer (Universitat Politècnica de València, Spain); Carlos T. Calafate (Universidad Politécnica de Valencia, Spain); Juan-Carlos Cano (Universidad Politecnica de Valencia, Spain); Pietro Manzoni (Universidad Politécnica de Valencia, Spain)

Simulation of Congestion Management for Emergency Evacuation·····B#5
Antoine Desmet (Imperial College London, United Kingdom); Huibo Bi (Imperial College London, United Kingdom); Erol Gelenbe (Imperial College London, United Kingdom)

Showcase of a Fragment-based Distributed Cloud Storage System·····B#5
Tuan T. Tran (InfoBeyond Technology LLC, USA); Phani Chakravarthy Polina (University of Louisville, USA); Xiaolong Tang (InfoBeyond Technology LLC, USA); Zhen Jia (University of Cincinnati, USA); Yi Yang (SUNY Buffalo, USA); Anup Kumar (University Of Louisville, USA); Bin Xie (InfoBeyond Technology LLC, USA)

Regression Testing Framework for WSNs·····B#5
Wolf-Bastian Pöttner (Technische Universität Braunschweig, Germany); Daniel Willmann (Technische Universität Braunschweig, Germany); Felix Büsching (Technische Universität Braunschweig, Germany); Lars C Wolf (Technische Universität Braunschweig, Germany)

Demonstration of a Loosely Coupled M2M System Using Arduino, Android and Wiki Software··B#5
Takashi Yamanoue (Kagoshima University, Japan); Kentaro Oda (Kagoshima University, Japan); Koichi Shimozono (Kagoshima University, Japan)

Energy-Efficient Status Monitoring in Sensor Networks Using Adaptive Piggybacking·····B#5
Dominik Neuner (University of Innsbruck, Austria); Margit Mutschlechner (University of Innsbruck, Austria); Falko Dressler (University of Innsbruck, Austria)

Demonstration of a Simple, Versatile, Distributed Low-Power Wireless M2M Infrastructure·····B#5
Pier-Olivier Genest (ReelyActive, Canada); Jeffrey Dungen (ReelyActive, Canada)

Smarter Buildings for the Smart Grid? Let Them Forecast Their Power Consumption·····B#5
Andreas Reinhardt (The University of New South Wales, Australia); Delphine Christin (Technische Universität Darmstadt, Germany); Kai Li (University of New South Wales, Australia); Salil Kanhere (The University of New South Wales, Australia)

Concurrent Use of WiFi Channels to Provide QoS·····B#5
Jason But (Swinburne University, Australia); Philip Branch (Swinburne University of Technology, Australia)

Energy-Efficient Security in Smart Metering Scenarios ˙˙˙˙˙B#5
> Anton Hergenröder (Karlsruhe Institute of Technology (KIT), Germany); Christian Haas (Karlsruhe Institute of Technology, Germany)

Posters with Tea˙˙˙˙˙

Rooms: Port Jackson, Bennelong Point, Farm Cove
Chair: Nils Aschenbruck (University of Osnabrück, Germany)

Protocol for Efficient Opportunistic Communication ˙˙˙˙˙B#5
> Ranjana Pathak (The University of Queensland, Australia); Peizhao Hu (NICTA, Australia); Jadwiga Indulska (The University of Queensland, Australia); Marius Portmann (University of Queensland, Australia)

Spectrum Sensing Aided Long-Term Spectrum Management in Cognitive Radio Networks ˙˙˙˙˙B#5
> Pål R. Grønsund (Telenor & University of Oslo / Telenor / Simula Research Laboratory, Norway); Paal E. Engelstad (University of Oslo / Telenor GBD&R / Simula Research Laboratory, Norway); Przemyslaw Pawelczak (Delft University of Technology, The Netherlands); Ole Grøndalen (Telenor, Norway); Per H. Lehne (Telenor Group Industrial Development, Norway); Danijela Cabric (University of California Los Angeles, USA)

EnerSim: An Energy Consumption Model for Large-Scale Overlay Simulators ˙˙˙˙˙B#5
> Christian Gross (Technische Universität Darmstadt, Germany); Fabian Kaup (Technische Universitaet Darmstadt, Germany); Dominik Stingl (Technische Universität Darmstadt, Germany); Björn Richerzhagen (Technische Universität Darmstadt, Germany); David Hausheer (TU Darmstadt, Germany); Ralf Steinmetz (Technische Universität Darmstadt, Germany)

Alleviating the Domino's Effect in Wireless Sensor Networks ˙˙˙˙˙B#5
> Sara A. Abd El Hamid (Cairo University, Egypt); Haitham S. Hamza (Cairo University, Egypt); Imane A. Saroit (Cairo University, Egypt)

GRS: Global Resolution Service for Mobility Support in the Internet ˙˙˙˙˙B#5
> You Wang (Tsinghua University, P.R. China); Jun Bi (Tsinghua University, P.R. China)

Minimally-Intrusive Frequent Round Trip Time Measurements Using Synthetic Packet-Pairs ˙˙˙˙˙B#5
> Sebastian Zander (Swinburne University of Technology, Australia); Grenville Armitage (Swinburne university of Technology, Australia)

Adaptive QoS Control Adjusting Receive Buffer Sizes and Parallel TCP Connections on Information Gathering Server ˙˙˙˙˙B#5
> Yasutaka Sakajiri (Osaka Prefecture University, Japan); Yosuke Tanigawa (Osaka Prefecture University, Japan); Hideki Tode (Osaka Prefecture University, Japan)

Leveraging Online Social Networks for a Real-time Malware Alerting System ˙˙˙˙˙B#5
> Isra Al-Qasem (Jordan University of Science and Technology, Jordan); Sumaya Al-Qasem (Jordan University of Science and Technology, Jordan); Ahmad T. Al-Hammouri (Jordan University of Science and Technology, Jordan)

On the Use of a Cooperative Neighbor Position Verification Scheme to Secure Warning Message Dissemination in VANETs ˙˙˙˙˙B#5
> Manuel Fogue (University of Zaragoza, Spain); Francisco J. Martinez (University of Zaragoza, Spain); Piedad Garrido (University of Zaragoza, Spain); Marco Fiore (National Research Council of Italy, Italy); Carla-Fabiana Chiasserini (Politecnico di Torino, Italy); Claudio E. Casetti (Politecnico di Torino, Italy); Juan-Carlos Cano (Universidad Politecnica de Valencia, Spain); Carlos T. Calafate (Universidad Politécnica de Valencia, Spain); Pietro Manzoni (Universidad Politécnica de Valencia, Spain)

LTE-Advanced Handover: An Orientation Matching-Based Fast and Reliable Approach ˙˙˙˙˙B#5
> Sayan Kumar Ray (Manukau Institute of Technology, New Zealand); Harsha R Sirisena (University of Canterbury, New Zealand); Devatanu Deka (Junior Design Engineer, New Zealand)

Accurate QoS-based Service Selection Algorithm for Service Composition ⋯⋯B#5
   Jianxin Liao (Beijing University of Posts and Telecommunications, P.R. China); Yang Liu (Beijing University of Posts and Telecommunications, P.R. China); Xiaomin Zhu (Beijing University of Posts and Telecommunications, P.R. China); Jingyu Wang (Beijing University of Posts and Telecommunications, P.R. China); Qi Qi (Beijing University of Posts and Telecommunications, P.R. China)

17:00 - 17:00

LCN Tuesday - End of the technical program

18:00 - 22:00

Conference Banquet

Wednesday, October 23

08:30 - 09:00

Registration with Coffee and Tea

09:00 - 10:40

3A: WSN: Sensing and Monitoring ⋯⋯

Room: Port Jackson
Chair: Andreas Reinhardt (The University of New South Wales, Australia)

Near Optimal Design of Multi-level WSNs for Environmental Monitoring ⋯⋯B#5
   Babak Behsaz (University of Alberta, Canada); Mike H. MacGregor (University of Alberta, Canada)

Energy-Aware Cross-Layer Optimization for EEG-based Wireless Monitoring Applications ⋯⋯B#5
   Alaa Awad Abdelhady (Qatar University, Qatar); Ramy Hussein (Alexandria University & Qatar University, Egypt); Amr Mohamed (Qatar University & Qatar University Wireless Innovations Center, Qatar); Amr El-Sherif (Alexandria University, Egypt)

Event-Driven Energy-Harvesting Wireless Sensor Network for Structural Health Monitoring ⋯⋯B#5
   Ming-Yuan Cheng (National Taiwan University, Taiwan); Yan-Bin Chen (National Taiwan University, Taiwan); Hung-Yu Wei (National Taiwan University, Taiwan); Winston K.G. Seah (Victoria University of Wellington, New Zealand)

BlockTree: Location-Aware Decentralized Monitoring in Mobile Ad Hoc Networks ⋯⋯B#5
   Dominik Stingl (Technische Universität Darmstadt, Germany); Christian Gross (Technische Universität Darmstadt, Germany); Leonhard Nobach (TU Darmstadt, Germany); Ralf Steinmetz (Technische Universität Darmstadt, Germany); David Hausheer (TU Darmstadt, Germany)

3B: Network Traffic Control & Monitoring ⋯⋯

Room: Bennelong Point
Chair: Burkhard Stiller (University of Zürich & ETH Zürich, TIK, Switzerland)

Approaches for Practical BitTorrent Traffic Control ⋯⋯B#5
   HyunYong Lee (The University of Tokyo, Japan); Akihiro Nakao (University of Tokyo, Japan)

Multi-dimensional Aggregation for DNS Monitoring `·····B#5`
Lautaro Dolberg (University of Luxembourg, Luxemburg); Jérôme François (University of Luxembourg, Luxemburg); Thomas Engel (University of Luxemburg, Luxemburg)

High Quality Streaming System with Hierarchical Cache Servers Based on Inter-Stream FEC Function `·····B#5`
Akihiro Fujimoto (Wakayama University, Japan); Yusuke Hirota (Osaka University, Japan); Hideki Tode (Osaka Prefecture University, Japan); Koso Murakami (Osaka University, Japan)

DASHing YouTube: An Analysis of Using DASH in YouTube Video Service `·····B#5`
Dilip Kumar Krishnappa (University of Massachusetts Amherst, USA); Divyashri Bhat (University of Massachusetts, USA); Michael Zink (University of Massachusetts Amherst, USA)

3C: Quality of Service

Room: Farm Cove
Chair: Ehab S. Elmallah (University of Alberta, Canada)

Improvement in Packet-Reordering with Limited Re-Sequencing Buffers: An Analysis `·····B#5`
Raghunandan Mandyam Narasiodeyar (Colorado State University, USA); Anura P Jayasumana (Colorado State University, USA)

A Game-Theoretic Spectrum Allocation Framework for Mixed Unicast and Broadcast Traffic Profile in Cognitive Radio Networks `·····B#5`
Muhammad Junaid Farooq (National University of Sciences and Technology, Pakistan); Muddassar Hussain (National University of Sciences and Technology, Pakistan); Junaid Qadir (National University of Sciences and Technology, Pakistan); Adeel Baig (National University of Sciences and Technology, Pakistan)

10:40 - 10:55

Coffee break

10:55 - 12:30

2A: Multihop Networks

Room: Port Jackson
Chair: Chun Tung Chou (University of New South Wales, Australia)

On Path Exposure in Probabilistic Wireless Sensor Networks `·····B#5`
Mohammed Elmorsy (Alberta University, Canada); Ehab S. Elmallah (University of Alberta, Canada); Hosam M.F. AboElFotoh (Kuwait University, Kuwait)

Data Filtering for Wireless Sensor Networks Using Forecasting and Value of Information `·····B#5`
Sebastian Zöller (Technische Universität Darmstadt & Multimedia Communications Lab - KOM, Germany); Christian Vollmer (Technische Universität Darmstadt, Germany); Markus Wachtel (Technische Universität Darmstadt, Germany); Ralf Steinmetz (Technische Universität Darmstadt, Germany); Andreas Reinhardt (The University of New South Wales, Australia)

Autonomous Discovery and Repair of Damage in Wireless Sensor Networks `·····B#5`
Thuy T Truong (University College Cork, Ireland); Kenneth N Brown (University College Cork, Ireland); Cormac J. Sreenan (University College Cork, Ireland)

Quantifying Selfishness and Fairness in Wireless Multihop Networks `·····B#5`
Normalia Samian (Victoria University of Wellington, New Zealand); Winston K.G. Seah (Victoria University of Wellington, New Zealand); Gang Chen (Victoria University of Wellington, New Zealand)

An Energy Efficient Network Coding Approach for Wireless Body Area Networks ·····*B#5*

Samaneh Movassaghi (University of Technology, Sydney, Australia); Mahyar Shirvanimoghaddam (University of Sydney, Australia); Mehran Abolhasan (University of Technology Sydney, Australia); David B Smith (National ICT Australia, Australia)

2B: Transport Protocols

Room: Bennelong Point
Chair: Ian Welch (Victoria University of Wellington, New Zealand)

eCMT-SCTP: Improving Performance of Multipath SCTP with Erasure Coding Over Lossy Links ·····*B#5*

Golam Sarwar (University of New South Wales & National ICT Australia, Australia); Pierre-Ugo Tournoux (National ICT Australia, Sydney, Australia); Roksana Boreli (National ICT Australia & University of NSW, Australia); Emmanuel Lochin (University of Toulouse - ISAE, France)

DHash:A Cache-Friendly TCP Lookup Algorithm for Fast Network Processing ·····*B#5*

Kai Zhang (University of Science and Technology of China, P.R. China); Junchang Wang (University of Science and Technology of China, P.R. China); Bei Hua (University of Science and Technology of China, P.R. China); Li Lu (University of Science and Technology of China, P.R. China)

Initial Spreading: a Fast Start-Up TCP Mechanism ·····*B#5*

Renaud Sallantin (University of Toulouse & CNES, France); Cédric Baudoin (Thales Alenia Space, France); Emmanuel Chaput (Irit-Enseeiht, France); Fabrice Arnal (Thales Alenia Space, France); Emmanuel Dubois (CNES, France); André-Luc Beylot (IRIT Toulouse, France)

Evolution of TCP's Initial Window Size ·····*B#5*

Runa Barik (IIT Mandi, India); Dinil Mon Divakaran (National University of Singapore, Singapore)

Using Delay-Gradient TCP for Multimedia-Friendly 'Background' Transport in Home Networks ···*B#5*

Grenville Armitage (Swinburne university of Technology, Australia); Naeem Khademi (University of Oslo, Norway)

2C: Scheduling and MAC ····

Room: Farm Cove
Chair: Delphine Christin (Technische Universität Darmstadt, Germany)

Packet Transmission Scheduling for Enhancing Total Throughput Against Channel Fading in Wireless LAN ·····*B#5*

Shiori Yoshioka (Osaka Prefecture University, Japan); Yosuke Tanigawa (Osaka Prefecture University, Japan); Hideki Tode (Osaka Prefecture University, Japan)

DSH-MAC: Medium Access Control Based on Decoupled and Suppressed Handshaking for Long-delay Underwater Acoustic Sensor Networks ·····*B#5*

Tiansi Hu (Northeastern University, USA); Yunsi Fei (Northeastern University, USA)

Analysing and Reducing Network Inaccessibility in IEEE 802.15.4 Wireless Communications ···*B#5*

Jeferson L. R. Souza (University of Lisbon, Portugal); José Rufino (Universidade de Lisboa, Portugal)

Advance Bandwidth Reservation for Energy Efficiency in High-performance Networks ·····*B#5*

Tong Shu (University of Memphis, USA); Chase Qishi Wu (University of Memphis & Oak Ridge National Laboratory, USA); Daqing Yun (The University of Memphis, USA)

Rate Equilibria in WLANs with Block ACKs ·····*B#5*

Suong H. Nguyen (Swinburne University of Technology, Australia); Ihsan Ayyub Qazi (Lahore University of Management Sciences, Pakistan); Lachlan L. H. Andrew (Monash University, Australia); Hai L. Vu (Swinburne University of Technology, Australia)

12:30 - 13:30

Lunch break

13:30 - 15:10

4A: Delay Tolerant and Vehicular Networks·····

Room: Port Jackson
Chair: Tom Pfeifer (Technische Universität Berlin, Germany)

An Adaptive Channel Coordination Mechanism for Vehicular Ad Hoc Networks ·····*B#5*
LiFeng Zhang (Institute of Software, Chinese Academy of Sciences, P.R. China); Beihong Jin (Institute of Software, Chinese Academy of Sciences, P.R. China); Keqin Li (State University of New York at New Paltz, USA); Fusang Zhang (Institute of Software, Chinese Academy of Sciences, P.R. China)

Characterization of a Transoceanic Aircraft Delay Tolerant Network ·····*B#5*
Rubén Martínez-Vidal (Universitat Autònoma de Barcelona, Spain); Ramon Martí (Universitat Autònoma de Barcelona, Spain); Joan Borrell (Universitat Autonoma de Barcelona, Spain)

Assessing the Effectiveness of DTN Techniques Under Realistic Urban Environments ·····*B#5*
Sergio M. Tornell (Universitat Politècnica de València, Spain); Carlos T. Calafate (Universidad Politécnica de Valencia, Spain); Juan-Carlos Cano (Universidad Politecnica de Valencia, Spain); Pietro Manzoni (Universidad Politécnica de Valencia, Spain)

Probabilistic Routing Based on Fine-Grained Contact Characterization in Delay Tolerant Networks ·····*B#5*
Aysha Al-Hinai (University of Otago, New Zealand); Haibo Zhang (Universtiy of Otago, New Zealand)

4B: Cloud Computing and Data Centers····

Room: Bennelong Point
Chair: Tim Strayer (BBN Technologies, USA)

Throughput Maximization for Online Request Admissions in Mobile Cloudlets ·····*B#5*
Qiufen Xia (Australian National University, Australia); Weifa Liang (The Australian National University, Australia); Wenzheng Xu (Australian National University, Australia)

A Cloud Storage Overlay to Aggregate Heterogeneous Cloud Services ·····*B#5*
Guilherme Sperb Machado (University of Zurich, Switzerland); Thomas Bocek (University of Zurich, Switzerland); Burkhard Stiller (University of Zürich & ETH Zürich, TIK, Switzerland)

SlickFlow: Resilient Source Routing in Data Center Networks Unlocked by OpenFlow ·····*B#5*
Ramon Ramos (Federal University of Espírito Santo, Brazil); Magnos Martinello (Federal University of Espirito Santo, Brazil); Christian Esteve Rothenberg (University of Campinas - UNICAMP, Brazil)

Automated Diagnosis of Known and Unknown Soft-Failure in User Devices Using Transformed Signatures and Single Classifier Architecture ·····*B#5*
Chathuranga Widanapathirana (Monash University, Australia); Jonathan Li (Monash University, Australia); Milosh Ivanovich (Monash University, Australia); Paul Fitzpatrick (Monash University & Telstra, Australia); Ahmet Sekercioglu (Monash University, Australia)

4C: Security

Room: Farm Cove
Chair: Kemal Akkaya (Southern Illinois University Carbondale, USA)

Secure Connected Scalable Combinatorial KPS in WSN: Deterministic Merging, Localization ·····B#5
  Pinaki Sarkar (National Institute of Science and Technology, India); Sarbajit Mukherjee (Bengal Engineering and Science University, India)

Poseidon: Mitigating Interest Flooding DDoS Attacks in Named Data Networking ·····B#5
  Alberto Compagno (University of Padua, Italy); Mauro Conti (University of Padua, Italy); Paolo Gasti (New York Institute of Technology, USA); Gene Tsudik (University of CA, Irvine, USA)

SCADAVT--A Framework for SCADA Security Testbed Based on Virtualization Technology ·····B#5
  Abdulmohsen Almalawi (RMIT University, Australia); Zahir Tari (RMIT University, Australia); Ibrahim Khalil (Faculty member, RMIT University, Australia); Adil Fahad (RMIT University, Australia)

IP Agnostic Real-Time Traffic Filtering and Host Identification Using TCP Timestamps ·····B#5
  Florian Weingarten (RWTH Aachen University, Germany); Georg Wicherski (CrowdStrike, Inc. & RWTH Aachen University, Germany); Ulrike Meyer (RWTH Aachen, Germany)

15:10 - 16:20

Posters with Tea ·····

Rooms: Port Jackson, Bennelong Point, Farm Cove
Chair: Nils Aschenbruck (University of Osnabrück, Germany)

A Virtual Sensor Scheduling Framework for Heterogeneous Wireless Sensor Networks ·····B#5
  Wen Hu (Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia); Damien O'Rourke (CSIRO, Australia); Branislav Kusy (Commonwealth Scientific and Industrial Research Organisation (CSIRO) ICT Centre, Australia); Tim Wark (CSIRO, Australia)

Performance Evaluation of IEEE 802.1Qbu: Experimental and Simulation Results ·····B#5
  Wen-Kang Jia (National Chiao Tung University, Taiwan); Gen-Hen Liu (National Chiao Tung University, Taiwan); Yaw-Chung Chen (National Chiao Tung University, Taiwan)

QoS Assessment for Mission-critical Wireless Sensor Network Applications ·····B#5
  Felix Dobslaw (Mid Sweden University, Sweden); Tingting Zhang (Mid Sweden University, Sweden); Mikael Gidlund (ABB, Sweden)

Topology-aware PEX for Improving BitTorrent ·····B#5
  HyunYong Lee (The University of Tokyo, Japan); Akihiro Nakao (University of Tokyo, Japan)

A Novel MAC Protocol of Wireless LAN with High Throughput and Fairness ·····B#5
  Xuejun Tian (Aichi Prefectural University, Japan); Takumi Sanada (Aichi Prefectural University, Japan); Takashi Okuda (Aichi Prefectural University, Japan); Tetsuo Ideguchi (Aichi Prefectural University, Japan)

Automatic Over-the-Air Provisioning for Wi-Fi Equipped M2M Devices ·····B#5
  Kenji Hori (KDDI R&D Labs. Inc., Japan); Tomohiko Ogishi (KDDI R&D Lab., Japan); Ming Lai (Applied Communication Sciences, USA); Dana A Chee (Applied Communication Sciences, USA); Kaustubh Sinkar (Applied Communication Sciences, USA)

Time Division Configuration Multiplexing of Wireless Interfaces ·····B#5
  Hakan Coskun (Technische Universität Berlin, Germany); Tom Pfeifer (Technische Universität Berlin, Germany)

Virtualized Network Isolation Using Software Defined Networks ····B#5
  Rogerio Nunes (Universidade Federal de Minas Gerais, Brazil); Raphael Pontes (Universidade Federal de Minas Gerais, Brazil); Dorgival Guedes (Universidade Federal de Minas Gerais, Brazil)

SOS Social Network-based Distributed Data Storage ·····B#5
  Phani Chakravarthy Polina (University of Louisville, USA); Tuan T. Tran (University of Louisville, USA); Bin Xie (InfoBeyond Technology LLC, USA); Anup Kumar (University Of Louisville, USA)

Maximizing Topic Propagation Driven by Multiple User Nodes in Micro-Blogging ·····*B#5*

Chang Su (Xi'an JiaoTong University, P.R. China); Youtian Du (Xi'an Jiaotong University, P.R. China); Xiaohong Guan (Xi'an Jiaotong University & Tsinghua University, P.R. China); Chenhe Wu (Xi'an Jiaotong University, P.R. China)

Performance of Multi-Channel IEEE 802.11 WLANs with Bidirectional Flow Control ·····*B#5*

Suong H. Nguyen (Swinburne University of Technology, Australia); Lachlan L. H. Andrew (Monash University, Australia); Hai L. Vu (Swinburne University of Technology, Australia)

Private and Resilient Data Aggregation ·····*B#5*

Mathieu Cunche (INSA-Lyon / INRIA, France); Cedric Lauradoux (INRIA & Insa Lyon, France); Marine Minier (Insa de Lyon, France); Roksana Boreli (National ICT Australia & University of NSW, Australia)

16:25 - 18:05

5A: Wireless and Home Networks ·····

Room: Port Jackson
Chair: Karl Andersson (Luleå University of Technology, Sweden)

A Framework to Rapidly Test SDN Use-Cases and Accelerate Middlebox Applications ·····*B#5*

Rajesh Narayanan (Dell Inc., USA); Geng Lin (Dell Inc., USA); Affan Syed (National University of Computer and Emerging Sciences (NUCES), Islamabad Campus, Pakistan); Saad Shafiq (xFlow Research, USA); Fahd Gilani (xFlow Research, USA)

On the Use of Thin-client Set-Top Boxes for IPTV Services ·····*B#5*

Tiago Cruz (University of Coimbra, Portugal); Paulo Simões (University of Coimbra, Portugal); Pedro Cabaço (University of Coimbra, Portugal); Edmundo Monteiro (University of Coimbra, Portugal); Fernando Bastos (PT Inovação, Portugal); Alexandre Laranjeira (PT Inovação, Portugal)

Can Dynamic Pricing Make Femto Users and Service Providers Happy? ·····*B#5*

Mehdi Khabazian (Qatar Mobility Innovations Center (QMIC) & INRS-EMT, University of Quebec, Qatar); Nizar Zorba (QMIC, Qatar); Hossam S. Hassanein (Queen's University, Canada)

Capacity Analysis of Combined IPTV and VoIP Over IEEE 802.11n ·····*B#5*

Saad Saleh (National University of Sciences and Technology (NUST), Islamabad & School of Electrical Engineering and Computer Science (SEECS), Pakistan); Zawar Shah (School of Electrical Engineering and Computer Science (SEECS), NUST, Pakistan); Adeel Baig (National University of Sciences and Technology, Pakistan)

5B: Information Centric & Opportunistic Networks ·····

Room: Bennelong Point
Chair: Roksana Boreli (National ICT Australia & University of NSW, Australia)

A Community-Oriented Route Coordination Using Information Centric Networking Approach ·····*B#5*

Ruidong Li (National Institute of Information and Communications Technology (NICT), Japan); Hitoshi Asaeda (National Institute of Information and Communications Technology (NICT), Japan)

PCV: Predicting Contact Volume for Reliable and Efficient Data Transfers in Opportunistic Networks ·····*B#5*

Shiraz Qayyum (Rochester Institute of Technology, USA); Mehrab Shahriar (University of Texas at Arlington, USA); Mohan J Kumar (Rochester Institute of Technology, USA); Sajal K. Das (Missouri University of Science and Technology, USA)

Enhanced Data Delivery Framework for Dynamic Information-Centric Networks (ICNs) ·····*B#5*

Fadi M. Al-Turjman (University of Guelph, Canada); Hossam S. Hassanein (Queen's University, Canada)

5C: Privacy

Chair: Jens Toelle (Fraunhofer FKIE & University of Bonn, Germany)

On the Efficiency of Privacy-Preserving Path Hiding for Mobile Sensing Applications ·····B#5
Delphine Christin (Technische Universität Darmstadt, Germany); Andreas Reinhardt (The University of New South Wales, Australia); Matthias Hollick (Technische Universität Darmstadt & Secure Mobile Networking Lab, Center for Advanced Security Research Darmstadt, Germany)

SmartRevoc: An Efficient and Privacy Preserving Revocation System Using Parked Vehicles ·····B#5
David Eckhoff (University of Erlangen, Germany); Falko Dressler (University of Innsbruck, Austria); Christoph Sommer (University of Innsbruck, Austria)

Modeling Cooperative, Selfish and Malicious Behaviors for Trajectory Privacy Preservation Using Bayesian Game Theory ·····B#5
Xinyu Jin (Florida International University, USA); Niki Pissinou (Florida International University, USA); Sitthapon Pumpichet (Florida International University, USA); Charles A Kamhoua (Air Force Research Laboratory & Information Directorate, USA); Kevin Kwiat (Air Force Research Laboratory, USA)

18:05 - 18:05

LCN Wednesday - End of the technical program

Thursday, October 24

08:30 - 08:45

Registration with Coffee and Tea

08:45 - 09:00

WLN: Welcome and Introduction

M2MCIP: Welcome and Introduction

09:00 - 10:00

M2MCIP: M2M Interfaces and Applications

Chair: Marc Roelands (Alcatel-Lucent, Belgium)

Electrocardiogram Monitoring on OpenMTC Platform ·····, ('
Vera Suryani (IT Telkom, Indonesia); Achmad Rizal (IT Telkom, Indonesia); Anton Herutomo (Telkom University, Indonesia); Asma Elmangoush (Technical University Berlin & Fraunhofer FOKUS Institute, Germany); Thomas Magedanz (TU Berlin / Fraunhofer FOKUS, Germany)

A Contextual-adaptive Location Disclosure Agent for General Devices in the Internet of Things ¨¨¨¨, (,
Mahmoud Elkhodr (School of Computing, Engineering and Mathematics, University of Western Sydeny, Australia); Seyed Shahrestani (University of Western Sydney, Australia); Hon Cheung (University of Western Sydney, Australia)

Mobile Tracking System Using OpenMTC Platform Based on Event Driven Method ¨¨¨¨,) *
Maman Abdurohman (Universitas Telkom, Indonesia); Anton Herutomo (Telkom University, Indonesia); Vera Suryani (IT Telkom, Indonesia); Thomas Magedanz (TU Berlin / Fraunhofer FOKUS, Germany); Asma Elmangoush (Technical University Berlin & Fraunhofer FOKUS Institute, Germany)

09:00 - 10:30

WLN: On Sensor Networks & RFIDs

Room: Port Jackson
Chair: Waleed Alsalih (King Saud University, Saudi Arabia)

Rapid Tag Collision Resolution Using Enhanced Continuous Wave Absence Detection ¨¨¨¨, * %
Abdallah Alma'aitah (Queen's University, Canada); Hossam S. Hassanein (Queen's University, Canada); Mohamed Ibnkahla (Queen's University, Canada)

Discrete Power Based Distance Clustering for Anti-Collision Schemes in RFID Systems ¨¨¨¨, *,
Waleed Alsalih (King Saud University, Saudi Arabia)

A Value-Based Cache Replacement Approach for Information-Centric Networks ¨¨¨¨, +(
Fadi M. Al-Turjman (University of Guelph, Canada); Ashraf E. Al-Fagih (King Fahd University of Petroleum and Minerals, Saudi Arabia); Hossam S. Hassanein (Queen's University, Canada)

Impact of Wireless Devices Over Real-time Applications: An Empirical Test-bed Analysis ¨¨¨¨, , &
Mohib A Shah (The University of Sydney, Australia); Jinman Kim (The University of Sydney, Australia); Dagan Feng (The University of Sydney, Australia)

09:15 - 09:30

PADE: Welcome and Introduction

Room: Farm Cove

09:30 - 10:30

PADE Keynote: Prof. Gene Tsudik, Univ. of California, Irvine, USA

Privacy in Content-Centric Networking
Room: Farm Cove

Abstract: Content-Centric Networking (CCN) is an alternative to host-centric networking exemplified by today's Internet. CCN emphasizes content distribution by making content directly addressable. Named-Data Networking (NDN) is an example of CCN being considered as a candidate next-generation Internet architecture. One key NDN feature is router-side content caching that optimizes bandwidth consumption, reduces congestion and provides fast fetching for popular content.
Unfortunately, the same feature is also detrimental to privacy of both consumers and producers of content. As we show in this paper, simple and difficult-to-detect timing attacks can exploit NDN routers as "oracles" and allow the adversary to learn whether a nearby consumer recently requested certain content. Similarly, probing attacks that target adjacent content producers can be used to discover whether certain content has been recently fetched. After analyzing the scope and feasibility of such attacks, we propose and evaluate some efficient countermeasures that offer quantifiable privacy guarantees while retaining key features of NDN.

10:00 - 10:30

M2MCIP Keynote: Sanjay Jha, University of New South Wales, Sydney, Australia

Trends and Challenges in Machine to Machine (M2M) Communication Research
Room: Bennelong Point
Chair: Tom Pfeifer (Technische Universität Berlin, Germany)

Abstract: Machine to Machine (M2M) communication paradigm is expected to play a key role in realising the vision of Internet of Things (or Everything). In last decade, there has been a rapid increase in research, standardisation, and commercial activities in this new and emerging field. M2M communication is being used in a wide range of applications, such as logistics, inventory control, maintenance, environmental monitoring, farming as well as disaster recovery. This keynote address aims to discuss recent developments, future trends, and open challenges in the field.

10:30 - 11:00

Coffee break

11:00 - 12:00

M2MCIP: M2M Infrastructures and Data

Room: Bennelong Point
Chair: Anton Herutomo (Telkom University, Indonesia)

Towards a Simple, Versatile, Distributed Low-Power Wireless M2M Infrastructure `····`*, - $*
Jeffrey Dungen (ReelyActive, Canada); Traian Antonescu (ReelyActive, Canada); Pier-Olivier Genest (ReelyActive, Canada)

IoT Service Platform Enhancement Through 'In-Situ' Machine Learning of Real-World Knowledge `····`*, - **
Marc Roelands (Alcatel-Lucent, Belgium)

Open M2M Data - Position Paper `····`*- $(*
Hakan Coskun (Technische Universität Berlin, Germany); Tom Pfeifer (Technische Universität Berlin, Germany); Asma Elmangoush (Technical University Berlin & Fraunhofer FOKUS Institute, Germany); Adel Al-Hezmi (Fraunhofer Institute Fokus, Germany)

11:00 - 12:30

WLN Keynote: Prof. Albert Zomaya, The University of Sydney, Australia

Wireless Sensor Networks in the IoT Era
Room: Port Jackson
Chair: Fadi M. Al-Turjman (University of Guelph, Canada)

Abstract: Wireless Sensor Networks have been traditionally tasked with running a single application, however, in recent years we have witnessed the emergence of Shared Sensor Networks (SSNs) as integrated cyber-physical system infrastructures for a multitude of applications. Instead of assuming an application-specific network design, SSNs allow the underlying infrastructure to be shared among multiple applications that can potentially belong to different users. On one hand, a potential benefit of such design approach is to increase the utilization of sensing and communication resources, whenever the underlying network infrastructure covers the same geographic area and the sensor nodes monitor the same physical variables of common interest for different applications. On the other hand, compared with the existing application-specific design, the SSN approach poses several research challenges at different aspects of WSNs, such as task scheduling and resource allocation.
The main goal of this talk is to provide the opportunity of understanding what has been done and what still remains open in the

11:00 - 12:15

PADE: Session 1

Room: Farm Cove

Privacy in Overlay-based Smart Traffic Systems `·····- %&`
Martin Florian (Karlsruhe Institute of Technology, Germany); Ingmar Baumgart (Karlsruhe Institute of Technology (KIT), Germany)

What's the Value of Your Privacy? Exploring Factors That Influence Privacy-sensitive Contributions to Participatory Sensing Applications `·····- %`
Delphine Christin (Technische Universität Darmstadt, Germany); Christian Büchner (TU Darmstadt, Germany); Niklas Leibecke (Technische Universität Darmstadt, Germany)

The Global Changing Privacy Landscape `·····- &(`
Chong Shao (Information Integrity Solutions, Australia); Annelies Moens (Information Integrity Solutsoins, Australia); Malcolm Crompton (Information Integrity Solutions Pty Ltd, Australia)

12:00 - 12:30

M2MCIP: Round Table Discussion

Room: Bennelong Point
Chair: Tom Pfeifer (Technische Universität Berlin, Germany)

12:15 - 12:20

PADE: Concluding remarks

Room: Farm Cove

12:30 - 13:30

Lunch break

13:30 - 15:00

WLN: On SDNs in Dynamically Changing Environments

Room: Port Jackson
Chair: Fadi M. Al-Turjman (University of Guelph, Canada)

Optimization of the OpenFlow Controller in Wireless Environments for Enhancing Mobility `·····- ' $`
Abdallah AL Sabbagh (University of Technology, Sydney (UTS), Australia); Pakawat Pupatwibul (University of Technology, Sydney, Australia); Ameen Reda Banjar (University of Technology, Sydney & Saudi Ministry of Higher Education, Cultural Mission (SACM), Australia); Robin Michael Braun (University of Technology, Sydney, Australia)

Developing an Application Based on OpenFlow to Enhance Mobile IP Networks `·····- ' *`
Pakawat Pupatwibul (University of Technology, Sydney, Australia); Ameen Reda Banjar (University of Technology, Sydney & Saudi Ministry of Higher Education, Cultural Mission (SACM), Australia); Abdallah AL Sabbagh (University of Technology, Sydney (UTS), Australia); Robin Michael Braun (University of Technology, Sydney, Australia)

Performance Evaluation for Scientific Workflow Interoperability `·····- ( %`
Ahmed Alqaoud (Shaqra University, Saudi Arabia)

13:30 - 14:10

WNM Keynote: Prof. Grenville Armitage, Swinburne University, Australia

Step 1, do no harm....
Room: Bennelong Point

Abstract: A big challenge for internet researchers is making measurements that actually tell us something useful, and can be used by other people. Both of these are variations on the question of intrusiveness. If a measurement technique is disruptive to the network under observation, deployment will be unpopular and the information gathered may not be broadly representative. If the captured information is considered sensitive or personally-identifiable then sharing will be constrained, and large-scale trends or insights hard to observe.
    I hope to talk somewhat sensibly about the need for Internet measurement research to take both aspects into consideration.

13:40 - 13:50

WNS: Welcome and Introduction

Room: Farm Cove

13:50 - 14:35

WNS Keynote 1: Prof. Vijay Varadharajan, Macquarie University, Australia

Security Issues in the Changing Cyber Landscape
Room: Farm Cove

Abstract: In this talk I will begin with a brief look at current trends in the technology scenery and some of the key security challenges that are impacting on business and society. In particular, security threats facing computer networks have become more technically sophisticated (dynamic and harder to detect), better organized (with an evolving set of bad guys with different motives) and with the readily availability of easy to use tools enabling even ordinary users to conduct severe attacks. At the same time, the consequences of failing to detect and prevent these attacks have increased. In addition to the economic consequences, these attacks can also impact the reliability of critical infrastructure and national security. Hence there is a need for security professionals and researchers to rethink about cyber threats and how to respond to them. However there are some significant technical challenges. First we will examine the notion of attribution which is one of the key issues when it comes to counteracting security attacks. The unauthenticated nature of the Internet makes attribution difficult and furthermore has implications on accountability. Then the talk will focus on attacks and risks in cloud computing and networking, where issues of security, trust and accountability are particularly significant. Cloud infrastructures with their shared multi-tenancy environment aggravate security threats. Trust that cloud providers will provide proper security measures to counteract the security threats and ensure availability of services and data stored data become paramount. Then we will conclude the talk by describing some of our current work on secure cloud infrastructure for services and secure cloud data storage.

14:10 - 15:00

WNM: Session 1

Room: Bennelong Point

Insights of File-Sharing System Forums `·····- (,`
> Guillaume Jourjon (NICTA, Australia); Olivier Mehani (NICTA, Australia); Thierry Rakotoarivelo (NICTA-Sydney, Australia)

Measuring the Accuracy of Open-Source Payload-Based Traffic Classifiers Using Popular Internet Applications `·····- ) *`
> Shane Alcock (University of Waikato, New Zealand); Richard Nelson (University of Waikato, New Zealand)

14:35 - 15:00

WNS: Session 1

Room: Farm Cove

MaPIR: Mapping-Based Private Information Retrieval for Location Privacy in LBIS `·····- * (`
> Pedro M Wightman (Universidad del Norte & University of South Florida, Colombia); Mayra Zurbarán (Universidad del Norte, Colombia); Miguel E Rodriguez (Universidad del Norte, Colombia); Miguel A. Labrador (University of South Florida, USA)

15:00 - 15:30

Coffee break

15:30 - 16:10

WNS Keynote 2: Ben Whitham, Director of Cyber Security Solutions, M5 Network Security

Designing and Implementing Secure Mobile Solutions
Room: Farm Cove

This presentation outlines some of the practical trade-offs that security architects face when designing and implementing remote security solutions. The increasing storage and processing of data outside of traditional network boundaries has presented new challenges to securing sensitive organisational information. It is not realistic, nor fair, for organisations to push all of the burdens of securing sensitive data stored within a complex system on to the users of mobile or remote access devices. However, central management is not as simple as it once was. Organisations that rely on data collection from the remote device and central auditing of this data need to address the changing landscape where the organisation may not own the devices nor pay for data transportation. Organisations must also address legitimate privacy concerns with what they collect, what they audit and how they store and use the collected data.

15:30 - 18:00

WLN: On Resource management in M2M communications

Room: Port Jackson
Chair: Fadi M. Al-Turjman (University of Guelph, Canada)

On Resource Management and Context-Awareness in LTE-Based Networks for Public Safety `·····- +&`
> Amr El Mougy (Queen's University, Canada); Hussein T Mouftah (University of Ottawa, Canada)

Interference-Aware Multipath Routing Protocols for Mobile Ad Hoc Networks ·····- , $

 Iman Alwadiyeh (Jordan University, Jordan); <u>Ala' F.A Aburumman</u> (University of South Australia, Australia)

Enabling Technologies of Energy Efficient Cooperative M2M Networks: Benefits and Challenges ·····- , +

 <u>Najah A. Abu Ali</u> (UAEU, UAE)

Performance Analysis of Mixed Polling Schemes with Multiple Classes of Self-Similar Traffic Input to Build Comprehensive SLAs ·····- - (

 <u>Mohsin Iftikhar</u> (King Saud University, Saudi Arabia); Muhammad Imran (King Saud University, Saudi Arabia); Ghazi Al-Naymat (University of Sydney, Australia); M A Alnuem (King Saud University & College of Computer and Information Science, Saudi Arabia); Hassan Mathkour (King Saud University, Saudi Arabia)

15:30 - 16:10

WNM Keynote 2: Prof. Matthew Roughan, University of Adelaide, Australia

Lies, Damn Lies, and Internet Measurements
Room: Bennelong Point

Abstract: We all know Mark Twain's aphorism "There are three kinds of lies: lies, damned lies, and statistics." It alludes to the fact that getting statistics right is hard, and so they are often subject to misuse. Misinterpretations of statistical data, deliberate or otherwise, plague many fields -- including Internet Measurement -- damaging evidence, and confusing our understanding.
In this talk I will describe some of the most basic statistical paradoxes and problems, and explain some of the related issues for those working in Internet Measurement. I'll also talk a little about what we are doing to fix those problem (apart from the frequent tellings off).

16:10 - 16:45

WNS: Session 2

Room: Farm Cove

Formal Verification of Mobile Agent Based Anomaly Detection in Wireless Sensor Networks ····%$$%

 Muhammad Usman (Griffith University & School of Information & Communication Technology, Australia); Vallipuram Muthukkumarasamy (Griffith University, Australia); Xin-Wen Wu (Griffith University, Australia)

16:10 - 17:25

WNM: Session 2

Room: Bennelong Point

Estimating IPv4 Address Space Usage with Capture-Recapture ····%$%$

 <u>Sebastian Zander</u> (Swinburne University of Technology, Australia); Lachlan L. H. Andrew (Monash University, Australia); Grenville Armitage (Swinburne university of Technology, Australia); Geoff Huston (Asia Pacific Network Information Centre (APNIC), Australia)

An Investigation Into Teredo and 6to4 Transition Mechanisms: Traffic Analysis ····%$%

 Martin Elich (Masaryk University, Czech Republic); <u>Petr Velan</u> (CESNET z.s.p.o & CESNET z. s. p. o., Czech Republic); Tomas Jirsik (Masaryk University, Czech Republic); Pavel Celeda (Masaryk University, Czech Republic)

16:45 - 16:50

WNS: Concluding remarks

Room: Farm Cove

18:00 - 18:00

Workshops Thursday - End of the technical program