ITNAC 2016

International Telecommunication Networks and Applications Conference

7-9 December 2016 —University of Otago, Dunedin, New Zealand

ITNAC 2016 Program at a Glance

Tuesday 6 December

17.30—19.00 Welcome Reception and Registration

University Staff Club—Billiard Room

Wednesday 7 December

8.00—15.30 Registration Available

St David Lecture Theatre complex, Ground Floor

8.30—9.00 Conference Opening — Professor Michael Winikoff

St David Lecture Theatre

9.00—10.00 Keynote 1: Professor Yonghong Tian

St David Lecture Theatre

ITNAC 2016 Program at a Glance

Wednesday 7 December continued

10.00—10.20	Morning Tea	
10.20—12.00	Session 1: DTN & Social Networks	Session 2: Sensor Networks & IoT
	St David Seminar Room 1	*St David Seminar Room 2*
12.00—13.00	Lunch	
13.00—13.30	Industry Talk 1—Tait Communications	*St David Seminar Rooms 1 & 2*
	Clive Horn, Research Leader	
	Critical Communications and Future Evolution	
13.30—15.10	Session 3: Applications	Session 4: Scheduling
	St David Seminar Room 1	*St David Seminar Room 2*
15.10—15.30	Afternoon Tea	
15.30—17.10	Session 5: SDN I	Session 6: Network Security
	St David Seminar Room 1	*St David Seminar Room 2*

ITNAC 2016 Program at a Glance

Thursday 8 December

8.00—15.30	Registration Available	
	St David Lecture Theatre Complex, Ground Floor	
9.00—10.00	Keynote 2: Professor Winston Seah	
	St David Lecture Theatre	
10.00—10.20	Morning Tea	
10.20 – 12.00	Session 7: System & Platform	Session 8: Network Management
	St David Seminar Room 1	*St David Seminar Room 2*
12.00—13.00	Lunch	
13.00—13.30	Industry Talk 2: Endace—Stephen Donnelly, CTO	*St David Seminar Rooms 1 & 2*
	Network packet capture and recoding	
13.30—15.10	Session 9: P2P	Session 10: SDN II
	St David Seminar Room 2	*St David Seminar Room 1*
15.10—15.30	Afternoon Tea	
15.30—18.15	City Tour and Olveston Historic House	*Buses depart from St David Lecture Theatre*
19.00—22.30	Conference Dinner	*Otago Museum, Beautiful Science Gallery*

ITNAC 2016 Program at a Glance

Friday	**9 December**	
9.00—10.00	Keynote 3: Professor Liang Zhou	
	St David Lecture Theatre	
10.00—10.20	Morning Tea	
10.20—12.00	Session 11: Physical Layer Protocols	Session 12: Network Deployment & Evaluation
	St David Seminar Room 1	*St David Seminar Room 2*
12.00 –13.00	Lunch	
13.00 –13.30	Industry Talk 3: Open Parallel –Nicolás Erdödy, CEO	*St David Seminar Rooms 1 & 2*
	The SKA project: data and computing challenges	
13.30—15.10	Session 13: Network Design & Analysis	Session 14: MIMO
	St David Seminar Room 1	*St David Seminar Room 2*
15.10—15.30	Afternoon Tea	
15.30—16.00	Closing Remarks	

Wednesday 7 December—Keynote

KEYNOTE 1: Professor Yonghong Tian

9.00—10.00: St David Lecture Theatre

Dr Yonghong Tian is currently a full professor with the Cooperative Medianet Innovation Center, and the National Engineering Laboratory for Video Technology, School of Electronics Engineering and Computer Science, Peking University, Beijing, China. He received the PhD. Degree from the Institute of Computing Technology, Chinese Academy of Sciences, China, in 2005. His research interests include machine learning, computer vision, and multimedia big data. He is the author or co-author of over 120 technical articles in refereed journals and conferences, and has owned more than 30 patents.

Dr. Tian is currently an Associate Editor of IEEE Transactions on Multimedia, International Journal of Multimedia Data Engineering and Management (IJMDEM), and a Young Associate Editor of Frontiers of Computer Science. He has served as the Technical Program Co-chair of IEEE ICME 2015, IEEE BigMM 2015 and IEEE ISM 2015, the organizing committee members of ACM Multimedia 2009, IEEE MMSP 2011, IEEE ISCAS 2013, IEEE ISM 2016. Moreover, he is also the external reviewer of Australian Research Council in the field of computer vision.

He was the recipient of several national and ministerial prizes in China, and obtained the 2015 EURASIP Best Paper Award for the EURASIP Journal on Image and Video Processing. His team was also ranked as one of the best performers in the TRECVID CCD/SED tasks from 2009 to 2012, PETS 2012 and the WikipediaMM task in ImageCLEF 2008. He is a senior member of IEEE and CIE, a member of ACM and CCF.

Chair: Mark. A. Gregory (RMIT University, Australia)

Title: Towards Coding-Representation - Analysis Framework for Multimedia Big Data

Abstract: Multimedia is increasingly becoming the “biggest big data” as the most important and valuable source for insights and information. It covers from everyone’s experiences to everything happening in the world. For various multimedia big data applications, high-efficiency scalable video coding and foreground visual object representation are two of the most important enabling technologies. On one hand, with the exponentially increasing usage of Internet live video, video teleconferencing and real-time traffic monitoring, the high-bit-rate video streams are often required to be real-timely and simultaneously coded or transcoded into multiple quality-maintained low-bit-rate videos for the various bandwidths of client devices. On the other hand, it is crucial to represent foreground objects with arbitrary shape in the coded video stream. For example, in the live video applications, the conferees’ figures in each camera may be directly extracted and be further blended into a virtual meeting room.

In this talk, I will discuss the possibility that the video coding, object representation, and content analysis will be integrated seamlessly in a unified framework for multimedia big data applications. Several recent developments will be presented, including: 1) the methods to represent and encode the object shape in the HEVC coding loop with a small bitrate cost; 2) low-complexity background modeling and saliency-based object segmentation to segment visual objects from images and videos; 3) the model-based high-efficient scalable coding for conference and surveillance videos; 4) the methods and some results by integrating video coding and video analysis in a framework.

Wednesday 7 December

10.20—12.00

Session 1: DTN & Social Networks

St David Seminar Room 1

Chair: Jeremiah D. Deng (University of Otago, New Zealand)

10.20 *Data Ferrying in Tactical Networks Using Swarm Intelligence and Stigmergic Coordination*

Bradley Fraser (Defence Science and Technology Group, Australia); Robert Hunjet (DST Group, Australia) pp. 1-6

10.45 *Inference of Social Network Behavior from Internet Traffic Traces*

Ronald G. Addie (University of Southern Queensland, Australia); Mostfa Albdair (Misan University, Iraq); David Fatseas (University of Southern Queensland, Australia) pp. 7-12

11.10 *Energy Management Policy for Fitness Gadgets: A Case Study of Human Daily Routines*

Sepideh Zareei and Jeremiah D. Deng (University of Otago, New Zealand) pp.13-18

11.35 *Emergency Network Design - Saving Lives by Saving Power*

Nabeel Hadaad (Southern Queensland, Australia); Andreas Pitsillides and Panayiotis Kolios (University of Cyprus, Cyprus); Alan Kuras, and Ronald G. Addie (University of Southern Queensland, Australia)
pp. 19-21

Session 2: Sensor Networks & IoT

St David Seminar Room 2

Chair: Haibo Zhang (University of Otago, New Zealand)

An Enhanced Implementation of a Novel IoT Joining Protocol

Tyler Steane and PJ Radcliffe (RMIT University, Australia)
pp. 22-25

Should My Toaster Be Polled? Towards an energy-efficient Internet of Things

Chrispin Alfred Gray and Leith Campbell (University of Melbourne, Australia) pp. 26-31

A Channel Diversity Path metric for Dual Channel Wireless Body Area Networks

Rein Vesilo and Sobia Omer (Macquarie University, Australia)
pp. 32-37

Energy Efficient Hybrid Clustering Algorithm for Wireless Sensor Network

Cheikh Sidy Mouhamed Cisse and Cheikh Sarr ((University of Thies, Senegal); Khandakar E Ahmed (RMIT University & Melbourne Institute of Technology, Australia); Mark A. Gregory (RMIT University, Australia)
pp. 38-43

Wednesday 7 December

13.00—13.30 **Industry Talk 1: Tait Communications** — **St David Seminar Rooms 1 & 2**

Clive Horn, Research Leader

Critical Communications and Future Evolution

13.30—15.10

	Session 3: Applications — **St David Seminar Room 1**	**Session 4: Scheduling** — **St David Seminar Room 2**
	Chair: Rudolf Mathar (RWTH Aachen University, Germany)	Chair: Haibo Zhang (University of Otago, New Zealand)
13.30	*Wireless Sensor Network Based Water Well Management System for Precision Agriculture* Shuraia Khan (University of Technology Sydney, Australia) pp. 48-50	*Retransmission Scheduling in 802.15.4e LLDN -- A Reinforcement Learning Approach with Relayers* Andreas Willig, Yakir Matusovsky and Adriel Kind (University of Canterbury, New Zealand) pp. 63-69
13.55	*A Cosine Similarity-Based Compensation Strategy for RSS Detection Variance in Indoor Localization* Lei Wang, Xiao Wu, Baoyu Zheng, JingWu Cui and Hui Zhou (Nanjing University of Posts and Telecommunications, P.R. China) pp. 51-56	*Performance of Adaptive RAT Selection Algorithms in 5G Heterogeneous Wireless Networks* Duong Duc Nguyen, Hung Xuan Nguyen and Langford White (University of Adelaide, Australia); pp. 70-75
14.20	*VPAP: VBR Pattern Aware Playback Buffering for Video Streaming* Lahiru Ariyasinghe, Zhiyi Huang, Haibo Zhang, and David Eyers (University of Otago, New Zealand) pp. 57-62	*Load-based dynamic flow scheduling in network security monitoring systems* Jiaqi Zhang, Xiujuan Ma and Lidong Wang (CNCERT, P.R. China) pp. 76-79
14.45	*Emergency Broadcast System: A Reverse 911 Tsunami Information Dissemination System Prototype* Joe Yuan Mambu (Universitas Klabat, Indonesia); Jairo A Gutierrez (Auckland University of Technology, New Zealand) pp. 44-47	*An Efficient and Robust Method for Solving Multi-Objective Constraint-Satisfaction Problems in Cognitive Radio Systems* Ken-Shin Huang and Yi-Luen Chang (National Chung Cheng University, Taiwan); Pao-Ann Hsiung (National Chung Cheng University, Taiwan & Amity University, India) pp. 80-82

Wednesday 7 December

15.30—17.10

Session 5: SDN I

St David Seminar Room 1

Chair: Leith Campbell (University of Melbourne, Australia)

15.30 *SCOR: Constraint Programming-based Northbound Interface for SDN*
Siamak Layeghy, Farzaneh Pakzad and Marius Portmann (University of Queensland, Australia) pp. 83-88

15.55 *Application Performance Monitoring in Software Defined Networks*
Sasirekha Gvk (Avyakta Technologies & IIIT Bangalore, India); Subramaneswara Rao Dasari (BMC, India) pp. 89-94

16.20 *Software Defined Networking Properties in Multi-Domain Networks*
Franciscus Xaverius Ari Wibowo and Mark A. Gregory (RMIT University, Australia) pp. 95-100

16.45 *A Prototype of Policy Defined Wireless Access Networks*
Hung Xuan Nguyen, Khanh Hoang, Duong Duc Nguyen and Eric Parsonage (University of Adelaide, Australia); Thien Pham (University of Adelaide & Oasis Systems, Pty, Australia) pp. 101-106

Session 6: Network Security

St David Seminar Room 2

Chair: Mohammad Rashid (Massey University, New Zealand)

Distilling Command and Control Network Intrusions from Network Flow Metadata using Temporal PageRank
Latchman Singh (Defence Science and Technology Group, Australia); Adriel Cheng (Defence Science and Technology Organisation & Department of Defence, Australia) pp. 107-114

Failure Detection in Virtual Network Environment
Baker Alrubaiey (Deakin University, Australia) pp. 153-156

Privacy Preserving Proximity Testing Using Elliptic Curves
Muhammad N Sakib and Chin-Tser Huang (University of South Carolina, USA) pp. 121-126

Packet Storage Time Attack - A Novel Routing Attack in Mobile Ad hoc Networks
Lincy Elizebeth Jim and Mark A. Gregory (RMIT University, Australia) pp. 127-132

Thursday 8 December—Keynote

KEYNOTE 2: Professor Winston Seah
9.00—10.00: St David Lecture Theatre

Prof. Winston K.G. Seah received the Dr.Eng. degree from Kyoto University, Kyoto, Japan, in 1997. He is currently Professor of Network Engineering in the School of Engineering and Computer Science, Victoria University of Wellington, New Zealand. Prior to this, he has worked for more than 16 years in mission-oriented industrial research, taking ideas from theory to prototypes, most recently, as a Senior Scientist (Networking Protocols) in the Institute for Infocomm Research (I2R), Singapore.

He is actively involved in research in the areas of mobile ad hoc and sensor networks, and co-developed one of the first Quality of Service (QoS) models for mobile ad hoc networks. His latest research is focused on networking protocols to address the needs of 5G networks, the Internet of Things, and other machine-type communications (MTC) technologies, encompassing both long-range communications (LTE-A, Narrowband IoT) as well as short range technologies (IEEE802.15.4, 6LoWPAN, RPL, etc.)

He is a senior member of the IEEE and Professional Member of the ACM. His detailed CV is available at http://www.ecs.vuw.ac.nz/~winston/.

Chair: Krzysztof Pawlikowski (University of Canterbury, New Zealand)

Title: Making Sense out of IoT Non-Sense

Abstract: The Internet that has transformed from its original form that connects computers utilized by humans to one that connects objects, sensors, and any foreseeable device in everyday life, giving rise to the “Internet of Things”. Coined by Kevin Ashton in 1999, the term “Internet of Things” (IoT) refers to this new Internet where devices generate data and communicate, interacting often without any human intervention. Industry and academia alike have exploited IoT in marketing and securing grants respectively, purporting numerous new futuristic IoT products and research as far-fetched as IoT storytelling!!! This talk aims to put some context into the different definitions of IoT, the research challenges, and hopefully make some sense out of IoT “non-sense”.

Thursday 8 December

10.20—12.00

Session 7: System & Platform

St David Seminar Room 1

Chair: Krzysztof Pawlikowski (University of Canterbury, New Zealand)

10.20 *High Security Chaotic Multiple Access Scheme for VLC Systems*
Diyang Li and Junchao Qiu (Sun Yat-sen University, P.R. China); Lin Zhang (Sun Yat-sen University & SYSU-CMU Shunde International Joint Research Institute, P.R. China) pp. 133-135

10.45 *Hardware-in-the-Loop Simulation Evaluation of LTE in High-speed Railway*
Xiong Lei (Beijing Jiaotong University, P.R. China); Zhenhui Tan (School of Electronic and Information Engineering, Beijing Jiaotong University, P.R. China); Xiaojun Jin (Beijing Jiaotong University, USA) pp. 136-139

11.10 *Design and Implementation of Camera Network Platform for Information Exchange using Dual Wireless Interface*
Beomjun Kim, Jaebong Lim and Yunju Baek (Pusan National University, Korea); Sanghyun Son (Pusan National University & Embedded Systems Lab., Korea) pp. 140-145

11. 35 *Mobilegt: a System to Collect Mobile Traffic Trace and Build the Ground Truth*
Zhen Liu (Guangdong Pharmaceutical University, P.R. China); Ruoyu Wang (South China University of Technology, P.R. China) pp. 146-148

Session 8: Network Management

St David Seminar Room 2

Chair: Richard J. Harris (Massey University, New Zealand)

Autonomic Management of Future Wireless Networks
Manzoor Ahmed Khan (TU Berlin, Germany); Hamidou Tembine (New York University & Learning and Game Theory Lab, USA) pp. 149-152

Securing RPL Routing Protocol from Blackhole Attacks Using a Trust-based Mechanism
David Osemeojie Airehrour and Jairo A Gutierrez (Auckland University of Technology, New Zealand); Sayan Kumar Ray (Manukau Institute of Technology, New Zealand) pp. 115-120

Regulation and investment: a time-series analysis for next- generation networks in Mexico
Oscar Saenz de Miera Berglind (Centro de Estudios Instituto Federal de Telecomunicaciones, Mexico) pp. 157-162

A Taxonomy for Network Policy Description Languages
Andrew Curtis-Black, Andreas Willig and Matthias Galster (University of Canterbury, New Zealand) pp. 163-169

Thursday 8 December

13.00—13.30 **Industry Talk 2: Endace—Stephen Donnelly, CTO** — **St David Seminar Rooms 1 & 2**

Network packet capture and recoding

13.30—15.10

	Session 10: SDN II — **St David Seminar Room 1**	**Session 9: P2P** — **St David Seminar Room 2**
	Chair: Ronald A. Addie (University of Southern Queensland, Australia)	Chair: Alexander A. Kist (University of Southern Queensland, Australia)
13.30	*FastSplit: Fast and Dynamic IP Mobility Management in SDN* Pragati Shrivastava and Kotaro Kataoka (Indian Institute of Technology Hyderabad, India) pp. 170-176	*Node Allocation in Peer-to-Peer Overlay Networks based Remote Instrumentation with Smart Devices* Ananda Maiti, Andrew Maxwell and Alexander A. Kist (University of Southern Queensland, Australia) pp. 195-202
13.55	*SFO: SubFlow Optimizer for MPTCP in SDN* Kalpana Joshi (IIT Hyderabad, India); Kotaro Kataoka (Indian Institute of Technology Hyderabad, India) pp. 177-182	*Request Response Scheme on Server for the Centralized P2P- VoD System* Yi Cheng, Jianxin Chen, Sun Linhui and Yunyi Zheng (Nanjing University of Posts and Telecommunications, P.R. China) pp. 203-205
14.20	*SProxy ARP - Efficient ARP Handling in SDN* Talal Alharbi and Marius Portmann (University of Queensland, Australia) pp. 183-188	*Peering into Peering: Building Better Tools for Better Peering Decisions* John Robert Mendoza (University of the Philippines - Diliman, & Advanced Science and Technology Institute, Philippines); Isabel Montes and Josuel Racca (University of the Philippines - Diliman, Philippines); Roel Ocampo (University of the Philippines, Philippines); Cedric Angelo Festin (Networks and Distributed Systems Lab, Philippines) pp. 206-211
14.45	*Context Aware Mobile Data Offload Using SDN* Hung-Chin Jang and Chien-Hsiung Chang (National Chengchi University, Taiwan) pp. 189-194	*Mobile Media Service Distribution in Device-to-Device Communication Underlaying Cellular Networks* Mingkai Chen, Lei Wang , Baoyu Zheng and JingWu Cui (Nanjing University of Posts and Telecommunications, P.R. China) pp. 212-215

Friday 9 December—Keynote

Keynote 3: Professor Liang Zhou

Chair: Rudolf Mathar (RWTH Aachen University, Germany)

9.00—10.00 St David Lecture Theatre

Title: Large-Scale Video Transmission via D2D Communication

Dr. Liang Zhou received his Ph.D. degree major at Electronic Engineering both from Ecole Normale Superieure (E.N.S.), Cachan, France and Shanghai Jiao Tong University, Shanghai, China in March 2009. From 2009 to 2010, he was a post-doctoral researcher in ENSTA-ParisTech, Paris, France. From 2010 to 2011, he was a Humboldt Research Fellow in Technical University of Munich, Munich, Germany. Now, he is a professor at Nanjing University of Posts and Telecommunications, China. His research interests are in the area of multimedia communications and networks, in particular, resource allocation and scheduling, cognitive and cooperative communications, cross-layer design, multimedia security, multimedia signal processing. He currently serves as an editor for IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Multimedia, and guest editor for IEEE Systems Journal, EURASIP Journal of Wireless Communications and Networking, ACM/Springer Multimedia Systems Journal. He also serves as Co-Chair and Technical Program Committee (TPC) member for a number of international conferences and workshops (e.g., IEEE Globecom'10-16, IEEE ICC'10-16 etc.).

Abstract: The explosive increase of the mobile video service has imposed a substantial challenge for the current cellular networks. D2D communication, as a key technology in the fifth mobile communication system, provides a powerful platform for large-scale video transmission. However, D2D communication also suffers from immense challenges due to the limited storage capacity, the discrepant computational ability, the dynamic communication environment, the random network establishment, and the diverse services of the large-scale video applications. To get over the dilemma, this work aims at significantly improving the system capacity, and deeply investigating the key technologies of the D2D video communication. Specifically, through studying the relationship between the D2D communication service qualities and the video coding, this work incorporates the advantages of the Scalable Video Coding and Fountain Codes, and design a hybrid video coding with flexibility, robustness, and simplicity. Subsequently, to resolve the fundamental contradiction between the limited storage capacities and the large- scale video contents, this work proposes an efficient content updating and delivery strategy based on the appropriate prediction of the video popularity, priority, and requirement. In addition, by analyzing the multi-dimension heterogeneous conditions of the D2D communication, this work designs a cooperative video scheduling scheme to realize the dynamic optimization adaptation between the video streaming and network resource.

Friday 9 December

10.20—12.00

Session 11: Physical layer protocols

St David Seminar Room 1

Chair: Camilla Hollanti (Aalto University, Finland)

10.20 *A Rapid Optimization Approach for Anti-jamming of Frequency Hopping System*

Shuo Liu, Pengbo Si Yu He, Susu Lv, Haitao Li and Yanhua Zhang (Beijing University of Technology, P.R. China); Xiaohan Gao (Beijing University of Posts and Telecommunications, P.R. China) pp. 216-220

10.45 *Hybrid OCDMA Over WDM System with DPSK Modulation Using Direct and Complementary Subtraction Detection Techniques*

Mohammad Rashid (Massey University, New Zealand) pp. 221-225

11.10 *Hardware Acceleration of Signature Matching through Multi-Layer Transition Bit Masking*

Shiva Shankar Subramanian and PinXing Lin (Intel Technology Asia Pvt. Ltd., Singapore); Andreas Herkersdorf (Technische Universität München & Chair for Integrated Circuits, Germany); Thomas Wild (Technical University of Munich, Germany) pp. 226-233

11.35 *Time-Domain OFDM Carrier Phase Estimation for Wireless Sensor Network Syntonization*

Hans-Martin Tröger, Markus Hartmann, Lucila Patino-Studencki, Joerg Robert and Albert Heuberger (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany) pp. 234-239

Session 12: Network Deployment & Evaluation

St David Seminar Room 2

Chair: Mark A. Gregory (RMIT University, Australia)

Particle Swarm Optimization for Charger Deployment in Wireless Rechargeable Sensor Networks

Yen-Chung Chen and Jehn-Ruey Jiang (National Central University, Taiwan) pp. 240-245

IPv6 Campus Network Deployment Guidelines for DNS, Web Server, Proxy Server and Wi-Fi

Adeel Baig (National University of Sciences and Technology, Pakistan & Al Yamamah University, Riyadh, Saudi Arabia) pp.246-251

Evaluation of Mininet-WiFi Integration via ns-3

Farzaneh Pakzad, Siamak Layeghy and Marius Portmann (The University of Queensland, Australia) pp. 252-257

Making A Case for the Moving Small Cells

Syed Shan e Raza Jaffry, Faraz Hasan and Xiang Gui (Massey University, New Zealand) pp. 312-314

Friday 9 December

13.00—13.30 **Industry Talk 3 - Open Parallel - Nicolás Erdödy, CEO** — **St David Seminar Rooms 1 & 2**

The SKA project: data and computing challenges

13.30—15.10

Session 13: Network design & Analysis

St David Seminar Room 1

Chair: Jehn-Ruey Jiang (National Central University, Taiwan)

13.30 *Performance Analysis of Hierarchical Caching Systems with Bandwidth Constraints*
Valentin Burger and Thomas Zinner (University of Wuerzburg, Germany) pp. 264-269

13.55 *Integrated Network Design for Measurement and Communication Infrastructures in Smart Grids*
Halil Alper Tokel, Gholamreza Alirezaei and Rudolf Mathar (RWTH Aachen University, Germany) pp. 270-276

14.20 *Fractal Renewal Process based analysis of Emerging Network Traffic in Access Networks*
Muhammad Asad Arfeen (NED University of Engineering & Technology, Pakistan); Krzysztof Pawlikowski, Andreas Willig and Don McNickle (University of Canterbury, New Zealand)
pp. 277-282

14.45 *Efficient Dequeuing Technique for Distributed Messaging Systems Processing Massive Message Volumes*
Hiroaki Konoura, Masafumi Kinoshita and Takafumi Koike (Hitachi, Ltd., Japan); Kenji Leibnitz (NICT & Osaka University, Japan); Masayuki Murata (Osaka University, Japan)
pp. 283-288

Session 14: MIMO

St David Seminar Room 2

Chair: Jairo A. Gutierrez (Auckland University of Technology, New Zealand)

Information Bounds and Flatness Factor Approximation for Fading Wiretap MIMO Channels
Amaro Barreal, Alex Karrila, David Karpuk and Camilla Hollanti (Aalto University, Finland) pp. 289-294

Antenna Selection in Massive MIMO Using Non-Central Principal Component Analysis
Muhammad Tausif Rana, Rein Vesilo and Iain B. Collings (Macquarie University, Australia) pp. 295-300

Well-Rounded Lattices for Coset Coding in MIMO Wiretap Channels
Oliver Gnilke, Amaro Barreal, Alex Karrila, Ha Thanh Nguyen Tran, David Karpuk and Camilla Hollanti (Aalto University, Finland)
pp. 301-306

Implementation of PCC-OFDM on a Software Defined Radio platform
Gayathri Kongara and Jean Armstrong (Monash University, Australia)
pp. 307-311

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The organising Committees wish to acknowledge and thank the following sponsors and supporters

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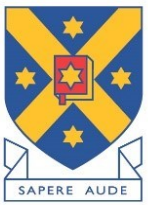


UNIVERSITY of OTAGO

Te Whare Wānanga o Otāgo

NEW ZEALAND

The University of Otago's Telecommunications Programme is a proud supporter of ITNAC'16. The TELE Programme is cooperated by the Information Science and Computer Science departments, and has produced talents that are employed by national and international telcos, recruited by PhD programs in Stanford and by tech giants such as Twitter. From 2016 the TELE Programme will continue to offer postgraduate degrees such as the Postgraduate Diploma in Applied Science and Masters of Applied Science.

Useful Information

University of Otago Campus

If you need after hours assistance, the Campus Watch operator is available 24 hours on phone ***+64 3 479 5000***

There is a small map of the campus on the back page of this Programme Booklet,

and you may find this helpful also.

Wi-fi Access on campus

Visitors to our campus can make their own account with us via the **UO_Guest network**.

http://www.otago.ac.nz/its/services/network/otago485402.html

If you are a visitor from another eduroam participating institution, you can use eduroam for secure wireless network access using your authentication credentials from your home institution.

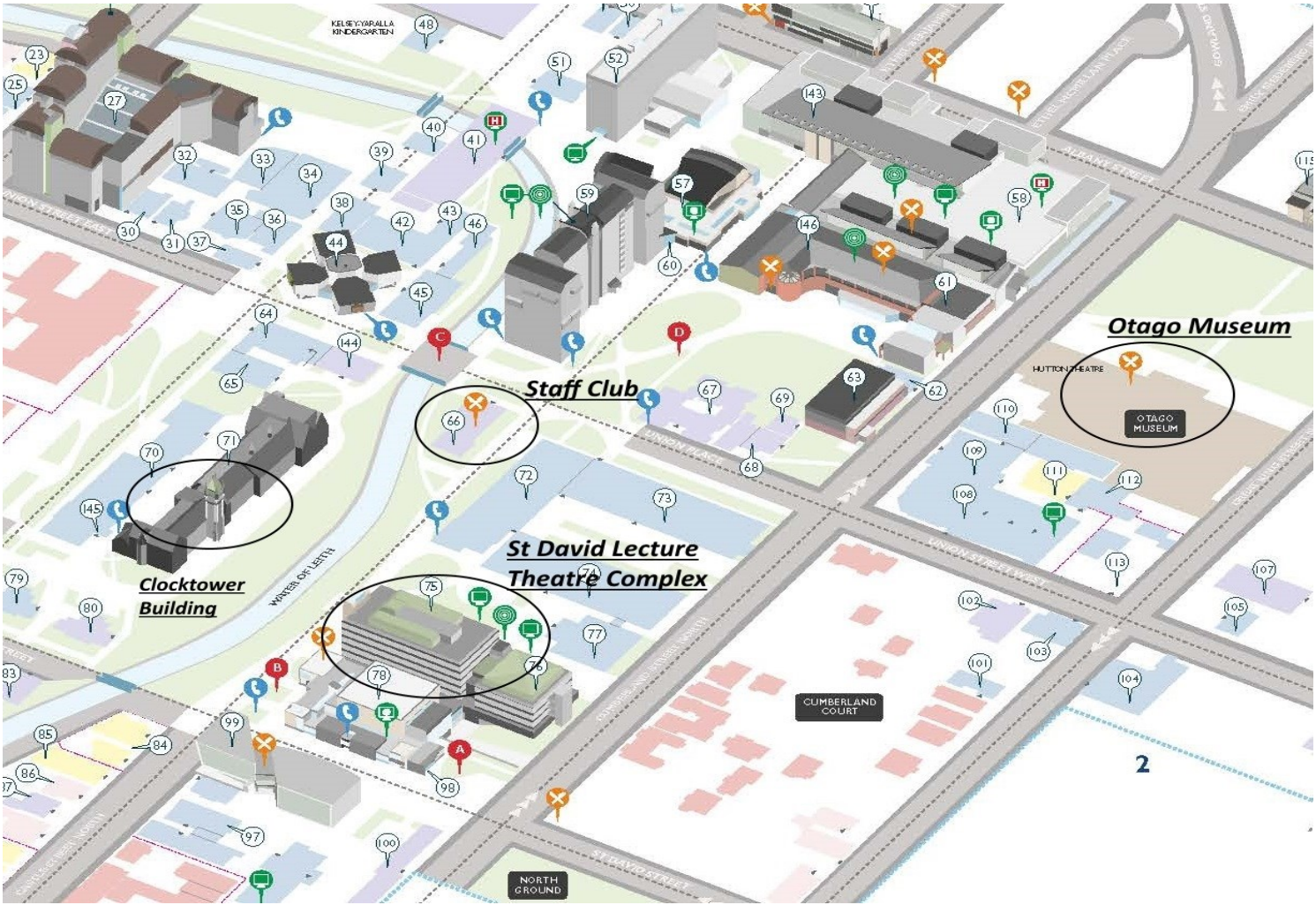
http://www.otago.ac.nz/its/services/network/otago054090.html

Dunedin Dining

Dunedin has a large number of restaurants and cafés offering a variety of menus

www.menumania.co.nz/restaurants/browse/dunedin-city

www.menus.co.nz/restaurants/dunedin-city-centre


Otago Museum
Staff Club
St David Lecture Theatre Complex
Clocktower Building
OTAGO MUSEUM
HUTTON THEATRE
CUMBERLAND COURT
NORTH GROUND
UNION PLACE
UNION STREET EAST
WATER OF LEITH
2

The University of Otago campus is noted in bold writing in the centre of the map. The Clocktower Building is directly opposite the St David Lecture Theatre Complex.

Dunedin's most well known buildings are on the map, including Olveston Historic House which we will visit during the city tour.

The streets coloured orange are the main one-way streets in and out of Dunedin city.

When coming from Dunedin Airport, you will enter the city from the south. It will take approximately 30 minutes to reach the city centre.