



7th Pacific Rim Symposium on Image and Video Technology

23-27 November, 2015, Auckland, New Zealand



7th Pacific Rim Symposium on Image and Video Technology

23 - 27 November 2015

Engineering Building, The University of Auckland
New Zealand



Thank you to our Sponsors

Bronze Sponsors



Social Event Sponsor



Contents

Welcome.....	3
PSIVT 2015 Organising Committee	4
Map	5
General Information	6
Social Programme	8
Auckland Information	9
Keynote Speakers	11
Conference Programme.....	14
Notes	22

Welcome from PSIVT

The Pacific-Rim Symposium on Image and Video Technology provides a forum for researchers to present the latest research and developments in image and video technology. Previous issues of PSIVT have been in Taiwan (2006), Chile (2007), Japan (2009), Singapore (2010), Korea (2011), and in Mexico (2013).

The 2015 issue of this symposium takes place in the largest city of New Zealand, in Auckland. It is hosted by The University of Auckland, and co-organised by Auckland University of Technology. Both universities have more than 35,000 students each, with a large percentage of students coming from overseas.

We like to welcome all the participants of PSIVT 2015 to this beautiful "City of Sails" in the South Pacific, and wish you interesting, stimulating, and enjoyable days here in New Zealand.

There is also a long list of people we like to thank for contributing to the success of the symposium.

First of all we thank the three keynote speakers, Viktor Erukhimov, who will talk about "Embedded realtime computer vision", Hans J. (Joe) Wuensche with his talk on "Perception for Off-road Driving", and Richard Green who will present "Computer Vision for Precision Agriculture".

Next we thank all the authors of accepted papers, and especially the presenters, who contribute actively to the symposium program.

Of course, we also thank everyone in the organizing committee and Event Services of The University of Auckland, especially Tessa Lloyd-Hagemann and Amy Claughton, and our student helpers.

We thank the International Association for Pattern Recognition (IAPR) for endorsing the event, and Springer's Lecture Notes in Computer Science, especially Mr. Alfred Hofmann and Mrs. Anna Kramer, for having the main conference and the workshop papers published as post-conference LNCS volumes.

We also thank our sponsors, AUT School of Engineering, Computer and Mathematical Sciences, IMIT at Chiba University, the Nagoya Institute of Technology, the KEPCO Chair at KAIST, Korea, and IEEE North Section, New Zealand.

We wish you all a wonderful PSIVT 2015.

Reinhard Klette

Auckland University of Technology, New Zealand

In So Kweon

KAIST, Korea

PSIVT 2015 Organising Committee

Program Co-Chairs

- Thomas Bräunl
Robotics Lab at UWA, Australia
- Brendan McCane
Otago University, New Zealand
- Mariano Rivera
Central Institute for Mathematics and Applications (CIMAT), Mexico
- Xinguo Yu
Central China Normal University, China

General Co-Chairs

- Reinhard Klette
Auckland University of Technology, New Zealand
- In So Kweon
KAIST, Korea

Workshop Co-Chairs

- Fay Huang
National Ilan University, Taiwan
- Akihiro Sugimoto
National Institute of Informatics, Japan

Demo Co-Chairs

- Michael Cree
The University of Waikato, New Zealand
- Nicolai Petkov
Groningen University, The Netherlands

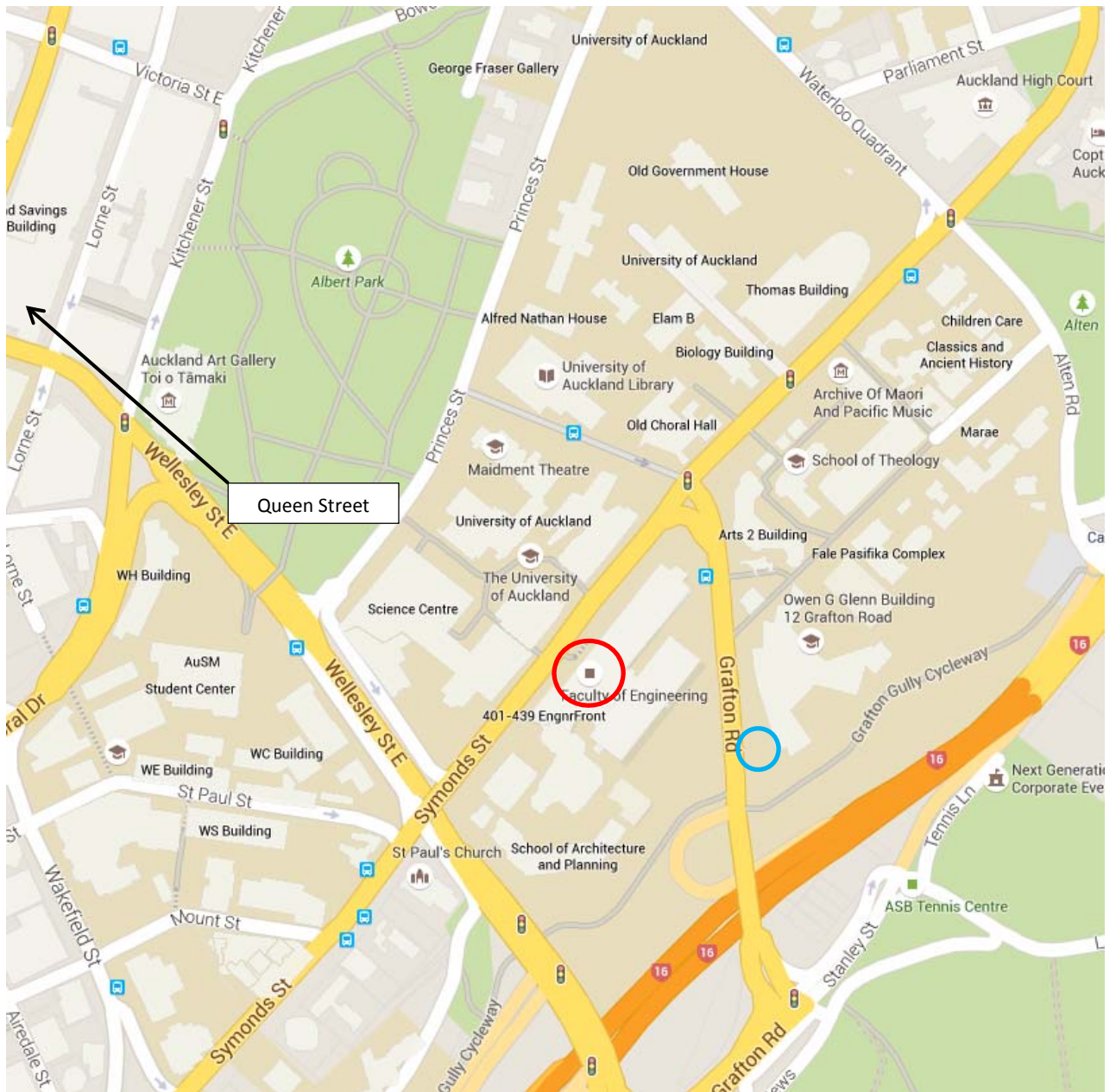
Tutorial Co-Chairs



- Domingo Mery
Universidad Católica de Chile, Chile
- Huang Qing Ming
University of Chinese Academy of Sciences, China

Area Chairs

- Phil Bones
University of Canterbury, New Zealand
- Li Chen
University of the DC, USA
- Jian Cheng
Chinese Academy of Sciences, China
- Uwe Franke
Daimler A.G., Germany
- Hanseok Ko
Korea University, Korea
- Chilwoo Lee
Chonnam National University, Korea
- Wen-Nung Lie
National Chung Cheng University, Taiwan
- Chia-Yen Chen
National University of Kaohsiung, Taiwan
- Rick Millane
University of Canterbury, New Zealand
- Takeshi Oishi
Tokyo University, Japan
- Lei Qin
Chinese Academy of Sciences, China
- Shin'ichi Satoh
NII Tokyo, Japan
- Terence Sim
National University of Singapore, Singapore
- Zhixun Su
Dalian University of Technology, China
- Yue Wang
Institute for Infocomm Research, Singapore

Map



-  Conference Venue
-  OGGB car park entrance

General information

The following information is provided as a guide to the conference and to Auckland. If you have any queries, please visit the registration desk.

Registration Desk Hours

For any questions, please visit the registration desk during registration and catering breaks.

Conference Venue

The conference will be held on level 4 of the Engineering Building:

Physical address:

20 Symonds Street, Auckland.

Catering

Lunches, morning and afternoon teas will be served in the Engineering Building, Level 4 Atrium.

Care is taken to ensure all dietary requirements are catered to. Vegetarian and halal options are provided with each meal break. If you have made a special request please talk to the catering staff.

Mobile Phones

During all presentations please switch off or turn your mobile phones to silent.

Urgent messages and lost property

Urgent messages for delegates and lost property can be directed to the registration desk.

Messages and lost property will be held there for collection until the conclusion of the conference.

Car Parking

Parking is available in the lower levels the Owen G Glenn Building, 12 Grafton Road, Auckland.

You can purchase \$12 parking exit tickets from the conference reception desk during the conference - payment by cash or credit card. This is the same price as early-bird parking but has no restrictions on entry or exit time. Enter the car park as normal then come to the reception desk to purchase the replacement exit ticket.

Internet Access

Wireless internet access is available for delegate use. Visit the registration desk for details.

Name Tags

Please wear your name tag at all times during the workshop and social events. You will be asked to present your name tag to enter the welcome reception and dinner.

No Smoking Policy

Delegates should be aware that smoking is banned from all public buildings in New Zealand and is also banned from all University of Auckland property. This policy is strictly enforced. Smokers are able to smoke on public land/footpaths only.

Banks and ATM Machines

The nearest banks can be found on level 1 of the Kate Edgar Information Commons (ANZ) directly across Symonds St and level 1 of the Owen G Glenn Building (ASB).



Engineering Building

Presentations

As a courtesy to our presenters, please ensure you arrive at each session venue prior to the start of presentations.

Cameras and electronic recording

No electronic recording of presentations is permitted in any form without the express permission of workshop organisers and speakers.

Presenting Authors

Each session chair will be keeping strictly to time.

If you are scheduled to give a presentation, please ensure your PowerPoint is uploaded well in advance of your presentation time, preferably during the catering breaks or prior to the start of each day. To upload your presentation, please take it to your presentation room on a USB memory stick. A member of the organising team will be available to assist you.

Rooms and AV

Each room features standard audio-visual equipment including white screens, whiteboards, data projector, Windows lecture computers and lectern microphone.

If you have videos or animations in your presentation, please ensure you have embedded the files in your presentation and copied and transferred the video file together with your PowerPoint presentation. Without doing this, your video may not function. WMV or AVI file types are recommended.

Please bring your presentation on a USB which can easily be loaded onto the lecture theatre computer.

Emergencies, medial needs and illnesses

If you have an emergency you can contact the police, paramedics and fire department by calling 111 from any landline or mobile phone.

If you require non-emergency medical attention during the workshop, please inform the registration desk.



Settlers Country Manor

Welcome Reception

Wednesday 25 November, 5.30pm

Level 4 Atrium, Engineering Building

The Welcome reception is available to those who have registered to attend this event. Please make sure you present your name tag on arrival, as it includes your ticket(s) to this reception.

Excursion & Conference Dinner

Thursday 26 November, 3.10pm

Muriwai Beach and Settlers Country Manor

Muriwai Beach is a beautiful, windswept beach on Auckland's wild west coast. Don't miss the impressive gannet colonies nestled on the rugged coastline. Afterwards, travel to the historical Settlers Country Manor for dinner. Explore the grounds and enjoy a South Pacific performance.

The Conference dinner is available to those who have registered to attend this event. Please make sure you present your name tag on arrival. Buses will leave from Alfred Street at 3.10pm.

Survivor's Party

Friday 27 November, 5.30pm

Neon Foyer, Level 4, Engineering Building

Enjoy a well-deserved happy end of the conference, with music, nibbles and drinks. Your name tag will provide access to the event.



The Viaduct harbour

Auckland Information

The following information is provided as a guide to Auckland. If you have any queries, please visit the registration desk.

Getting around

Buses

The Link bus connects Auckland city fringe suburbs with the central business district. There are also free environmentally-friendly, hybrid City Circuit buses that follow a route around the inner city. Buses run to all parts of the Auckland region from the Britomart transport centre, downtown. Trains run regularly to central, south and west Auckland suburbs from the Britomart rail station.

www.maxx.co.nz

Taxis and shuttles

If you require a taxi there are a host of companies to choose from. Some recommended companies are:

Auckland Co-op Taxi: 09 300 3000
Discount Taxi: 09 529 1000
Green Cabs: 0508 447 336
Airbus Shuttle: 09 366 6400

Night on the town

Want to go out for a night on the town but unsure where to start? Here are a few options:

Britomart

Britomart is a vibrant shopping, entertainment and business precinct in the heart of downtown Auckland. Surrounded by beautiful heritage buildings, it's a neighbourhood of buzzing restaurants, cool bars, designer boutiques and quirky art spaces.

Viaduct Harbour

Hobson Wharf, Corner of Quay and Hobson Street

With over 20 bars and restaurants to choose from in one waterfront destination, Viaduct Harbour is a superb place to dine or relax and watch the world go by. On Friday and Saturday nights the bars and restaurants are filled with people looking for fun and excitement.

SkyCity

Corner of Victoria and Federal Streets
5-star restaurants, bars, clubs, casinos and the Sky Tower!

Ponsonby Road

Ponsonby road, Auckland's hippest strip, is easily accessible by the Inner Link bus and home to over 100 of Auckland's top cafes, bars and restaurants. Take a stroll down the strip to check out the boutique shops, local fashion scene and some of the best coffee in Auckland.



Karangahape Road

Immerse yourself in vintage shopping and the flavours and delights of local cafes, restaurants and ethnic eateries. Enjoy the lively nightlife and the contrast of respectable and risqué that is K Rd.
www.kroad.com

Keynote Speakers

Victor Erukhimov

Itseez3D, CEO

<http://itseez.com>

Embedded Realtime Computer Vision

We are entering the era of devices that are able to see and understand the world. Computer vision scientists and engineers who create these future systems, from automotive safety to augmented and virtual reality, need to push the limits of embedded low power computing. We will discuss the implementation of such systems, using examples such as itSeez3D, the first mobile color 3D scanner for consumers. We will cover OpenCV as a tool for developing embedded realtime algorithms, as well as OpenVX — the recently standardised hardware abstraction layer for computer vision.



Biography

Victor is an entrepreneur with an extensive background in computer vision. Prior to co-founding Itseez, Victor worked as a project manager and senior research scientist at Intel Corporation. He is the author of more than 25 papers in the areas of computer vision and machine learning as well as of several US and international patents. Victor has also been involved in several open source projects, being a developer of OpenCV library. Since 2012 Victor serves as chairman of the OpenVX working group at Khronos that develops the open standard for the computer vision industry.

Hans J. (Joe) Wuensche

http://www.unibw.de/lrt8/index_html-en

Perception for Off-road Driving

After a short introduction to the University of the Bundeswehr Munich (UBM) Joe Wuensche will briefly review 25 years of history of robot cars at UBM, especially achievements with the 1st and 2nd generation UBM cars, which drove autonomously, solely vision-based on German autobahns at rather high speeds already back in 1986. Then he will focus on his current research vehicle MuCAR-3, a modified VW Touareg used for autonomous on- and off-road driving. Joe will explain the fundamentals of the 4D-approach to environment perception developed at UBM, followed by a closer look at visual and Lidar-based perception inclusive various sensor-fusion results. Situation assessment and off-road object-related navigation without GPS or with only very sparse GPS information is another focus of the talk. Throughout the talk, videos will demonstrate achieved performance, especially on-board race videos from the European Land Robot Trials (EIROBs) and of various projects of automated UGVs including visual night-time perception and a new approach to recursive stereo vision. He will also highlight the differences between the EIROB trials and the DARPA Grand and Urban Challenges, where his team participated as part of the German team "AnnieWay", making it into the 2007 finals of the Urban Challenge.

Biography

After receiving his MSc in Aerospace Engineering from UT Austin, USA, Joe Wuensche was supervised for his Ph.D. by Prof. E.D. Dickmanns, a well known pioneer for autonomous cars, at the University of the Bundeswehr Munich (UBM), with graduation in 1987. He served in leading positions at MBB Automation Technology, Schroff GmbH, USA, and Pentair Europe. He has been a member and chairman of the board of several publicly trading German companies.



Since 2004 he has the chair for "Autonomous Systems Technology" at UBM, since 2008 he is the director of the identically named institute, and since 2011 he is the director and CEO of the research center "MOVE" (modern vehicles) at UBM. In addition he has been since 2009 the CEO of his own, an UBM spin-out, company IFTAS GmbH. Currently he is the elected dean of the department of Aerospace Engineering at UBM. His team operates the autonomous vehicles MuCAR-3 and MuCAR-4, with which it has successfully entered many competitions and events: MuCAR-3 came in first in every event entered during all EIROB trials from 2007 to 2012 (apart from one second place at EIROB 2008); with team AnnieWay his team was one of only 11 finalists in the 2007 DARPA Urban Challenge.

Joe's research interests focus on perception and biologically inspired navigation in challenging, unstructured off-road environments. He and his team have automated numerous unmanned ground vehicles ranging in size from small 50 kg robots, various passenger and electric logistic vehicles, to 3000 kg reconnaissance vehicles and 25 ton trucks. His research funding comes from the German Research Foundation, the German ministry of defence, and all major German car companies. Together with his approximately 15 Ph.D. students he has authored more than 100 publications.

Richard Green

University of Canterbury

<http://www.cosc.canterbury.ac.nz/richard.green/>

In recent times, automating agriculture has become increasingly dependent on computer vision algorithms. This presentation will discuss the challenges of automating precision agriculture using autonomous aerial vehicles, autonomous underwater vehicles and farm robots. As an example of such challenges, this presentation will describe a robot system for automatically pruning grape vines, which uses a trinocular system to build 3D models of vines and an AI system to determine which canes should be pruned. Within this mobile platform straddling rows, a six degree-of-freedom robot arm makes the required cuts. The main innovation is the computer vision system which builds 3D models of the vines. These models must be sufficiently complete and correct to make decisions on where to prune. This system is based on a feature matching and incremental bundle-adjustment pipeline where each stage of this pipeline is customised to work well for vines. The AI algorithm uses these models to decide which canes to cut, where these decisions are consistent with the decisions made by pruning experts.



Biography

Associate Professor Richard Green completed his PhD in 2003 from the University of Sydney focusing on computer vision based tracking and recognition of sports skills. While pursuing his PhD, he won an IEEE Journal Best Paper of the Year Award. He had previously successfully led the research, development and commercialisation of banking software for the international banking industry from his own start up company of 50 staff in Australia and eventually sold the IP to a multi-national computer corporation. Since 2004 he has been lecturing in computer science at the University of Canterbury with over 150 refereed publications. He heads the Computer Vision Research Lab with an emphasis on 3D robot vision for autonomous aerial vehicles, autonomous underwater vehicles and also leads a \$3 million MBIE research project which has developed an intelligent vision-based pruning system.

Programme

Monday 23rd November		
8.30am	Registration Level 4 Atrium, Engineering Building, 20 Symonds Street, Auckland	
	Workshop	
10.30am	Session 1	
	Robot Vision (RV 2015) Opening: Young-Jae Ryoo, Korea (Session Chair: Young-Jae Ryoo)	
10.40am	Christopher D. Williams, Manoranjan Paul and Tanmoy Debnath. <i>Enhancing Automated Defect Detection in Collagen Based Manufacturing by Employing a Smart Machine Vision Technique</i>	
11.00am	Morning Tea Level 4 Atrium	
11.30am	Session 2	
	Robot Vision (RV 2015) (Session Chair: Loulin Huang, New Zealand)	
	Kinam Lee, Young-Jae Ryoo. <i>Computer Vision Technology for Robot to Follow Guided Track Using Neuro-Fuzzy System</i>	
	Ying Zhao, Chao Chen, Liyan Liu and Wei Wang. <i>Automatic Matting using Depth and Adaptive Trimap</i>	
	Haokun Geng, Hsiang-Jen Chien and Reinhard Klette. <i>Multi-Run: An Approach for Filling in Missing Information of 3D Roadside Reconstruction</i>	
	Tom Botterill, Matthew Signal, Steven Mills and Richard Green. <i>Design and Calibration of Multi-Camera Systems for 3D Computer Vision: Lessons Learnt from Two Case Studies</i>	
	Mahmudul Hassan and Anuja Dharmaratne. <i>Attribute Based Affordance Detection from Human-Object Interaction Images</i>	
	Discussion and Concluding remarks by Workshop Organisers	
1.10pm	Lunch Level 4 Atrium	
	Workshops (Parallel Sessions)	
1.15pm	Session 1	
	2D and 3D Geometric Properties from Incomplete Data (GPID 2015) (Session Chair: Ryszard Kozera, Poland)	Vision meets Graphics (Session Chair: Taehyun Rhee, New Zealand)
1.20pm	Ryszard Kozera and Lyle Noakes. <i>Optimal Knots Selection for Sparse Reduced Data</i>	Invited Talk Mark Sagar, University of Auckland <i>Autonomous Facial Animation using Models of Embodied Cognition</i>
	Bingshu Wang, Wenqian Zhu, Yong Zhao and Yongjun Zhang. <i>Moving Cast Shadow Detection using Joint Color and Texture Features with Neighboring Information</i>	(Session Chair: Taehyun Rhee, New Zealand)
	Leszek J Chmielewski, Arkadiusz Orłowski, Katarzyna Śmietańska, Jarosław Górski, Krzysztof Krajewski, Maciej Janowicz, Jacek Wilkowski and Krystyna Kietlińska. <i>Detection of Surface Defects of Type 'Orange</i>	Marco Visentini-Scarzanella, Takuto Hirukawa, Hiroshi Kawasaki, Ryo Furukawa and Shinsaku Hiura. <i>A Two Plane Volumetric Display for Simultaneous Independent Images at Multiple</i>

	<i>Skin' in Furniture Elements with Conventional Image Processing Methods</i>	<i>Depths</i>
	Sandipan Banerjee and Domingo Mery. <i>Iris Segmentation using Geodesic Active Contours and GrabCut</i>	Jinwoo Lee, Joo-Haeng Lee and Junho Kim. <i>Analysis on Coupled Line Cameras using Projective Geometry</i>
	Paul L. Rosin and Joviša Žunić. <i>Measuring Convexity via Convex Polygons</i>	
3.00pm	Afternoon Tea Level 4 Atrium	
	Session 2	
3.45pm	2D and 3D Geometric Properties from Incomplete Data (GPID 2015) (Session Chair: Lyle Noakes, Australia)	Vision meets Graphics (Session Chair: Paul Rosin, UK)
	Rafael Guillermo Gonzalez Acuña, Junli Tao, Daniel Breen, Barbara Breen, Steve Pointing, Len Gillman and Reinhard Klette. <i>Robust Segmentation of Aerial Image Data Recorded for Landscape Ecology Studies</i>	Jinze Yu, Martin Constable, Junyan Wang, Kap Luk Chan and Michael S. Brown. <i>Aesthetic Interactive Hue Manipulation for Natural Scene Images</i>
	Ryszard Kozera, Felicja Okulicka-Dłuzewska and Lyle Noakes. <i>Integrated Parallel 2D-Leap-Frog Algorithm for Noisy Three Image Photometric Stereo</i>	Thomas Iorns and Taehyun Rhee. <i>Real-Time Image Based Lighting for 360-degree Panoramic Video</i>
	Marcin Bator, Leszek J Chmielewski and Arkadiusz Orłowski. <i>Heuristic Assessment of Parameters of the Local Ground Approximation from Terrestrial LIDAR Data</i>	(Session Chair: Paul Rosin, UK)
4.35pm	Fernando Díaz-del-Río, Pedro Real, and Darian Onchis. <i>A Parallel Implementation for Computing the Region-Adjacency-Tree of a Segmentation of a 2D Digital Image</i>	Invited Talk David Mould, Carleton University <i>Detail Preservation and Enhancement in Image Stylization</i>
	H. Waruna H. Premachandra, Chinthaka Premachandra, Hiroharu Kawanaka and Tomotaka Kimur. <i>Character Recognition of Sinhala Scripts using Character Geometry Features and Artificial Neural Networks</i>	
	Władysław Homenda and Krystian Kwieciński. <i>Attribute Grammars for Controlling House Layout Customization</i>	
5.25pm	Workshop Close	

Tuesday 24 th November		
8.30am	Registration Level 4 Atrium, Engineering Building, 20 Symonds Street, Auckland	
	Workshops (Parallel Sessions)	
9.30am	Session 1	
		Passive and Active Electro-Optical Sensors for Aerial and Space Imaging (EO4AS 2015) Opening: Ralf Reulke and John Robertson (Session Chair: Anko Börner, Germany)
9.40am		Invited Talk Andreas Brunn, BlackBridge <i>Recent Progress in In-Flight Radiometric Calibration and Validation of the RapidEye Constellation</i>
10.20am		Invited Talk Ruedi J. Wagner, Leica Geosystems <i>Developments in Airborne and UAV Sensors</i>
11.00am	Morning Tea Level 4 Atrium	
11.30am	Session 2	
	Mathematical and Computational Methods in Biomedical Imaging and Image Analysis (MCBMIIA 2015) Opening: Hidekata Hontani (Session Chair: Atsushi Imiya, Japan)	Passive and Active Electro-Optical Sensors for Aerial and Space Imaging (EO4AS 2015) (Session Chair: John Robertson, New Zealand)
	Invited Talk Hamid Gholamhosseini, Auckland University of Technology <i>Melanoma Image Processing and Analysis for Decision Support Systems</i>	Peter Reinartz. Recent Developments in Airborne Real-Time Monitoring
		Tom Segert. <i>Kent-Ridge-1, a Novel Low Cost Platform for Hyperspectral Imaging</i>
	Shereen Afifi, Hamid GholamHosseini and Roopak Sinha. <i>Hardware Acceleration of SVM-based Classifier for Melanoma Images</i>	Carsten Paproth, Thomas Säuberlich, Jürgen Wohlfeil and Anko Börner. <i>DLR - Low Level Data Processing for TET-1 – Challenges and Pitfalls</i>
		Horst Schwarzer, Andreas Eckardt and Ralf Reulke. <i>Verification of a Spectrometer Breadboard for Characterization of a Future Spaceborne Sensor</i>
1.00pm	Lunch Level 4 Atrium	
1.40pm	Session 2	Session 1
	Mathematical and Computational Methods in Biomedical Imaging and Image Analysis (MCBMIIA 2015) (Session Chair: Hidekata Hontani, Japan)	Video Surveillance (VSWS 2015) Security in Surveillance Opening: Wei Qi Yan, New Zealand (Session Chair: Feng Liu, China)
	Invited Talk Akinobu Shimizu, Tokyo University of Agriculture and Technology. <i>Segmentation of Organs with Atypical Shapes and/or Large Pathological Lesions from Medical Volumes</i>	Alireza Jolfaei, Xin-Wen Wu and Vallipuram Muthukkumarasamy. <i>A Secure Lightweight Texture Encryption Scheme</i>

		Wei Qi Yan and Feng Liu. <i>Event Analogy Based Privacy Preservation in Visual Surveillance</i>
2.20pm	Invited Talk Hiroshi Ishikawa, Waseda University <i>Higher-Order Graph Cuts and Medical Image Segmentation</i>	Chunlin Lu, Lidong Zhai, Tao Liu and Na Li. <i>Network Intrusion Detection Based on Neural Networks and D-S Evidence</i>
3.00pm	Afternoon Tea Level 4 Atrium	
3.30pm	Session 3	Session 2
	Mathematical and Computational Methods in Biomedical Imaging and Image Analysis (MCBMIIA 2015) (Session Chair: Atsushi Imiya, Japan)	Video Surveillance (VSWS 2015) Visual Analysis in Surveillance (Session Chair: Boria Bacic, New Zealand)
	Invited Talk John Rugis, University of Auckland <i>Realistic 3D Cell Modelling for FEM Simulation</i>	Jong Taek Lee, Kil-Taek Lim and Yunsu Chung. <i>Moving Shadow Detection from Background Image and Deep Learning</i>
	Erik Soltow and Bodo Rosenhahn. <i>Automatic Pose Estimation Using Contour Information from X-Ray Images</i>	Boris Bačić. <i>Extracting Player's Stance Information from 3D Motion Data: A Case Study in Tennis Groundstrokes</i>
	Mitsunori Yamada, Hidekata Hontani and Hiroshi Matsuzoe. <i>A Study on Model Selection from the q-Exponential Distribution for Constructing an Organ Point Distribution Model</i>	Md. Musfequs Salehin and Manoranjan Paul. <i>Fusion of Foreground Object, Spatial and Frequency Domain Motion Information for Video Summarization</i>
4.50pm		Workshop close
5.00pm	Workshop close	

Wednesday 25th November	
8.30am	Registration Level 4 Atrium, Engineering Building, 20 Symonds Street, Auckland
9.30am	Opening by Brendan McCane, on behalf of Program Co-Chairs
9.35am	Keynote 1: Victor Erukhimov (Itseez, CEO) <i>Embedded Realtime Computer Vision</i> (Session Chair: Thomas Braeunl)
10.35am	Brief Oral Presentations (Session Chair: Thomas Braeunl)
	Hideaki Orii, Hideaki Kawano, Noriaki Suetake and Hiroshi Maeda. <i>Color Conversion for Color Blindness Employing Multilayer Neural Network with Perceptual Model</i>
	Fay Huang, Wu Bo Hui and Huang Bo-Ru. <i>Synthesis of Oil-Style Paintings</i>
	Hsiang-Jen Chien, Haokun Geng, Chia-Yen Chen and Reinhard Klette. <i>Multi-frame Feature Integration for Multi-camera Visual Odometry</i>
	Hiroyuki Kobayashi, Shoko Imaizumi and Hitoshi Kiya. <i>A Robust Identification Scheme for JPEG XR Images with Various Compression Ratios</i>
	Hisayoshi Chugan, Tsuyoshi Fukuda and Takeshi Shakunaga. <i>Challenge to scalability of face recognition using universal eigenface</i>
	Pascal Peter, Sebastian Hoffmann, Frank Nedwed, Laurent Hoeltgen and Joachim Weickert. <i>From Optimised Inpainting with Linear PDEs towards Competitive Image Compression Codecs</i>

	Nidhi Saraswat and Hiranmay Ghosh. <i>A Study on Size Optimization of Scanned Textual Documents</i>
	Hedi Hedayati, Michael Cree and Jonathan Scott. <i>Combination of Mean Shift of Colour Signature and Optical Flow for Tracking During Foreground and Background Occlusion</i>
	Marvin Struwe, Ute Bauer-Wersing and Stephan Hasler. <i>Rendered Benchmark Data Set for Evaluation of Occlusion-handling Strategies of a Parts-based Car Detector</i>
	Wooyeol Jun, Jeongmok Ha and Hong Jeong. <i>Moving Object Detection Using Energy Model and Particle Filter for Dynamic Scene</i>
	Usman Khan and Reinhard Klette. <i>Logarithmically Improved Property Regression for Crowd Counting</i>
	Tsuyoshi Higashiguchi, Toma Shimoyama, Norimichi Ukita, Masayuki Kanbara and Norihiro Hagita. <i>Lesioned Part Identification by Classifying Entire-body Gait Motions</i>
	Yao-Jen Chang, Ching-Chieh Lin, Chao-Hsiung Hung, Jih-Sheng Tu, Chun-Lung Lin and Pei-Hsuan Tsai. <i>Variable-Length Segment Copy for Compressing Index Map of Palette Coding in Screen Content Coding</i>
	Nga Do and Keiji Yanai. <i>Automatic Action Dataset Construction from Web using Density-based Cluster Analysis and Outlier Detection</i>
11.00am	Morning Tea Level 4 Atrium <i>(Includes Poster Session 1)</i>
11.30am	Oral Session 1: Image/Video Coding and Transmission (20min. per talk) (Session Chair: Domingo Mery)
	Pallab Podder, Manoranjan Paul and Manzur Murshed. <i>Fast Coding Strategy for HEVC by Motion Features and Saliency Applied on Difference Between Successive Image Blocks</i>
	Jin Xu, Soufiene Djahel, Yuansong Qiao and Zhizhong Fu. <i>Perceptually Rate-distortion Optimized Block Compressive Sensing for Image Compression</i>
	Yao-Jen Chang, Ching-Chieh Lin, Jih-Sheng Tu, Chun-Lung Lin, Chao-Hsiung Hung and Pei-Hsuan Tsai. <i>Neighboring Sample Prediction Coding for HEVC Screen Content Coding</i>
12.30pm	Poster Session 1
1.00pm	Lunch Level 4 Atrium
2.00pm	Oral Session 2: Computational Photography and Arts (Session Chair: Fay Huang)
	Jinze Yu and Martin Constable. <i>Aesthetic Interactive Hue Manipulation for natural scene Images</i>
	Chien-Quang Le, Thanh Duc Ngo, Duy-Dinh Le, Shin'Ichi Satoh and Duc Anh Duong. <i>Cross-view Action Recognition by Projection-based Augmentation</i>
	Dongwei Liu, Haokun Geng and Reinhard Klette. <i>Star-Effect Simulation for Photography Using Self-Calibrated Stereo Vision</i>
3.00pm	Afternoon Tea Level 4 Atrium <i>(Includes Poster Session 1)</i>
3.30pm	Oral Session 3: Computer Vision and Applications (Session Chair: Atsushi Imiya)
	Jeongmok Ha and Hong Jeong. <i>A Robust Stereo Vision with Confidence Measure Based on Tree Agreement</i>
	Chun-Hau Tan, Md Baharul Islam, Lai-Kuan Wong and Kok-Lim Low. <i>Semantics-Preserving Warping for Stereoscopic Image Retargeting</i>
	Ningqing Qian, Sohaib Kiani and Bahareh Shakibajahromi.

	<i>Improved Poisson Surface with Various Passive Cues from Multiple Camera Views</i>
	Mohammed Abdessamad Bekhti and Yuichi Kobayashi. <i>Prediction of Vibrations as a Measure of Terrain Traversability in Outdoor Structured and Natural Environments</i>
	Boris Bačić. <i>Echo State Network for 3D Motion Pattern Indexing: A Case Study on Tennis Forehands</i>
5.30pm	Welcome Reception Level 4 Atrium
7.00pm	Finish

Thursday 26th November	
9.00am	Registration Level 4 Atrium, Engineering Building, 20 Symonds Street, Auckland
9.30am	Keynote 2: Hans J. (Joe) Wuensche (University of the Bundeswehr München) <i>Perception for Off-road Driving</i> (Session Chair: Xinguo Yu)
10.30am	Brief Oral Presentations (Session Chair: Xinguo Yu)
	Ahmed Ben Said and Sebti Foufou. <i>Multispectral image denoising using Optimized vector NLM Iter</i>
	Martin Bürker and Hendrik P. A. Lensch. <i>Scene-based non-uniformity correction by readout noise compensation</i>
	Ryosuke Kubota, Hakaru Tamukoh, Hideaki Kawano, Noriaki Suetake, Byungki Cha and Takashi Aso. <i>A Color Quantization Based on Vector Error Diffusion and Particle Swarm Optimization Considering Human Visibility</i>
	Yunfan Du, Fei Li and Rujie Liu. <i>Fast interactive image segmentation using bipartite graph based random walk with restart</i>
	Nirmala Ramakrishnan, Thambipillai Srikanthan, Siew Kei Lam and Gauri Tulsulkar. <i>Adaptive Window Strategy for High-Speed and Robust KLT Feature Tracker</i>
	Mohamed Moustafa. <i>Applying deep learning to classify pornographic images and videos</i>
	Hongge Ren, Weimin Liu, Fujin Li and Tao Shi. <i>A Biomimetic Adaptive Fuzzy Edge Detection Method Based on Visual Features</i>
	Matthias Ochs, Henry Bradler and Rudolf Mester. <i>Enhanced Phase Correlation for reliable and robust estimation of multiple motion distributions</i>
	Zaw Htet Aung and Panrasee Ritthipravat. <i>Robust Visual Voice Activity Detection Using Long Short-Term Memory Recurrent Neural Network</i>
	Martin Heinold and Christian J. Kähler. <i>Wing-surface reconstruction of a Lanner-falcon in free flapping flight with multiple cameras</i>
	Hiroki Morinaga, Michihiro Mikamo, Marco Visentini-Scarzanella, Hiroshi Kawasaki, Ryo Furukawa and Ryusuke Sagawa. <i>Underwater Active Oneshot Scan with Static Wave Pattern and Bundle Adjustment</i>
	Kitsuchart Pasupa, Panawee Chatkamjuncharoen, Chotiros Wuttillertdeshar and Masanori Sugimoto. <i>Using Image Features and Eye Tracking Device to Predict Human Emotions towards Abstract Images</i>
10.50am	Morning Tea Level 4 Atrium (Includes Poster Session 2)
11.30am	Oral Session 4: Video Surveillance (Session Chair: Akihiro Sugimoto)
	Takao Yoshinuma, Hideitsu Hino and Kazuhiro Fukui. <i>Personal Authentication based on 3D Configuration of Micro-Feature Points</i>

	Hyowon Ha, François Rameau and In So Kweon. <i>6-DOF Direct Homography Tracking with Extended Kalman Filter</i>
	Xuan-Phung Huynh, Yong-Guk Kim and In-Ho Choi. <i>Tracking a Human Fast and Reliably Against Occlusion and Human-crossing</i>
12.30pm	Poster Session 2
1.00pm	Lunch Level 4 Atrium
1.40pm	Oral Session 5: Biomedical Image Processing and Analysis (Session Chair: Hamid GholamHosseini)
	Nabeel Khan, Kaier Wang, Ariane Chan and Ralph Highnam. <i>Automatic BI-RADS classification of mammograms</i>
	Ryusuke Sagawa, Yusuke Yoshiyasu, Alexander Alspach, Ko Ayusawa, Katsu Yamane and Adrian Hilton. <i>Analyzing Muscle Activity and Force with Skin Shape Captured by Non-contact Visual Sensor</i>
	Norliza Mohd. Noor, Omar Mohd. Rijal, Joel Chia Ming Than, Rosminah M. Kassim and Ashari Yunus. <i>Regression as a tool to measure segmentation quality and preliminary indicator of diseased lungs</i>
	Masaki Ishihara, Yuji Matsuda, Masahiko Sugimura, Susumu Endo, Hiroaki Takebe, Takayuki Baba and Yusuke Uehara. <i>Medical Image Registration with Radial Feature Points Sampling</i>
3.10pm	Bus excursion Bus stop on Alfred Street
4.00pm	Visit to gannet colony at Muriwai
5.00pm	Travel to Settlers Country Manor for drinks and nibbles, entertainment and dinner.
9.30pm	Leave Settlers Country Manor for University of Auckland

Friday 27th November	
9.00am	Registration Level 4 Atrium, Engineering Building, 20 Symonds Street, Auckland
9.30am	Keynote 3: Richard Green (University of Canterbury) <i>Computer Vision for Precision Agriculture</i> (Session Chair: Mariano Rivera)
10.30am	Brief Oral Presentations (Session Chair: Mariano Rivera)
	Xiao Lin, Josep R. Casas and Montse Pardas. <i>Time consistent estimation of End-effectors from RGB-D data</i>
	Tommaso Cavallari and Luigi Di Stefano. <i>Volume-based Semantic Labeling with Signed Distance Functions</i>
	Marco Visentini-Scarzanella and Hiroshi Kawasaki. <i>Simultaneous Camera, Light Position and Radiant Intensity Distribution Calibration</i>
	Shubhra Aich and Chilwoo Lee. <i>A General Vocabulary Based Approach for Fine-Grained Object Recognition</i>
	Michihiro Mikamo, Yoshinori Oki, Marco Visentini-Scarzanella, Hiroshi Kawasaki, Ryo Furukawa and Ryusuke Sagawa. <i>A Triangle Mesh Reconstruction Method Taking into account Silhouette Images</i>
	Wen-Nung Lie and Chia-Che Ho. <i>All-focus Image Fusion and Depth Image Estimation based on Iterative Splitting Technique for Multi-focus Images</i>
	Huei-Yung Lin and Chung-Chieh Kao. <i>Stereo Matching for High Dynamic Range Image Pairs</i>
	Hayato Itoh, Atsushi Imiya and Tomoya Sakai. <i>Discriminative Properties in Directional Distributions for Image Pattern Recognition</i>
	Mohammad Alam, Mohammed Bennamoun, Roberto Togneri and Ferdous Sohel. <i>Deep Boltzmann Machines For i-Vector Based Audio-Visual Person Identification</i>

	Ali Khayeat, Xianfang Sun and Paul Rosin. <i>Improved DSIFT Descriptor based Copy-Rotate-Move Forgery Detection</i>
	Chih-Wei Lin and Kuan-Yin Lu. <i>Local Clustering Patterns in Polar Coordinate for Face Recognition</i>
10.50am	Brief introduction to Demos by Michael Cree
11.00am	Morning Tea Level 4 Atrium <i>(Includes Poster Session 3 & Demos)</i>
11.30am	Oral Presentation 6: Computer Vision and Pattern Recognition (Session Chair: Chil-Woo Lee)
	Dinh-Luan Nguyen, Vinh-Tiep Nguyen, Minh-Triet Tran and Atsuo Yoshitaka. <i>Deep Convolutional Neural Network in Deformable Part Models for Face Detection</i>
	Xiaohang Ren, Kai Chen, Xiaokang Yang, Yi Zhou, Jianhua He and Jun Sun. <i>A Convolutional Neural Network Based Chinese Text Detection Algorithm With Text Structure</i>
	Noriki Nishida and Hideki Nakayama. <i>Multimodal Gesture Recognition using Multi-stream Recurrent Neural Network</i>
12.30pm	Poster Session & Demos
1.00pm	Lunch Level 4 Atrium
2.00pm	Oral Session 7: Image/Video Processing and Analysis (Session Chair: Paul Rosin)
	Zexuan Ji, Jinyao Liu, Hengdong Yuan, Yubo Huang and Quansen Sun. <i>A Spatially Constrained Asymmetric Gaussian Mixture Model for Image Segmentation</i>
	Domingo Mery, Erick Svec and Marco Arias. <i>Object Recognition in Baggage Inspection Using Adaptive Sparse Representations of X-ray Images</i>
	Vijay John, Zheng Liu, Chunzhao Guo, Seiichi Mita and Kiyosumi Kidono. <i>Real-Time Lane Estimation using Convolutional Neural Networks and Extra Trees Regression</i>
	Trung-Nghia Le and Akihiro Sugimoto. <i>Contrast Based Hierarchical Spatial-Temporal Saliency for Video</i>
3.20pm	Afternoon Tea Level 4 Atrium <i>(Includes Poster Session 3 & Demos)</i>
3.40pm	Oral Session 8: Pattern Recognition (Session Chair: Leszek Chmielewski)
	Xupeng Wang, Ferdous Sohel, Mohammed Bennamoun and Hang Lei. <i>Binary Descriptor based on Heat Diffusion for Non-rigid Shape Analysis</i>
	Xiaoyin Che, Haojin Yang and Christoph Meinel. <i>Table Detection from Slide Images</i>
	Xiaohang Ren, Yi Zhou, Huiyu Wang, Kai Chen, Xiaokang Yang and Jun Sun. <i>A Novel Scene Text Detection Algorithm Based On Convolutional Neural Network</i>
	Weiqi Yan and Mohan Kankanhalli. <i>Face Search in Encrypted Domain</i>
5.00pm	Program chairs announce IAPR best paper awards, closing of conference
5.10pm	Conference close
5.15pm	Survivor's Party Neon Foyer, Engineering Building

