R@Loc 2014 REREARCH@LOCATE'14

Proceedings

Canberra, Australia April 7-9, 2014

Stephan Winter, Chris Rizos (Eds.)

Editors

Stephan Winter

Department of Infrastructure Engineering
The University of Melbourne
Parkville, VIC 3010
Australia
winter@unimelb.edu.au

Chris Rizos

School of Civil & Environmental Engineering University of New South Wales Sydney, NSW 2052 Australia c.rizos@unsw.edu.au

Preface

Locate is the new annual conference on spatial information in Australia and New Zealand, bringing together for the first time all joint forces of SSSI, SIBA, ANZLIC, OSP, LINZ, CRCSI, PSMA, ASIERA and others. Locate'14 has been the inaugural event, and from here Locate aims to become the annual meeting point of industry, government and academia in one of the fastest growing areas of IT: spatial information

Research@Locate is the academic research stream at Locate. It is organized independently by the Australasian Spatial Information Education and Research Association, ASIERA (www.asiera.org.au). Research@Locate has been designed to provide an Australasian research conference with a transparent full-paper peer review process, with carefully selected presentations and papers, and with its own annual, open-access proceedings. It aims to become the premier academic event in the Australasian region.

Already in its first year Research@Locate received 42 submissions. After a thorough peer review process, 16 of these papers were selected for the conference proceedings. This result corresponds to an acceptance rate of 38\%. In addition to the 16 accepted full papers, four papers received sufficient reviewer support to be invited for presentation only, and for three of these presentations you will find short abstracts in the proceedings.

What you will find in these proceedings is a selected sample of research in the field of spatial information. The presentations this year were organized around four themes (sessions): sourcing and access, accuracy, processing and analysis, and algorithms. A few review papers are also included.

Research@Locate is organised by the Australasian Spatial Information Education and Research Association, ASIERA (http://www.asiera.org.au). ASIERA represents a significant part of the academic segment of the spatial information industry in Australia, with a workforce of several hundred people in fundamental and applied research and innovation, with a responsibility for educating and training future generations of spatial professionals.

Acknowledgements

Research@Locate would not have happened without the support of the institutions behind Locate, SIBA and SSSI. We also wish to thank our colleagues that served on the International Program Committee, and Maria Vasardani for the production of the proceedings.

April 2014

Stephan Winter, Chair Chris Rizos, Co-Chairs

Program Committee

Program Committee Chair 2014

Stephan Winter, The University of Melbourne, Australia (chair) Chris Rizos, The University of New South Wales, Australia (co-chair)

Program Committee 2014

Sharolyn Anderson, University of South Australia, Australia

Jagannath Aryal, University of Tasmania, Australia

David Bruce, University of South Australia, Australia

Nick Chrisman, RMIT University, Australia

Paul Corcoran, University of South Australia, Australia

Matt Duckham, The University of Melbourne, Australia

Ahmed El-Mowafy, Curtin University, Australia

Ori Gudes, Curtin University, Australia

Eric Guilbert, The Hong Kong Polytechnic University, Hong Kong

John Hayes, Queensland University of Technology, Australia

Petra Helmholz, Curtin University, Australia

Mohsen Kalantari, The University of Melbourne, Australia

Allison Kealy, The University of Melbourne, Australia

Lars Kulik, The University of Melbourne, Australia

Ki-Joune Li, Pusan National University, South Korea

Samsung Lim, University of New South Wales, Australia

Bharat Lohani, IIT Kanpur, India

Kim Lowell, Cooperative Research Centre for Spatial Information, Australia

Feng Lu, State Key Laboratory of Resources and Environmental Information

Systems, China

Nandakumaran Nadarajah, Curtin University, Australia

Gerhard Navratil, Technical University Vienna, Austria

Kevin McDougall, University of South Queensland, Australia

Antoni Moore, University of Otago, New Zealand

Jon Osborne, University of Tasmania, Australia

Abbas Rajabifard, The University of Melbourne, Australia

Femke Reitsma, University of Canterbury, New Zealand

Chris Rizos, The University of New South Wales, Australia

Wenzhong Shi, The Hong Kong Polytechnic University, Hong Kong

Pascal Sirguey, University of Otago, New Zealand

Egemen Tanin, The University of Melbourne, Australia

Martin Tomko, The University of Melbourne, Australia

Xiaohua Tong, Tongji University, China

Bert Veenendaal, Curtin University, Australia

Jinling Wang, The University of New South Wales, Australia

Geoff West, Curtin University, Australia

Cecilia Xia, Curtin University, Australia

Bisheng Yang, Wuhan University, China

Zhangcai Yin, Wuhan University of Technology, China

Steering Committee

Research@Locate is backed by the current members of ASIERA:

David Bruce, University of South Australia, Australia

Nick Chrisman, RMIT University, Australia

John Hayes, Queensland University of Technology, Australia

Kevin McDougall, University of South Queensland, Australia

Xiaoli Deng, University of Newcastle, Australia

Jon Osborne, University of Tasmania, Australia

Femke Reitsma, University of Canterbury, New Zealand

Chris Rizos, The University of New South Wales, Australia

V

Pascal Sirguey, University of Otago, New Zealand

Stephan Winter, The University of Melbourne, Australia

Bert Veenendaal, Curtin University, Australia

R@Loc 2014

MEMBERS

The University of Melbourne
The University of New South Wales
RMIT University
Curtin University of Technology
The University of Newcastle
University of Tasmania
University of Southern Queensland
University of South Australia
Queensland University of Technology
University of Canterbury
University of Otago



Table of Contents

Sourcing and Access
Identifying Salient Topics for Personalized Place Similarity
Urban Data Hubs Supporting Smart Cities
Developing a Usability Framework to Support Online Rapid Urban Information Discovery and Interrogation
Ontology driven VGI Filtering to Empower Next Generation SDIs for Disaster Management (abstract)
Bridging the Gap between the United Nations World Food Programme Crisis Mapping Operations and Crowdsourcing Technology
Accuracy
Dynamic Datum Transformations in Australia and New Zealand
Accuracy of the Canterbury Earthquake Deformation Models (text not included) Nic Donnelly, Chris Crook, Matt Amos, Don Grant, John Ritchie, Craig Roberts
Managing the Dynamics of the New Zealand Spatial Cadastre
Options for Modernising the Geocentric Datum of Australia
Vertical Accuracy Assessment of LiDAR Ground Points using Minimum Distance Approach
Processing and Analysis
EDMCAL: Processing EDM Calibrations in NSW
The new Digital Orthometric Elevation Model of Kilimanjaro
Emerging Data Challenges for Next-Generation Spatial Data Infrastructure.118-129 Benjamin Adams, Mark Gahegan
An Image Engineering Approach to Analysing Mobile Mapping Data130-14 <i>Michael Borck, Geoff West, Tele Tan</i>
A Vector Agent Approach to Extract the Boundaries of Real-World Phenomena from Satellite Images (abstract)

vii R@Loc 2014

Algorithms and Review

Estimating Urban Ultrafine Particle Distributions with Gaussian Process	
Models	53
Jason Jingshi Li, Arnaud Jutzeler, Boi Faltings	
A Novel Algorithm for Road Extraction from Airborne Lidar Data	63
Intersection Delay Estimation from Floating Car Data via Stacked Generalization	: A
Case Study on Beijing's Road Networks (abstract)	65
Integrated Land Evaluation: Story of a Track Not Taken	73
The Geography of World War I Cartoons: Gallipoli	85