

## Detailed GeoComputation Programme

<https://auckland.figshare.com/GeoComputation2019>

<b>Wednesday 18<sup>th</sup> September</b>	<b>Venue: Queenstown Memorial Centre (see map)</b>	
<b>0900 - 1700</b>	<b><i>New Zealand Geospatial Research Conference</i></b>	<b><i>Spatial Data Science Workshop with PySal (Serge Rey)</i></b>
<b>1800 -</b>	<b><i>GeoComputation Icebreaker Reception (sponsored by Geospatial Research Institute (GRI) and Spatial Industries Business Association (SIBA))</i></b>	

<b>Thursday 19<sup>th</sup> September</b>	<b>Venue: Rydges Lakeland Hotel (see map)</b>		
<b>0915 - 0930</b>	<i>Welcome to the Conference and Housekeeping (Queenstown Room)</i>		
<b>0930 - 1030</b>	<b><i>Keynote 1: Janet Franklin (Geospatial data for forecasting global change impacts on ecosystems) (sponsored by Koordinates)</i></b> <i>(Queenstown Room, Chair: Ben Adams)</i>		
<b>1030 - 1100</b>	Morning break		
<b>1100 - 1200</b>	<i>Parallel Session 1 Stream 1:</i> <b><i>Cyber GIS</i></b> <i>(Queenstown Room, Chair: Janet Franklin)</i>	<i>Parallel Session 1 Stream 2:</i> <b><i>Surfaces and Hydrology</i></b> <i>(Clancy's Room, Chair: Yichun Xie)</i>	<i>Parallel Session 1 Stream 3:</i> <b><i>Geography in the Text</i></b> <i>(Wakatipu Room, Chair: Rachel Franklin)</i>
1100-1120	<b>Space-Time is the Key: For Expressing Spatial-Temporal Computing.</b> <i>Eric Shook</i>	<b>The Role of Theory and Geocomputation in Describing and Simulating Landscape Performance.</b> <i>John Wilson</i>	<b>He Tatai Whenua: Automated Extraction of Landscape Terms and their Meanings in New Zealand Maori.</b> <i>Kristin Stock, Hone W. Morris, Margaret Forster, Rex Paraku and Ekaterina Egorova</i>
1120-1140	<b>High Performance Geocomputation for Assessing Human Dynamics at Planet Scale.</b> <i>Budhendra Bhaduri, Dalton Lunga, Hsiu-Han Lexie Yang, Jacob McKee, Melanie Laverdiere, Kuldeep Kurte and Jibonananda Sanyal</i>	<b>A Bivariate Thin-Plate Adaptive Smoothing Spline (BTPASS) to reduce noise in photogrammetric digital surface models.</b> <i>Pascal Sirguey</i>	<b>A New Data Model for Depicting Traditional Ecological Knowledge in GIS via Motifs, Folk Thesauri and Narratives.</b> <i>Kierin Mackenzie, Dylan Kirk, Christophe Claramunt and Femke Reitsma</i>
1140-1200	<b>Geocomputational infrastructure for population-environment data.</b> <i>Steven Manson, Tracy Kugler, David Van Riper, Jonathan Schroeder and Steven Ruggles</i>	<b>Tracing and visualisation of contributing water sources in a model of flood inundation.</b> <i>Matthew Wilson and Tom Coulthard</i>	<b>Mapping Languages and Demographics with Georeferenced Corpora.</b> <i>Jonathan Dunn and Benjamin Adams</i>

<b>Thursday 19<sup>th</sup> September</b>	<b>Venue: Rydges Lakeland Hotel (see map)</b>	
<b>1200 - 1230</b>	<i>Poster Session (Common Area, Chair: Lars Brabyn)</i>	
	<b>Extracting Area and Period of Influence of New Rail Service on Real Estate Market Using Fused-MCP.</b> <i>Koichiro Den and Ryo Inoue</i>	
	<b>Short-term Traffic Volume Prediction at a Signalised Intersection Using LSTM.</b> <i>Ryo Masuda and Ryo Inoue</i>	
	<b>Accuracy of Pléiades Photogrammetric Products Under Direct and Controlled Georeferencing.</b> <i>Clare Lewis, Pascal Sirguy and Simon Cox</i>	
	<b>Modelling ice shelf flow over isolated bathymetric rises on the seafloor.</b> <i>Holly Still and Christina Hulbe</i>	
	<b>Exploring the Influence of Source and Scale of Phenological Model Inputs at Continental Scale.</b> <i>Hamed Mehdi Poor, Raul Zurita-Milla, Emma Izquierdo-Verdiguier and Julio L. Betancourt</i>	
	<b>Automated large scale hazard indication mapping for snow avalanches.</b> <i>Yves Buehler, Daniel von Rickenbach, Marc Christen, Stefan Margreth, Andreas Stoffel, Lukas Stoffel and Roderick Kühne</i>	
<b>1230 - 1400</b>	Lunch	
<b>1400 - 1520</b>	<i>Parallel Session 2 Stream 1: <b>Open Geospatial and VGI</b> (Queenstown Room, Chair: David Medyckyj-Scott)</i>	<i>Parallel Session 2 Stream 2: <b>Geosimulation and Agents</b> (Clancy's Room, Chair: Shawn Laffan)</i>
1400-1420	<b>Longitudinal analysis of multilateral spatial interactions.</b> <i>May Yuan and Wei Luo</i>	<b>Geosimulating hazard warning triggers: geometry, dynamics, and timing.</b> <i>Thomas Cova</i>
1420-1440	<b>Modeling Building Use and Population Distribution Opportunity Using Open Geosocial Data in Urban Areas.</b> <i>Kevin Sparks, Kelly Sims, Gautam Thakur, Marie Urban and Robert Stewart</i>	<b>Application of Vector Agents to Weed detection from UAV imagery.</b> <i>Kambiz Borna, Tony Moore, Barbara Bollard and Akbar Ghobakhlou</i>
1440-1500	<b>Streaming Geospatial Data into Virtual Reality.</b> <i>Alexander Herzig</i>	<b>Detecting, Modeling and Predicting Vertical Urban Growth: A Systematic Review.</b> <i>Yuanyuan Huang, Yan Liu and Scott Lieske</i>
1500-1520	<b>Reproducible Geocomputation: an open or shut case?</b> <i>Mark Gahegan</i>	<b>A spatial simulation model to explore the potential impact of gene drives as a control on invasive wasps.</b> <i>David O'Sullivan, George Perry and Phil Lester</i>

<b>Thursday 19<sup>th</sup> September</b>	<b>Venue: Rydges Lakeland Hotel (see map)</b>	
<b>1520 - 1600</b>	Afternoon break	
<b>1600 - 1700</b>	<i>Parallel Session 3 Stream 1: <b>Urban and Social Analysis</b> (Queenstown Room, Chair: Tom Cova)</i>	<i>Parallel Session 3 Stream 2: <b>Uncertainty</b> (Clancy's Room, Chair: Steven Manson)</i>
1600-1620	<b>Social Spatial: A Qualitative GIS for Social Big Data Investigations.</b> <i>Michael Martin</i>	<b>Using local maps of spatial accuracy for benthic habitat models.</b> <i>Jennifer Miller, Marji Puotinen and Ben Radford</i>
1620-1640	<b>Is Servicing Commuters the Goal of the Public Transport System?</b> <i>Itzhak Benenson, Maria Marinov and Eran Ben Elia</i>	<b>Computing Uncertainty of Natural Neighbour Interpolation.</b> <i>Thomas Etherington</i>
1640-1700	<b>Learnings from developing and implementing geospatial urban planning decision-support tools in Aotearoa New Zealand.</b> <i>Mirjam Schindler, Rita Dionisio, Ines Falcao and Simon Kingham</i>	<b>Quality of Geo Web Services – Elements, Measures, Procedures.</b> <i>Wolfgang Reinhardt</i>
<b>1700</b>	Close (free night to explore Queenstown)	

<b>Friday 20<sup>th</sup> September</b>	<b>Venue: Rydges Lakeland Hotel</b>		
<b>0920 - 0930</b>	Housekeeping		
<b>0930 - 1030</b>	<b>Keynote 2: Mark Gahegan (Our GIS is (still) too small)</b> <i>(Queenstown Room, Chair: Tony Moore)</i>		
<b>1030 - 1110</b>	Morning break		
<b>1110 - 1230</b>	<i>Parallel (Themed) Session 4 Stream 1: <b>Novel Spatiotemporal Paradigms 1</b> (Queenstown Room, Chairs: Raul Zurita-Milla and Ellen-Wien Augustijn-Beckers)</i>	<i>Parallel Session 4 Stream 2: <b>Geostatistics</b> (Clancy's Room, Chair: Mark Gahegan)</i>	<i>Parallel Session 4 Stream 3: <b>Spatial Data Mining</b> (Wakatipu Room, Chair: Alan Murray)</i>
1110-1130	<b>Teaching Agent-Based Modelling and Machine Learning in an integrated way.</b> <i>Ellen-Wien Augustijn-Beckers, Rania Kounadi, Tatjana Kuznecova and Raul Zurita-Milla</i>	<b>Scalable geographically weighted regression for big data.</b> <i>Daisuke Murakami, Narumasa Tsutsumida, Takahiro Yoshida, Tomoki Nakaya and Binbin Lu</i>	<b>A Computational Framework for Monitoring Black-Odoriferous Water from Remote Sensed Data and Data Mining Techniques.</b> <i>Yichun Xie, Ji Yang, Alicia Zhou, Chenghu Zhou and Yong Li</i>
1130-1150	<b>Scientific workflows for discovering appropriate parameter settings in environmental modelling.</b> <i>Nenad Radosevic, Matt Duckham and Gang-Jun Liu</i>	<b>Geographically Weighted Non-negative Principal Component Analysis for Exploring Spatial Variation in Multidimensional Composite Index.</b> <i>Narumasa Tsutsumida, Daisuke Murakami, Takahiro Yoshida, Tomoki Nakaya, Binbin Lu and Paul Harris</i>	<b>Network-constrained Bivariate Clustering Method for Detecting Urban Black Holes and Volcanoes.</b> <i>Zhihui Wu and Qiliang Liu</i>
1150-1210	<b>Spatially detail urban carbon mapping: Integration of top-down and bottom-up approaches.</b> <i>Takahiro Yoshida, Yoshiki Yamagata and Daisuke Murakami</i>	<b>Kernel Density Analysis of Active Transport to School Patterns in Dunedin Adolescents.</b> <i>Long Chen, Antoni Moore and Sandra Mandic</i>	<b>How does socio-economic and demographic dissimilarity determine physical and virtual segregation?</b> <i>Michael Dorman, Tal Svoray and Itai Kloog</i>
1210-1230	<b>Enabling spaces by GeoComputation.</b> <i>Luke Bergmann and David O'Sullivan</i>	<b>Integration of precision farming data and spatial statistical modelling to interpret field-scale maize grain yield variability in New Zealand.</b> <i>Guopeng Jiang, Miles Grafton, Diane Pearson, Mike Bretherton &amp; Allister Holmes</i>	<b>Using Machine Learning Methods to Identify and Classify the Regions and Projections of Online Maps.</b> <i>Jialin Li and Ningchuan Xiao</i>

<b>Friday 20<sup>th</sup> September</b>	<b>Venue: Rydges Lakeland Hotel</b>	
<b>1230 - 1400</b>	Lunch	
<b>1400 - 1520</b>	<i>Parallel (Themed) Session 5 Stream 1: <b>Novel Spatiotemporal Paradigms 2</b> (Queenstown Room, Chairs: Ellen-Wien Augustijn-Beckers and Raul Zurita-Milla)</i>	<i>Parallel Session 5 Stream 2: <b>Applied Spatial Analysis</b> (Clancy's Room, Chair: May Yuan)</i>
1400-1420	<b>Combining longitudinal data analysis with networks to examine spatio-temporal variation.</b> <i>Sarah Gadd, Peter Tennant, Mark S Gilthorpe and Alison Heppenstall</i>	<b>Geocomputation and Spatial Analytics.</b> <i>Alan Murray</i>
1420-1440	<b>Our GIS is a Game Engine: Bringing Unity to Spatial Simulation of Rockfalls.</b> <i>Rob Harrap, Jean Hutchinson, Zac Sala and Matt Ondercin</i>	<b>Areal interpolation of population in the USA using a combination of national parcel data and a national building outline layer.</b> <i>Eric Weber, Jessica Moehl and Amy Rose</i>
1440-1500	<b>The integration of vector-based cellular automata and partitioned rules for simulation of land use change.</b> <i>Yi Lu and Shawn Laffan</i>	<b>The importance of managing co-variate and distance biases in point-pattern clustering.</b> <i>Peter Whigham, Brandon de Graaf, Rashi Srivastava and Paul Glue</i>
1500-1520	<b>Coupling Machine Learning and Cellular Automata-Markov Chain to Model Urban Expansion in a Fast Developing Area: A Case Study of Liangjiang New District of Chongqing, China.</b> <i>Tingting Xu, Jay Gao and Giovanni Coco</i>	
<b>1520 - 1600</b>	Afternoon break	
<b>1600 - 1700</b>	<b>Keynote 3: Rachel Franklin (Inequality and the Smart City) (sponsored by University of Otago Division of Sciences / School of Surveying)</b> <i>(Queenstown Room, Chair: Matt Wilson)</i>	
<b>1700</b>	Close	
<b>1900 -</b>	<b>Conference Dinner @ Prime Restaurant (see map)</b>	

<b>Saturday 21<sup>st</sup> September</b>	<b>Venue: Rydges Lakeland Hotel</b>		
<b>0920 - 0930</b>	Housekeeping		
<b>0930 - 1030</b>	<b>Keynote 4: <i>Shawn Laffan (An accessible GeoComputation)</i></b> <i>(Queenstown Room, Chair: Peter Whigham)</i>		
<b>1030 - 1110</b>	Morning break		
<b>1110 - 1230</b>	<i>Parallel Session 6 Stream 1:</i> <b>Computational Movement Analysis 1</b> <i>(Queenstown Room, Chair: Eric Shook)</i>	<i>Parallel Session 6 Stream 2:</i> <b>AI and machine learning</b> <i>(Clancy's Room, Chair: Itzhak Benenson)</i>	<i>Parallel Session 6 Stream 3:</i> <b>Qualitative Spatial Reasoning</b> <i>(Wakatipu Room, Chair: Michael Martin)</i>
1110-1130	<b>Using movement parameters to infer dynamic interactions between moving object pairs.</b> <i>Jennifer Miller</i>	<b>Using mixed-effect random forest models to capture spatial patterns: a case study on urban crime.</b> <i>Raul Zurita-Milla, Afnindar Fakhurrozi and Ourania Kounadi</i>	<b>Mining the Semantic Similarity of Spatial Relations from Text.</b> <i>Niloofar Aflaki, Christopher B. Jones and Kristin Stock</i>
1130-1150	<b>Activity Change Index (ACI) – new aspects of indoor mobility identified from GPS and lifelogging data.</b> <i>Katarzyna Sila-Nowicka and Piyushimita Thakuriah</i>	<b>Experiential modelling of urban street: a combining approach with neural image assessment and street experiment.</b> <i>Yoshiki Yamagata, Takahiro Yoshida, Haruna Matsui, Perry Yang and Chen Helen</i>	<b>A modification of RCC*-9.</b> <i>Azadeh Izadi, Torsten Hahmann, Hans W. Guesgen and Kristin Stock</i>
1150-1210	<b>Understanding population movements through volunteered geographic information and novel indicators: The experience of Rakiura, Stewart Island, New Zealand.</b> <i>Mathew Darling, Benjamin Adams, Caroline Orchiston, Thomas Wilson and Brendon Bradley</i>	<b>Learning Digital Geographies through a Graph-Based Semi-supervised Approach.</b> <i>Pengyuan Liu and Stefano De Sabbata</i>	<b>Extracting Geometric Representations Of Trajectories Using Topological Data Analysis.</b> <i>Thomas Edwards, Christopher Jones and Padraig Corcoran</i>
1210-1230	<b>Visualising Data From Dolphin Observations Through Adaptively Ordered Space-time Matrices.</b> <i>Judy Rodda and Antoni Moore</i>	<b>The Effectiveness of Sentiment Analysis for Detecting Fine-grained Service Quality.</b> <i>Mohammad Masoud Rahimi, Elham Naghizade, Stephan Winter and Mark Stevenson</i>	

<b>Saturday 21<sup>st</sup> September</b>	<b>Venue: Rydges Lakeland Hotel</b>	
<b>1230 - 1400</b>	Lunch	
<b>1400 - 1500</b>	<i>Parallel Session 7 Stream 1: <b>Computational Movement Analysis 2</b> (Queenstown Room, Chair: Katarzyna Sila-Nowicka)</i>	<i>Parallel Session 7 Stream 2: <b>GeoComputation and Remote Sensing</b> (Clancy's Room, Chair: Pascal Sirguy)</i>
1400-1420	<b>Using crowdsourced data to map bicycling behaviour.</b> <i>Vanessa Brum-Bastos, Colin Ferster and Trisalyn Nelson</i>	<b>Evolution of micrometeorological observations: Instantaneous spatial and temporal surface wind velocity from thermal image processing.</b> <i>Benjamin Schumacher, Marwan Katurji, Ivana Stiperski, Christina Dunker and Jiawei Zhang</i>
1420-1440	<b>From generalisation to segmentation: Douglas-Peucker-Ramer and movement data.</b> <i>Aubrey Miller, Antoni Moore and Greg Leonard</i>	<b>Joint use of space-borne SAR, optical imagery and air-borne LiDAR for improved mapping of forest structural types in New Zealand.</b> <i>Jan Zörner, John R. Dymond, James D. Shepherd, Susan K. Wiser, David Pairman and Marmar Sabetizade</i>
1440-1500	<b>Comparing the costs of pedestrian wayfinding heuristics across different urban network morphologies.</b> <i>Debjit Bhowmick, Stephan Winter and Mark Stevenson</i>	<b>Calculating the surface melt rate of Antarctic glaciers using satellite derived temperatures.</b> <i>Lars Brabyn and Glen Stichbury</i>
<b>1500 - 1530</b>	Afternoon break	
<b>1530 - 1630</b>	<i>Parallel Session 8 Stream 1: <b>Computational Movement Analysis 3</b> (Queenstown Room, Chair: Jennifer Miller)</i>	<i>Parallel Session 8 Stream 2: <b>Environmental Modelling</b> (Clancy's Room, Chair: Rob Harrap)</i>
1530-1550	<b>Analysis of an Ad-hoc Platoon Formation and Dissolution Strategy on a Multi-lane Highway.</b> <i>Santa Maiti, Stephan Winter, Lars Kulik and Sudeshna Sarkar</i>	<b>Automated glacier terminus detection in time series of satellite imagery using the 2D Wavelet Transform Modulus Maxima (WTMM) segmentation method.</b> <i>Julia Liu, Ellyn Enderlin and Andre Khalil</i>
1550-1610	<b>Towards Intervention and Counterfactual modelling in spatial agents: A simulation of constrained movement at the Observational level.</b> <i>Saeed Rahimi, Antoni B. Moore and Peter A. Whigham</i>	<b>Coupling an XFEM code for linear elastic fracture propagation to a viscous flow model.</b> <i>Martin Forbes and Christina Hulbe</i>
1610-1630	<b>Ant Colony Optimization-based Spatial Scan Statistic for Detecting Statistically Significant Spatial Communities in Vehicle Movements.</b> <i>Sancheng Zhu, Qiliang Liu and Zhihui Wu</i>	
<b>1630 - 1640</b>	Conference close	