



## Accepted Papers

The following contributions have been accepted to the programme of GIScience2018, in their respective categories:

## Full Papers

**Acceptance rate:** 17/46, 37%

- David Amores, Maria Vasardani and Egemen Tanin: *Early Detection of Herding Behaviour during Emergency Evacuations*
- Alberto Belussi, Damiano Carra, Sara Migliorini, Mauro Negri and Giuseppe Pelagatti: *What Makes Spatial Data Big? A Discussion on How to Partition Spatial Data*
- Paolo Fogliaroni, Dominik Bucher, Nikola Jankovic and Ioannis Giannopoulos: *Intersections of Our World*
- Francis Harvey: *Considerations of graphical proximity and geographical nearness*
- Yingjie Hu and Krzysztof Janowicz: *An empirical study on the names of points of interest and their changes with geographic distance*
- Myeong-Hun Jeong, Junjun Yin and Shaowen Wang: *Outliers Detection and Comparison of Origin-Destination Flows with Data Depth*
- Markus Kattenbeck, Eva Nuhn and Sabine Timpf: *Is salience robust? A heterogeneity analysis of survey ratings*
- Filip Krumpal: *Labeling Points of Interest in Dynamic Maps using Disk Labels*
- Sara Lafia, Andrew Turner and Werner Kuhn: *Improving Discovery of Open Civic Data*
- Yan Li and Shashi Shekhar: *Local Co-location Pattern Detection: A Summary of Results*

- Yann Meneroux, Hiroshi Kanasugi, Guillaume Saint Pierre, Arnaud Le Guilcher, Sebastien Mustiere, Ryosuke Shibasaki and Yugo Kato: *Detection and Localization of Traffic Signals with GPS Floating Car Data and Random Forest*
- Alan Murray, Xin Feng and Ali Shokoufandeh: *Heterogeneous Skeleton for Summarizing Continuously Distributed Demand in a Region*
- Benjamin Niedermann, Johannes Oehrlein, Sven Lautenbach and Jan-Henrik Haurert: *A network flow model for the analysis of green spaces in urban areas*
- Rudra Ranajee Saha, Tanzima Hashem, Tasmia Shahriar and Lars Kulik: *Continuous Obstructed Detour Queries*
- Joram Schito, Ulrike Wissen Hayek and Martin Raubal: *Enhanced multi criteria decision analysis for planning power transmission lines*
- Ashwin Shashidharan, Ranga Raju Vatsavai, Derek Berkel and Ross Meentemeyer: *FUTURES-AMR: Towards an Adaptive Mesh Refinement Framework for Geosimulations*
- Bo Yan, Krzysztof Janowicz, Gengchen Mai and Rui Zhu: *xNet+SC: Classifying Places Based on Images by Incorporating Spatial Contexts*

## Short Papers

- Benjamin Adams and Martin Tomko: *A critical look at cryptogovernance of the real world: Challenges for spatial representation and uncertainty on the blockchain*
- Ali Afghantoloe and Mir Abolfazl Mostafavi: *Towards optimal deployment of a sensor network in a 3D indoor environment for the mobility of people with disabilities*
- Niloofar Aflaki, Shaun Russell and Kristin Stock: *Challenges in Creating an Annotated Set of Geospatial Natural Language Descriptions*
- Abdullah Alattas, Sisi Zlatanova, Peter van Oosterom and Ki-Joune Li: *Improved and more complete conceptual model for the revision of IndoorGML*
- Devanjan Bhattacharya and Marco Painho: *Design for Geospatially Enabled Climate Modeling and Alert System (CLIMSYS): A Position Paper*
- Raphaël Ceré, Mattia Egloff and François Bavaud: *Geographical exploration and analysis extended to textual content*
- Changlock Choi, Yelin Kim, Youngho Lee and Seong-Yun Hong: *Evaluating efficiency of spatial analysis in cloud computing platforms*
- Rahul Deb Das and Ross Purves: *Towards the Usefulness of User-Generated Contents to Understand Traffic Events*

- Paolo Fogliaroni, Marvin Mc Cutchan, Gerhard Navratil and Ioannis Giannopoulos: *Unfolding Urban Structures: Towards Route Prediction and Automated City Modeling*
- Martin Geilhausen and Patrick Laube: *Deconstructed and inverted multi-criteria evaluation for on-the-fly scenario development and decision-making*
- Amin Gharebaghi and Mir Abolfazl Mostafavi: *Space-time representation of accessible areas for wheelchair users in urban areas*
- Jean-François Girres, Martine Assenat, Robin Ralite and Ester-Inès Ribo-Delissey: *Spatial periodicity analysis of urban elements. Application to the ancient city of Amida*
- Fabian Göbel, Peter Kiefer, Ioannis Giannopoulos and Martin Raubal: *Gaze Sequences and Map Task Complexity*
- Jung-Hong Hong and Jing-Cen Yang: *Facilitating the Interoperable Use of Cross-Domain Statistical Data Based on Standardized Identifiers*
- Ryo Inoue, Rihoko Ishiyama and Ayako Sugiura: *Identification of Geographical Segmentation of the Rental Apartment Market in the Tokyo Metropolitan Area*
- Hanme Jang, Jong Hyeon Yang and Kiyun Yu: *Automatic wall detection and building topology and property of 2D floor plan*
- Shelan Jeawak, Christopher Jones and Steven Schockaert: *Mapping Wildlife Species Distribution With Social Media: Augmenting Text Classification With Species Names*
- Jincheng Jiang and Shuai He: *Multimodal-Transport Collaborative Evacuation Strategies for Urban Serious Emergency Incidents Based on Multi-Sources Spatiotemporal Data*
- Donglai Jiao and Jintao Sun: *A new map symbol design method for real-time visualization of geo-sensor data*
- Irene Johannsen, Sara Irina Fabrikant and Mariele Evers: *How do texture and color communicate uncertainty in climate change map displays?*
- Chaogui Kang and Yu Liu: *Understanding Urban Functionality from Human Activities: A Proposed Analytical Framework*
- Seongyong Kim, Seula Park and Kiyun Yu: *Application of Style Transfer in the Vectorization Process of Floorplans*
- Yan Li, Yiqun Chen, Abbas Rajabifard, Kourosh Khoshelham and Mitko Aleksandrov: *Estimating building age from Google Street View images using deep learning*
- Wei Lu and Tinghua Ai: *Center Point of Simple Area Feature Based on Triangulation Skeleton Graph*

- Yi Lu and Shawn Laffan: *The use of Particle Swarm Optimization for a vector Cellular Automata model of land use change*
- Karlo Lugomer and Paul Longley: *Towards comprehensive temporal classification of footfall patterns in the cities of Great Britain*
- Alan M. MacEachren, Richard Caneba, Hanzhou Chen, Harrison Cole, Emily Domanico, Nicholas Triozzi, Fangcao Xu and Liping Yang: *Is This Statement About A Place? Comparing two perspectives*
- Marvin Mc Cutchan and Ioannis Giannopoulos: *Geospatial Semantics for Spatial Prediction*
- Grant McKenzie: *Docked vs. Dockless Bike-sharing: Contrasting spatiotemporal patterns*
- Grant McKenzie and Krzysztof Janowicz: *OpenPOI: An Open Place of Interest Platform*
- Aline Menin, Sonia Chardonnel, Paule-Annick Davoine and Luciana Nedel: *Exploring Shifting Densities through a Movement-based Cartographic Interface*
- Kyunghyun Min, Jungseok Lee, Kiyun Yu and Jiyoung Kim: *Geotagging Location Information Extracted from Unstructured Data*
- Franz-Benjamin Mocnik: *Linked Open Data Vocabularies for Semantically Annotated Repositories of Data Quality Measures*
- April Morton, Jesse Piburn and Nicholas Nagle: *Need A Boost? A Comparison of Traditional Commuting Models with the XGBoost Model for Predicting Commuting Flows*
- Kamaldeep Singh Oberoi, Géraldine Del Mondo, Yohan Dupuis and Pascal Vasseur: *Modeling Road Traffic Takes Time*
- Bill Palmer, Alice Gaby, Jonathon Lum and Jonathan Schlossberg: *Diversity in spatial language within communities: the interplay of culture, language and landscape in representations of space*
- Emmanuel Papadakis, Andreas Petutschnig and Thomas Blaschke: *Flexible Patterns of Place for Function-based Search of Space*
- Yi Qiang, Barbara Buttenfield, Nina Lam and Nico Van de Weghe: *Novel Models for Multi-Scale Spatial and Temporal Analyses*
- Alina Ristea, Ourania Kounadi and Michael Leitner: *Geosocial media data as predictors in a GWR application to forecast crime hotspots*
- Dara Seidl and Piotr Jankowski: *Who masks? Correlates of individual location-masking behavior in an online survey*

- Kelly Sims, Gautam S. Thakur, Kevin Sparks, Marie Urban, Amy Rose and Robert Stewart: *Dynamically-Spaced Geo-Grid Segmentation for Weighted Point Sampling on a Polygon Map Layer*
- Gaurav Sinha, Samntha Arundel, Torsten Hahmann, E. Lynn Usery, Kathleen Stewart and David Mark: *The Landform Reference Ontology (LFRO): A foundation for exploring linguistic and geospa-tial conceptualization of landforms*
- Martin Sudmanns, Stefan Lang, Dirk Tiede, Christian Werner, Hannah Augustin and Andrea Baraldi: *Abstract data types for spatio-temporal remote sensing analysis*
- Quy Thy Truong, Guillaume Touya and Cyril de Runz: *Towards Vandalism Detection in OpenStreetMap Through a Data Driven Approach*
- Xuebin Wei and Xiaobai Yao: *A Conceptual Framework for Representation and Analysis of Location-based Social Media Activities*
- Rene Westerholt, Mathias Gröbe, Alexander Zipf and Dirk Burghardt: *Towards the Statistical Analysis and Visualization of Places*
- Lionov Wiratma, Maarten Löffler and Frank Staals: *An experimental comparison of two definitions for groups of moving entities*
- Jibo Xie: *Extracting geospatial information from social media data for hazard mitigation, Typhoon Hato as case study*
- Jin Xing and Renee Sieber: *Propagation of Uncertainty for Volunteered Geographic Information in Machine Learning*
- Chunxue Xu and Bo Zhao: *Satellite image spoofing: Creating remote sensing dataset with Generative Adversarial Networks*
- Kayoko Yamamoto and Ximing Li: *Proposal of Safety Evaluation Method of Evacuation Routes in Urban Areas in Case of Earthquake Disasters Using Ant Colony Optimization Algorithm and Geographic Information Systems*
- Xiongfeng Yan and Tinghua Ai: *Analysis of Irregular Spatial Data with Machine Learning: Classification of Building Patterns with a Graph Convolution Neural Network*
- Chi-Feng Yen, Ming-Hsiang Tsou and Chris Allen: *Assessing Neighborhood Conditions using Geographic Object-Based Image Analysis and Spatial Analysis*
- Madiha Yousaf and Diedrich Wolter: *Spatial Information Extraction from Text Using Spatio-Ontological Reasoning*
- Tian Zhao, Chuanrong Zhang and Zhijie Zhang: *Scalable Spatial Join for WFS Clients*
- Di Zhu and Yu Liu: *Modelling Spatial Patterns using Graph Convolutional Networks*

## Extended Abstracts (not published, oral presentations)

- Manuel Baer and Ross Purves: *StarBorn: Making in-situ land cover validation fun with a location based game*
- Lars Brabyn: *Modelling Human Habitat*
- Hanzhou Chen and Xi Liu: *The Taste of Gentrification: Sense of Place in Gentrifying Neighborhoods Using Yelp Data*
- Wen Dai, Xin Yang, Jingwei Li, Yihan Cheng and Guoan Tang: *Effects of DEM resolution on gully mapping in loess hilly areas*
- Laure De Cock, Kristien Ooms, Nico Van de Weghe and Philippe De Maeyer: *Adapting indoor route guidance to space complexity*
- John Duncan, Bryan Boruff, Alex Saunders and Chayn Sun: *Using 'big' remote sensing data and spatial analysis to enhance understanding of the relationship between urban vegetation structure and temperature*
- Ekaterina Egorova: *You Know a Mountain by a Company It Keeps: A Corpus-driven Study of Landscape Terms' Semantics*
- Carolyn Fish: *Evaluating emotional responses to framing of climate change maps with facial emotion recognition technology*
- Mark Gahegan: *Prospects for building process models and explanations entirely from geospatial data*
- Jing Gao and Brian O'Neill: *A Data-Science Approach to Simulating Spatiotemporal Built-Up Land Patterns for Climate Change Impact Assessment*
- Daria Hollenstein, Martin Hess, Susanne Bleisch and Denis Jordan: *Logistic regression analysis of the relation of roundabout parameters to bicycle accident occurrence*
- Péter Jeszenszky, Sandro Bachmann and Peter Ranacher: *Towards the parameterisation and quantification of dialect contact potential*
- Yelin Kim and Seong-Yun Hong: *Fine-scale estimation of workplace population using the integration of public data*
- Katsuo Kogure and Yoshito Takasaki: *GIS for Causal Research Design*
- Jinhyung Lee and Harvey Miller: *Measuring and comparing individual and collective accessibility using average space-time prisms*
- Shunbao Liao, Keli Wang and Xiao Jiang: *Exploration of Relationship between Land Cover Distribution Pattern and Terrain Factors*
- Xi Liu, Zixuan Huang, Sohrab Rahimi and Clio Andris: *Using Deep Learning to Quantify Urban Residential Interiors*

- Xiaoping Liu, Xun Liang and Xia Li: *A future land use simulation model (FLUS) for simulating land use change by coupling human and natural effects*
- Alex Saunders, Bryan Boruff, Joe Hurley, Marco Amati, Kath Phelan, Peter Caccetta and John Duncan: *What makes Perth's residential neighbourhoods green? High resolution remote sensing data and the drivers of tree canopy cover on public and private land*
- Raja Sengupta: *Manipulating objects to cultivate fields: A Spatio-Temporal Data Structure for Sensor placements to measure the Urban Heat Island phenomenon*
- Henrikki Tenkanen and Rami Piironen: *Web 3.0 and the future of decentralized GIS, blockchain technologies and self-sovereign location data?*
- Ming-Hsiang Tsou, Hao Zhang, Jaehhee Park, Atsushi Nara and Chin-Te Jung: *Spatial Distribution Patterns of Geo-tagged Twitter Data Created by Social Media Bots and Recommended Data Wrangling Procedures*
- Nina Vanhaeren, Kristien Ooms and Philippe De Maeyer: *On the right track*
- Lixia Wang, Dongyang Yu, Zhao Liu, Yun Yang, Juan Zhang, Jichang Han and Zhongan Mao: *Study on NDVI Changes in Weihe Watershed Based on CA-Markov Model*
- Hongqiang Wei and Guiyun Zhou: *Efficient Priority-Flood depression filling in raster digital elevation models*
- Bin Wu, Bailang Yu, Shenjun Yao and Jianping Wu: *A Novel Method for Urban Hierarchy Characterization Using Nighttime Light Remote Sensing Data*
- Shi Xian and Zhixin Qi: *An exploration of social segregation using mobility-activity data and decision tree algorithms*
- ~~Jiue An Yang, Marta Jankowska, Arun Kumar and Jacqueline Kerr: *Movement Data and Environmental Context for Predicting Human Behavior with Machine Learned Models: A Case of Tacos and Fitness Studios*~~
- Guoming Zhang and Junshu Wang: *Context-Aware Point-of-interest Recommendation Based on Hawkes Process*
- Yabo Zhao, Xiuguo Liu, Weihua Hua, Dong Liang and Xieyun Wang: *A method for calculating the distance between two points in folded strata*
- Jingyi Xiao and Werner Kuhn: *A study of transdisciplinary spatial computations on GIS Stack Exchange posts*



GIScience 2018 Primary  
Sponsor: [ESRI](#)

GIScience 2018 is hosted at  
RMIT University in  
collaboration with The  
University of Melbourne.

GIScience 2018 Proceedings  
are published in the LIPIcs  
(Leibniz International  
Proceedings in Informatics)  
series

GIScience 2018  
acknowledges the Kulin  
Nations as the traditional  
owners of the land on which  
GIScience 2018 will be held,  
and respectfully recognises  
Elders both past and present.

---

[Mobile friendly site](#)