Editorial

Jiyeong Lee, Hyung-Sup Jung, Sisi Zlatanoya & Biswajeet Pradhan

Published online: 18 Sep 2019.

Submit your article to this journal ⍈

Article views: 100

View related articles ⍈

View Crossmark data ⍈

Routledge
Taylor & Francis Group

EDITORIAL

Geoinformatics has become essential in understanding the environmental and social characteristics of cities such as urban heat island, quality of life, mobility of people, urban geography, city livability and land use changes, which are an indispensable part of urban sciences. This special issue touches upon some of these topics. We have invited original research articles addressing the state-of-the-art in geospatial information systems (GIS), remote sensing (RS) and global navigation satellite systems (GNSS), to illustrate how geospatial technology can be applied to solve urban and regional problems. In this thematic issue, we have selected nine papers which reflect the topics of interest for this special issue.

The first four papers discuss GIS technology and its application to urban sciences. The paper entitled 'Improving rendering speed of 3D geospatial data based on HTML5/WebGL using improved arithmetic operation speed' identifies the necessary technologies and limitations for 3D spatial data display using HTML5/ WebGL and suggested ways to improve the display speed. The paper 'A 3DGIS multi-agent geo-simulation model for assessment of building evacuation scenarios considering urgency and knowledge of exits' presents a prototype 3DGIS-based multi-agent geo-simulation model using the GAMA simulation platform. The developed model is implemented for the Melchor Hall building in simulating building evacuation and assessing the effect of panic and knowledge of exits. The paper 'An evaluation of kernel smoothing to protect the confidentiality of individual locations' investigates how to recover accurate original source point locations from kernel density estimation (KDE) surfaces and evaluates recovered points' privacy protection and accuracy. The final paper 'The strategies of advanced local spatial data infrastructure for Seoul Metropolitan Government' reviews the cases of the USA and Germany on the local spatial data infrastructure (LSDI) assessment and the cost-benefit analysis.

Three papers were accepted in the category RS technology applied to urban sciences. The first paper entitled 'Detection of doors in a voxel model, derived from a point cloud and its scanner trajectory, to improve the segmentation of the walkable space' reports a method for the detection of walkable spaces based on the analysis of the point cloud and its corresponding trajectory provided by the mobile laser scanner. The second paper 'Extraction of road features from UAV images using a novel level set segmentation approach' proposes an approach that is based on trainable Weka segmentation (TWS) and level set (LS) techniques for road extraction from unmanned aerial vehicle (UAV) images. The third paper 'Ground subsidence observation of solid waste landfill park using multi-temporal radar interferometry' shows that a multi-temporal InSAR method (MTInSAR) enables us to monitor the surface deformation of the solid waste landfill park areas.

Two papers were accepted in the category GNSS technology applied to urban sciences. The first paper is titled 'On the establishment of 3-dimensional national control points in Korea' and the second is 'Performance analysis of the GNSS / MEMS-IMU / on-Board vehicle sensor / magnetometer-based positioning system during GNSS signal blockage'. The former suggests a new national control point system to establish a 3D control point network, which provides various geodetic information and the latter presents a vehicle-positioning algorithm that compensates for the navigation error of GNSS/MEMS-IMU using the on-board vehicle sensors and a magnetometer (MAG).

Jiyeong Lee
Department of Geoinformatics, The University of Seoul, Seoul, South Korea
✉ jlee@uos.ac.kr

Hyung-Sup Jung
Department of Geoinformatics, The University of Seoul, Seoul, South Korea
🆔 http://orcid.org/0000-0003-2335-8438

Sisi Zlatanoya
Faculty of Built Environment, GRID, University of New South Wales, Sydney, Australia
🆔 http://orcid.org/0000-0002-8766-0487

Biswajeet Pradhan
Faculty of Engineering and IT, Centre for Advanced Modelling and Geospatial Information Systems (CAMGIS), University of Technology Sydney, Sydney, Australia
🆔 http://orcid.org/0000-0001-9863-2054