

Date: Tuesday, 22/Oct/2024

9:00am - 10:30am	TU8 - Session 1/2: AI for Geospatial Science
Room: Sirius	Location: Room: Sirius Session Chair: Zhilin Li
9:00am - 10:30am	TU9 -Session 1/2: 3D spatial modelling and intelligence for scene-realistic analysis and digital twin
Room: Pleiades	Location: Room: Pleiades Session Chair: Bisheng YANG
9:00am - 10:30am	TU3: Uncovering Earth System Dynamics with multivariate EO Data and AI
Room: Orion	Location: Room: Orion Session Chair: Martin Reinhardt Session Chair: Anca Angheloa
9:00am - 10:30am	TU1: Approaches for simplifying 3D data exchange between systems
Room: Rottnest Island	Location: Room: Rottnest Island Session Chair: Rob Atkinson
9:00am - 10:30am	TU7 Session 1/2: Collecting data in the field with free & open source geospatial tools: QGIS, QField, and Mergin Maps
Room: Garden Island	Location: Room: Garden Island Session Chair: John Bryant Session Chair: Grant Boxer
10:30am - 12:30pm	Editorial Board meeting 1: GSIS (10:30-12:30) - By invitation only
Room: Abrolhos Islands	Location: Room: Abrolhos Islands
11:00am - 12:30pm	TU8 - Session 2/2: AI for Geospatial Science
Room: Sirius	Location: Room: Sirius Session Chair: Zhilin Li
11:00am - 12:30pm	TU9 -Session 2/2: 3D spatial modelling and intelligence for scene-realistic analysis and digital twin
Room: Pleiades	Location: Room: Pleiades Session Chair: Bisheng YANG
11:00am - 12:30pm	TU6: Creating Immersive GIS Experiences with XR Technology and Real-World Data
Room: Orion	Location: Room: Orion Session Chair: Morakot Pilouk
11:00am - 12:30pm	TU5: Advancing Air Quality Research and Public Awareness Through Innovative Geospatial Technologies
Room: Rottnest Island	Location: Room: Rottnest Island Session Chair: Maria Antonia Brovelli Session Chair: EVA SAVINA MALINVERNI
11:00am - 12:30pm	TU7 Session 2/2: Collecting data in the field with free & open source geospatial tools: QGIS, QField, and Mergin Maps
Room: Garden Island	Location: Room: Garden Island Session Chair: John Bryant Session Chair: John Duncan
1:30pm - 3:00pm	Opening - Spatial Information to: Keynote: Renee Bartolo
Room: Plenary	Location: Room: Plenary Session Chair: Sisi Zlatanova Session Chair: Maria Antonia Brovelli
3:00pm - 3:30pm	Afternoon Tea: .
Conference Venue	Location: Conference Venue
3:30pm - 5:00pm	WG 2 - Session 1: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis
Room: Sirius	Location: Room: Sirius Session Chair: Mahmoud Reza Delavar Session Chair: Renate Nicole Thiede
3:30pm - 5:00pm	WG 11: Cultural Heritage Visualization and Virtual Restoration
Room: Pleiades	Location: Room: Pleiades Session Chair: Miaole Hou Session Chair: Grazia Tucci
3:30pm - 5:00pm	WG 9 - Session 1: Spatially Enabled Urban and Regional Digital Twins
Room: Orion	Location: Room: Orion Session Chair: Mila Koeva
3:30pm - 5:00pm	WG 6 - Session 1: Human Behaviour and Spatial Interactions
Room: Rottnest Island	Location: Room: Rottnest Island Session Chair: Wei Huang
3:30pm - 5:00pm	

Room: Garden Island	ICWG IV/III: Global Mapping for SDGs Location: Room: Garden Island Session Chair: Ruofei Zhong Session Chair: Yiping Chen
5:30pm - 7:30pm Conference Venue	Opening Reception: Social Event Location: Conference Venue
Date: Wednesday, 23/Oct/2024	
8:30am - 10:00am Room: Plenary	Keynote 2: Ahi Saipaia and Karen Joyce Location: Room: Plenary
8:30am - 10:00am Room: Abrolhos Islands	Editorial Board meeting 2: IJGI (8:30-10:30) - By invitation only. Location: Room: Abrolhos Islands Session Chair: Petar Jeremic
10:00am - 10:30am Conference Venue	Morning Tea - Poster Session 1: WG 1 Location: Conference Venue
10:30am - 12:00pm Room: Sirius	WG 2 - Session 2: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis Location: Room: Sirius Session Chair: Inger Fabris-Rotelli Session Chair: Rene Stander
10:30am - 12:00pm Room: Pleiades	WG 1 - Session 2: Spatial Data Representation and Interoperability Location: Room: Pleiades Session Chair: Filip Biljecki
10:30am - 12:00pm Room: Orion	FOSS4G - Session 1: FOSS4G - Perth Location: Room: Orion Session Chair: Ivana Ivanova
10:30am - 12:00pm Room: Rottneest Island	ICWG IV/III/II - Session 1: Openness in Geospatial Science and Remote Sensing Location: Room: Rottneest Island Session Chair: Anca Angheloa Session Chair: Martin Reinhardt
12:00pm - 1:00pm Room: Sirius	WG 2 - Session 3: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis Location: Room: Sirius Session Chair: Nicholas Hamm Session Chair: Renate Nicole Thiede
12:00pm - 1:00pm Room: Pleiades	WG 1 - Session 1: Spatial Data Representation and Interoperability Location: Room: Pleiades Session Chair: Pawel Boguslawski
12:00pm - 1:00pm Room: Orion	FOSS4G - Session 2: FOSS4G - Perth Location: Room: Orion Session Chair: Bryan Boruff
12:00pm - 1:00pm Room: Rottneest Island	WG 5: Extended Reality and Visual Analytics Location: Room: Rottneest Island Session Chair: Hongping Zhang Session Chair: Ori Gudes
1:00pm - 2:00pm Conference Venue	Lunch Wed Location: Conference Venue
2:00pm - 3:30pm Room: Sirius	WG 1 - Session 3: Spatial Data Representation and Interoperability Location: Room: Sirius Session Chair: Elisabetta Colucci
2:00pm - 3:30pm Room: Pleiades	WG 9 - Session 2: Spatially Enabled Urban and Regional Digital Twins Location: Room: Pleiades Session Chair: Mila Koeva
2:00pm - 3:30pm Room: Orion	FOSS4G - Session 3: FOSS4G - Perth Location: Room: Orion Session Chair: John Duncan
2:00pm - 3:30pm Room: Rottneest Island	WG 2 - Session 4: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis Location: Room: Rottneest Island Session Chair: Inger Fabris-Rotelli Session Chair: Rene Stander
2:00pm - 3:30pm Room: Abrolhos Islands	Organising Committee Panel 1: (by invitation only) Location: Room: Abrolhos Islands
3:30pm - 4:00pm	

Conference Venue	Afternoon Tea - Poster Session 2: WG 2 and WG 3 Location: Conference Venue
4:00pm - 5:30pm	WG 2 - Session 5: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis
Room: Sirius	Location: Room: Sirius Session Chair: Mahmoud Reza Delavar Session Chair: Renate Nicole Thiede
4:00pm - 5:30pm	Panel Discussion 1: The role of international organisations (ISPRS) in the world of AI and Digital Twins
Room: Pleiades	Location: Room: Pleiades Session Chair: Maria Antonia Brovelli Session Chair: Petra Helmholtz
4:00pm - 5:30pm	FOSS4G - Session 4: FOSS4G - Perth
Room: Orion	Location: Room: Orion Session Chair: Tracey Cousens
4:00pm - 5:30pm	ICWG IV/III/II - Session 2: Openness in Geospatial Science and Remote Sensing
Room: Rottneest Island	Location: Room: Rottneest Island Session Chair: Anca Angheloa Session Chair: Martin Reinhardt
5:30pm - 6:30pm	ISPRS Student Consortium (ISPRS: Networking Hour!)
Room: Rottneest Island	Location: Room: Rottneest Island This event aims to provide an interacting platform to the students, young professionals and board members of the ISPRS Student Consortium (ISPRS SC) attending the symposium. The idea is to make the attendees aware about different student organizations available, the activities they have been doing and ways to involve in these organizations.
5:30pm - 9:00pm	Social event organised by FOSS4G: Social Event
Beerpourium	Location: Beerpourium
Date: Thursday, 24/Oct/2024	
8:30am - 10:00am	Keynote 3: Wu Chen and Hidenory Fujimura
Room: Plenary	Location: Room: Plenary
10:00am - 10:30am	DoT/Curtin discussion: (by invitation only)
Room: Abrolhos Islands	Location: Room: Abrolhos Islands Session Chair: Ralph Talbot-Smith Session Chair: Iain Parnum
10:00am - 10:30am	Morning Tea - Poster Session 3: WG 4, WG 5 and WG 6
Conference Venue	Location: Conference Venue
10:30am - 12:00pm	WG 6 - Session 2: Human Behaviour and Spatial Interactions
Room: Sirius	Location: Room: Sirius Session Chair: Yan Yingwei
10:30am - 12:00pm	Mix WG - Session 1: IoT and VR
Room: Pleiades	Location: Room: Pleiades Session Chair: Stephan Winter
10:30am - 12:00pm	UPINLBS Session 1.1: Universal Positioning, Indoor Navigation and Location-Based Services
Room: Orion	Location: Room: Orion Session Chair: Günther Retscher Session Chair: Cheng Yang
10:30am - 12:00pm	WG 9 - Session 3: Spatially Enabled Urban and Regional Digital Twins
Room: Rottneest Island	Location: Room: Rottneest Island Session Chair: Ori Gudes Session Chair: Desislava Petrova-Antonova
10:30am - 12:00pm	TCIV Business Meeting 1/2: Meeting
Room: Abrolhos Islands	Location: Room: Abrolhos Islands
12:00pm - 1:00pm	WG 4 - Session 1: Data Management for Spatial Scenarios
Room: Sirius	Location: Room: Sirius Session Chair: Emmanuel Stefanakis
12:00pm - 1:00pm	WG 10 - Session 1: Use of human digital twins in allied health and medical education
Room: Pleiades	Location: Room: Pleiades Session Chair: Roslyn Ward
12:00pm - 1:00pm	UPINLBS Session 1.2: Universal Positioning, Indoor Navigation and Location-Based Services
Room: Orion	Location: Room: Orion Session Chair: Amir Allahvirdizadeh
12:00pm - 1:00pm	

Room: Rottnest Island	Mix WG - Session 2: Metaverse and beyond Location: Room: Rottnest Island
12:00pm - 1:00pm Room: Abrolhos Islands	Organising Committee Panel 2: (by invitation only) Location: Room: Abrolhos Islands
1:00pm - 2:00pm Conference Venue	Lunch Thu Location: Conference Venue
2:00pm - 3:30pm Room: Sirius	WG 4 - Session 2: Data Management for Spatial Scenarios Location: Room: Sirius Session Chair: Mahmoud Reza Delavar
2:00pm - 3:30pm Room: Pleiades	WG 10 - Session 2: Applied Spatial Science for Public Health Location: Room: Pleiades Session Chair: Priyanka Singh Session Chair: Bijoy Krishna Handique
2:00pm - 3:30pm Room: Orion	Mix WG - Session 3: 3D Digital Twins Location: Room: Orion Session Chair: Dimitri Bulatov
2:00pm - 3:30pm Room: Rottnest Island	Mix WG - Session 4: Metaverse and beyond Location: Room: Rottnest Island
2:00pm - 3:30pm Room: Abrolhos Islands	TCIV Business Meeting 2/2: Meeting Location: Room: Abrolhos Islands
3:30pm - 4:00pm Conference Venue	Afternoon Tea - Poster Session 4: WG 7, WG 8 and WG 9 Location: Conference Venue
4:00pm - 5:30pm Room: Sirius	WG 4 - Session 3: Data Management for Spatial Scenarios Location: Room: Sirius Session Chair: Markus Jahn Session Chair: Emmanuel Stefanakis
4:00pm - 5:30pm Room: Pleiades	Panel Discussion 2: UN-GGIM: empowering community with ethical use of GeoAI Location: Room: Pleiades Session Chair: Ivana Ivanova
4:00pm - 5:30pm Room: Orion	UPINLBS Session 1.3: Universal Positioning, Indoor Navigation and Location-Based Services Location: Room: Orion Session Chair: Ruizhi Chen Session Chair: Ammatzia Peled
4:00pm - 5:30pm Room: Rottnest Island	WG 10 - Session 3: Applied Spatial Science for Public Health Location: Room: Rottnest Island Session Chair: Michelle de Klerk Session Chair: Gaurav Kumar
6:00pm - 9:30pm Gage Roads Fremantle (Freo) Brewery	Conference Dinner: Social Event Location: Gage Roads Fremantle (Freo) Brewery
Date: Friday, 25/Oct/2024	
8:30am - 10:00am Room: Plenary	Keynote 4: Qihao Weng Location: Room: Plenary
10:00am - 10:30am Conference Venue	Morning Tea - Poster Session 5: WG 10, WG 11 and ICWG IV/II Location: Conference Venue
10:30am - 12:00pm Room: Sirius	WG 8 - Session 1: Digital Twins for Mobility and Navigation Location: Room: Sirius Session Chair: Zhizhong Kang Session Chair: Wen Xiao
10:30am - 12:00pm Room: Pleiades	WG 3 - Session 1: Geo-computation and Geo-simulation Location: Room: Pleiades Session Chair: Rui Li Session Chair: Bi Yu Chen
10:30am - 12:00pm Room: Orion	UPINLBS Session 2.1: Universal Positioning, Indoor Navigation and Location-Based Services Location: Room: Orion Session Chair: Yanyan Xu Session Chair: Yan Li
10:30am - 12:00pm	

Room: Rottnest Island	Panel Discussion 3: Academia-Industry Collaboration for Geospatial Technology and Science Education Location: Room: Rottnest Island Session Chair: Anjana Vyas Session Chair: Vidushi Patel
12:00pm - 1:00pm	WG 8 - Session 2: Digital Twins for Mobility and Navigation Location: Room: Sirius Session Chair: Zhiyong Wang Session Chair: Tengteng Qu
Room: Sirius	
12:00pm - 1:00pm	WG 7 - Session 1: Intelligent Systems in Sensor Web and IoT Location: Room: Pleiades Session Chair: Monica Wachowicz Session Chair: Songnian Li
Room: Pleiades	
12:00pm - 1:00pm	UPINLBS Session 2.2: Universal Positioning, Indoor Navigation and Location-Based Services Location: Room: Orion Session Chair: Lei Wang Session Chair: Yue Yu
Room: Orion	
12:00pm - 1:00pm	WG 3 - Session 2: Geo-computation and Geo-simulation Location: Room: Rottnest Island Session Chair: Bi Yu Chen Session Chair: Wei TU
Room: Rottnest Island	
12:00pm - 1:00pm	Organising Committee Panel 4: (by invitation only) Location: Room: Abrolhos Islands
Room: Abrolhos Islands	
1:00pm - 2:00pm	Lunch Fri Location: Conference Venue
Conference Venue	
2:00pm - 3:30pm	WG 4 - Session 4: Data Management for Spatial Scenarios Location: Room: Sirius Session Chair: Markus Jahn
Room: Sirius	
2:00pm - 3:30pm	Panel Discussion 4: Industry Use Cases Digital Twin Location: Room: Pleiades Session Chair: Petra Helmholz Session Chair: Sisi Zlatanova
Room: Pleiades	
2:00pm - 3:30pm	UPINLBS Session 2.3: Universal Positioning, Indoor Navigation and Location-Based Services Location: Room: Orion Session Chair: Chen Wu Session Chair: Liang Chen
Room: Orion	
2:00pm - 3:30pm	WG 7 - Session 2: Intelligent Systems in Sensor Web and IoT Location: Room: Rottnest Island Session Chair: Shishuo Xu Session Chair: Songnian Li
Room: Rottnest Island	
3:30pm - 4:00pm	Afternoon Tea - Poster Session 6: ICWG IV/III/II and UPINLBS Location: Conference Venue
Conference Venue	
4:00pm - 5:00pm	Awards and Closing: Spatial Information to Empower the Metaverse Location: Room: Plenary
Room: Plenary	

Presentations

WG 2 - Session 1: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis

Time: Tuesday, 22/Oct/2024: 3:30pm - 5:00pm · Location: Room: Sirius

Session Chair: Mahmoud Reza Delavar

Session Chair: Renate Nicole Thiede

3:30pm - 3:50pm

DATA-DRIVEN STRATEGIES FOR AFFORDABLE HOUSING: A HYBRID GENETIC ALGORITHM-MACHINE LEARNING OPTIMIZATION MODEL IN THE MELBOURNE METROPOLITAN AREA

Peyman Jafary^{1,2}, Davood Shojaei², Sara Pishgahi³, Abbas Rajabifard², Tuan Ngo^{1,4}

¹Building 4.0 CRC, Caulfield East, Victoria, Australia; ²Centre for Spatial Data Infrastructures and Land Administration, Department of Infrastructure Engineering, The University of Melbourne, Melbourne, VIC, Australia; ³Centre for Urban Research, School of Global, Urban and Social Studies, RMIT University, Melbourne, Victoria, Australia; ⁴Department of Infrastructure Engineering, The University of Melbourne, Melbourne, Victoria, Australia; pjafary@student.unimelb.edu.au

3:50pm - 4:10pm

An Efficient Attentive-GRU Structure for Uncertainty Modelling of Crowdsourced Human Trajectories Under Building-obscured Urban Scenes

Yue Yu¹, Zhewei LIU¹, Kexin Tang¹, Yunjuan Sun¹, Shuyu Zhang¹, Liang Chen², Ruizhi Chen²

¹The Hong Kong Polytechnic University, Hong Kong S.A.R. (China); ²Wuhan University, LIESMARS, Wuhan (China);
Doc_Yue_Yu@163.com

4:10pm - 4:30pm

An entropy-based method to find the appropriate spatial resolution

Nicholas Hamm

University of Nottingham, China, People's Republic of; Nicholas.Hamm@nottingham.edu.cn

4:30pm - 4:40pm

Residential Development Through the Lens of AI: Automating Property Parcel Classification Using Multi-Modal Deep Learning

Warin Chotirosniramit, John Duncan, Bryan Boruff

University of Western Australia; warin.chotirosniramit@uwa.edu.au

4:40pm - 5:00pm

Modified ICP based Framework for 3D Localization and Mapping in GNSS-denied Environments using LiDAR

Mansi Koshti, Surbhi Barnwal, Salil Goel

Indian Institute of Technology Kanpur, India; mansipk22@iitk.ac.in

WG 11: Cultural Heritage Visualization and Virtual Restoration

Time: Tuesday, 22/Oct/2024: 3:30pm - 5:00pm · Location: Room: Pleiades

Session Chair: Miaole Hou

Session Chair: Grazia Tucci

3:30pm - 3:50pm

The Framework of Modeling Buddhist Head in 3D with Semantic Information

Yuehan Pan^{1,2}, Huabiao Li², Hongchao Fan³, Botong Gu¹, Xiaoyu Zhao⁴, Miaole Hou¹

¹Beijing University of Civil Engineering and Architecture, China, People's Republic of; ²National Museum of China; ³Norwegian University of Science and Technology; ⁴The Experimental High School Attached to Beijing Normal University;

panyh_cn@163.com

3:50pm - 4:10pm

The Concept of Levels of Detail for 3D Niche Models in CityGML

Su Yang¹, Jun Chen^{1,2}, **Miaole Hou**³, Hongchao Fan⁴, Songnian Li⁵, Yingkui Sun³

¹China University of Mining and Technology (Beijing), China; ²National Geomatics Centre of China; ³Beijing University of Civil Engineering and Architecture; ⁴Norwegian University of Science and Technology; ⁵Toronto Metropolitan University;

houlmiaole@bucea.edu.cn

4:10pm - 4:30pm

Improving Underwater Photogrammetric 3D Reconstruction Processing of Shipwreck Sites

Daniel Jordan Adams, Petra Helmholz, David McMeekin, Andrew Woods

Curtin University, Australia; daniel.adams1@curtin.edu.au

4:30pm - 4:50pm

Explore to Mantai – the Ancient Port-city International Trade-hub of Maritime Silk Road in Northern Coast of Sri Lanka

Nelson Wijenayake^{1,2}, Mingyi DU¹, Jie JIANG¹

¹Beijing University of Civil Engineering and Architecture; ²Scientific Research Development Institute of Technology Australia;

nelsonwijenayake@gmail.com

4:50pm - 5:10pm

A Data Model for Unrecognised Historical Neighbourhood (Case study: Telukbetung, Indonesia)

Shofia Ishar¹, Sisi Zlatanova¹, Yogender Yadav^{1,2}

¹UNSW, School of Art, Design, and Architecture, Sydney; ²Politecnico di Torino, Italy; shofia.ishar@unsw.edu.au

WG 9 - Session 1: Spatially Enabled Urban and Regional Digital Twins

Time: Tuesday, 22/Oct/2024: 3:30pm - 5:00pm · Location: Room: Orion
Session Chair: Mila Koeva

3:30pm - 3:50pm

Digital Twin-based Framework for Heat Stress Calculation

Iván L. Cárdenas-León, Rodrigoandres Morales-Ortega, Mila Koeva, Funda Atun, Karin Pfeffer
University of Twente, The Netherlands; m.n.koeva@utwente.nl

3:50pm - 4:10pm

A Practice of City-scale 3D Geographic Entity Representation and Application in China: The Smart Chongqing City Centre

Yugui HE^{1,2}, Jiahui SHENG³, Xiang LI^{1,2}, Guang CHEN^{1,2}, Xiang ZHANG⁴, Yiqun CHEN⁵

¹Chongqing Academy of Surveying and Mapping, Chongqing, 401120, China; ²Technology Innovation Center for Spatio-temporal Information and Equipment of Intelligent City, Ministry of Natural Resources, Chongqing, 401120, China; ³Chongqing Planning & Design Institute, Chongqing, 401147, China; ⁴National Engineering Research Center of Geographic Information System, School of Geography and Information Engineering, China University of Geosciences, Wuhan, 430074, China; ⁵Faculty of Engineering and Information Technology, The University of Melbourne, Parkville, VIC 3010, Australia; yugui.he@whu.edu.cn

4:10pm - 4:30pm

Construction and Application of Digital Twin Spatial Geographical Digital Base

LINGFANG ZENG, GUANGYAO WANG, JIANXIANG GU
Shanghai Surveying and Mapping Institute; 1161974936@qq.com

4:30pm - 4:40pm

City-Scale Spatial Digital Twins for Rooftop PV Energy Analysis: A Proof-of-Concept Framework

Athenee Ballesteros Teofilo¹, Chayn Sun¹, Marco Amati²

¹School of Science, RMIT University, Australia; ²School of Global, Urban and Social Studies, RMIT University, Australia; s3752797@student.rmit.edu.au

4:40pm - 5:00pm

A Geodatabase Design for the Development of a Digital Twin for Urban Environments: Case Study from Torino, Italy

Yogender Yadav^{1,2}, Elisabetta Colucci³, Piero Boccardo¹, Sisi Zlatanova²

¹Interuniversity Department of Regional and Urban Studies and Planning (DIST), Politecnico di Torino, Italy; ²School of Built Environment, University of New South Wales (UNSW), Sydney, Australia; ³Department of Architecture and Design (DAD), Politecnico di Torino, Italy; yogender105@gmail.com

WG 6 - Session 1: Human Behaviour and Spatial Interactions

Time: Tuesday, 22/Oct/2024: 3:30pm - 5:00pm · Location: Room: Rottneist Island

Session Chair: Wei Huang

3:30pm - 3:50pm

Exploring the Impact of Mountain Urban Characteristics on Housing Prices: A Study Utilizing Street View Visual Features

Xuhui Cui¹, Sha Li¹, Zhen Li², Zhaohan Dong³

¹China University of Mining and Technology, China; ²Defense Engineering Institute, AMS, PLA, Beijing 100850, China;

³Central and Southern China Municipal Engineering Design & Research Institute Co., Ltd.; ts22190075a31tm@cumt.edu.cn

3:50pm - 4:10pm

Exploring the effect of road network structure on inter-regional accessibility in a diverse road network

Renate Nicole Thiede¹, Inger Nicolette Fabris-Rotelli¹, Pravesh Debba², Christopher W Cleghorn³

¹University of Pretoria, South Africa; ²Council of Scientific and Industrial Research, South Africa; ³University of the Witwatersrand, South Africa; renate.thiede@up.ac.za

4:10pm - 4:30pm

Spatial big data and analysis strategies supporting Geographic Information System for Transportation (GIS-T) in conceptual design, modelling, and decision-making: A review

Zehua Zhang, Yongze Song

Curtin University, Australia; levizhang0111@gmail.com

4:30pm - 4:50pm

UrbanViT - Holistic Urban Sensing with Remote Sensing and Street View Images using Vision Transformers

Zhihang Liu¹, Hao Li², Jinlin Wu³, Mei-Po Kwan^{1,4}

¹Institute of Space and Earth Information Science, The Chinese University of Hong Kong, Hong Kong, China; ²Department of Aerospace and Geodesy, Professorship for Big Geospatial Data Management, Technical University of Munich, 80333 Munich, Germany; ³School of Journalism and Communication, Lanzhou University, 730000 Lanzhou, China; ⁴Department of Geography and Resource Management, The Chinese University of Hong Kong, Hong Kong, China; hao_bgd.li@tum.de

4:50pm - 5:00pm

Impacts of the built environment on traffic congestion: a case study of New York City

Wei Hua Huan¹, Wei Huang²

¹College of Surveying and Geo-informatics, Tongji University, Shanghai 200092, China; ²College of Surveying and Geo-informatics, Tongji University, Shanghai 200092, China; Urban Mobility Institute, Tongji University, Shanghai 200092, China; Toronto Metropolitan University, Toronto, M5B 2K3, Canada; wei_huang@tongji.edu.cn

ICWG IV/III: Global Mapping for SDGs

Time: Tuesday, 22/Oct/2024: 3:30pm - 5:00pm · Location: Room: Garden Island

Session Chair: Ruofei Zhong

Session Chair: Yiping Chen

3:30pm - 3:50pm

Evaluating the Potential of Nature-Based Solutions (NBS) and Solar Energy in Urban Built Environments with 3D Point Clouds: Insights from Torino, Italy

Sara Biancifiori^{1,2}, Yogender Yadav^{1,3}, Piero Boccardo¹, Sisi Zlatanova³, Adriano Bisello²

¹Inter-university Department of Regional & Urban Studies and Planning (DIST), Politecnico di Torino, Italy; ²Institute for Renewable Energy, EURAC Research Centre, Bolzano, Italy; ³School of Built Environment, University of New South Wales, Sydney, Australia; yogender.yadav@polito.it

3:50pm - 4:10pm

The Performance of the Optical Flow Field based Dense Image Matching for UAV Imagery

Wei Yuan¹, Weihang Ran², Bruno Adriano¹, Ryosuke Shibasaki², Shunichi Koshimura¹

¹Tohoku University, Japan; ²The University of Tokyo, Japan; wei.yuan@tohoku.ac.jp

4:10pm - 4:30pm

Estimating soil salinity using HISUI hyperspectral data in the Western Australian wheatbelt

Emiko Ariyasu, Satomi Kakuta

Asia Air Survey Co., Ltd., Japan; emk.ariyasu@ajiko.co.jp

4:30pm - 4:40pm

Challenges and difficulties in Crowdsourcing for 3D modelling in urban area

Hongchao Fan¹, Yiping Chen²

¹Department of Civil and Environmental Engineering, Norwegian University of Science and Technology, 7491 Trondheim, Norway; ²School of Geospatial Engineering and Science, Sun Yat-sen University, 519082, Zhuhai, China; chenyp79@mail.sysu.edu.cn

4:40pm - 4:50pm

Assessing the ability of the SDGSAT-1 glimmer imagery in measuring Sustainable Development Goal (SDG) indicators

Bailang Yu¹, Shaoyang Liu¹, Yue Tu¹, Congxiao Wang¹, Zuoqi Chen², Xia Li¹

¹Key Laboratory of Geographic Information Science, Ministry of Education, East China Normal University, Shanghai, 200241, China; ²The Academy of Digital China, Fuzhou University, Fuzhou 350108, China; blyu@geo.ecnu.edu.cn

4:50pm - 5:00pm

Impact of infill development types on Land Surface Temperature in Perth, Western Australia

Jacqueline Stott, Helmholtz Petra

Curtin University, Australia; j.stott@postgrad.curtin.edu.au

Morning Tea - Poster Session 1: WG 1

Time: Wednesday, 23/Oct/2024: 10:00am - 10:30am · Location: Conference Venue

GeoSDG : A spatial simulation tool for exploring the future sustainable development paths

XIA LI

East China Normal University, China, People's Republic of; lixia@geo.ecnu.edu.cn

An AI-based NWP tropospheric parameter-augmented approach for improving GNSS precise point positioning

YUANFAN DENG, WU CHEN, XIAOLONG MI, JUNSHENG DING

The Hong Kong Polytechnic University, Hong Kong S.A.R. (China); yuanfan.deng@connect.polyu.hk

Assessing Flash Droughts in South Korea Using the WRF-Hydro Model: A Comprehensive Analysis of Temporal and Spatial Patterns

Subin Kang, Hyun-Han Kwon

Sejong University, Korea, Republic of (South Korea); k4ng16@sju.ac.kr

Contour data representation learning and terrain analysis using BERT model

Bo Kong, Huafei Yu, Hao Wu, Zhenyu Zhang, Quan Qin, Tinghua Ai, Min Yang

School of Resource and Environmental Sciences, Wuhan University, 430079, Wuhan, China; bokong@whu.edu.cn

An intelligent cartography framework driven by ChatGPT

Hao Wu, Bo Kong, Huafei Yu, Junbo Yu, Tinghua Ai

Wuhan University, China, People's Republic of; wuhaosres@whu.edu.cn

Modelling the Diurnal Land Surface Temperature Cycle in Australia Using Geostationary Satellite Data

Nur Fajar Trihantoro

RMIT University, Australia; s3763564@student.rmit.edu.au

Building and roof type classification on 3D city models

Sitong Li

Delft University of Technology, Netherlands, The; S.Li-57@student.tudelft.nl

BG-LoA: A Benchmarking Framework for BIM/GIS Data Integration based on Meta-Modelling Theory

Junxiang Zhu^{1,2}, Ran Wei¹, Mengtian Yin¹, Ioannis Brilakis¹

¹Department of Engineering, University of Cambridge, United Kingdom; ²School of Design and the Built Environment, Curtin University, Australia; jz652@cam.ac.uk

CONSTRUCTION AND APPLICATION OF PLACE NAME AND ADDRESS MANAGEMENT SYSTEM BASED ON ELASTICSEARCH

Hongping Zhang^{1,2}

¹School of Geomatics and Urban Spatial Information, Beijing University of Civil Engineering and Architecture, Beijing, China;

²National geomatics center of China, China, People's Republic of; zhanghongping@ngcc.cn

Analysis of influencing factors of green view index based on street view segmentation

Xin yuan Xu¹, Lei Niu^{1,2,3}

¹School of Surveying and Geo-Informatics, Lanzhou Jiaotong University, Lanzhou, Gansu 730070, China; ²National-Local Joint Engineering Research Center for Geo-Information Monitoring Technology Application, Lanzhou, Gansu 730070, China;

³Gansu Provincial Engineering Laboratory for Geo-Information Monitoring, Lanzhou, Gansu 730070, China; l.niu@lztu.edu.cn

Rapid development of a spatial Digital Twins using open-source solutions

Nicholas Lee¹, Chayn Sun¹, Serene Ho², Monica Wachowicz¹, Debaditya Acharya¹

¹Department of Geospatial Science, Royal Melbourne Institute of Technology (RMIT), Australia; ²Faculty of Engineering and Information Technology (FEIT), University of Melbourne, Australia; nicholas.lee@rmit.edu.au

A DATABASE-BASED AUTOMATIC CARTOGRAPHY METHOD

Tingting Zhao^{1,2}, Wanzeng Liu^{1,2}, Xinli Di¹

¹National Geomatics Center of China, China; ²Key Laboratory of Spatio-temporal Information and Intelligent Services (LSIIS), MNR, China; zhaotingting@ngcc.cn

WG 2 - Session 2: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis

Time: Wednesday, 23/Oct/2024: 10:30am - 12:00pm · Location: Room: Sirius

Session Chair: Inger Fabris-Rotelli

Session Chair: Rene Stander

10:30am - 10:50am

Generating Long-term GRACE-like Total Water Storage Change Products using Conditional Generative Adversarial Networks

Jielong Wang^{1,2}, Yunzhong Shen², Joseph Awange¹

¹Curtin University, Australia; ²Tongji University, Shanghai, China; jielong.wang@outlook.com

10:50am - 11:10am

Remote Sensing Image Segmentation Based on Probabilistic Fuzzy Local Information Clustering

Xiaoli Li, Longlong Zhao, Jinsong Chen

Shenzhen Institute of Advanced Technology, Chinese Academy of Science, China, People's Republic of; xl.li2@siat.ac.cn

11:10am - 11:20am

Synthesizing Digital Elevation Model for Flood Modeling with Generative AI

Abraham Noah Wu^{1,2,3}, Rudi Stouffs^{1,2,3}

¹National University of Singapore, Singapore; ²National Research Foundation; ³Singapore ETH Centre; e0003217@u.nus.edu

11:20am - 11:40am

Forest Change Mapping using Multi-Source Satellite SAR, Optical, and LiDAR Remote Sensing Data

Benyamin Hosseiny¹, Mahdieh Zaboli¹, Saeid Homayouni²

¹Department of Photogrammetry and Remote Sensing, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran, Tehran, Iran; ²Institut National de la Recherche Scientifique, Centre Eau Terre Environnement, Quebec, Canada; ben.hosseiny@ut.ac.ir

11:40am - 12:00pm

THE FRAMEWORK OF GEOSOT-3D GRID MODELING FOR SPATIAL ARTIFICIAL INTELLIGENCE

Bing Han¹, Tengpeng Qu²

¹Academy for Advanced Interdisciplinary Studies, Peking University, Beijing 100871, China; ²College of Engineering, Peking University, Beijing 100871, China; hanbing@stu.pku.edu.cn

WG 1 - Session 2: Spatial Data Representation and Interoperability

Time: Wednesday, 23/Oct/2024: 10:30am - 12:00pm · Location: Room: Pleiades

Session Chair: Filip Biljecki

10:30am - 10:50am

Research on Semantic Driven Urban Pipeline Dataspace Construction Method

Binghan Li¹, Liang Huo¹, YaoDong Yang², Peng Bao³, Maolin Zhang¹, Yucai Li¹

¹Beijing University of Civil Engineering and Architecture, Beijing 102627, China; ²State Geospatial Information Center, Beijing 100070, China; ³CIGIS (China) Limited, Beijing 100010, China; bh292419@163.com

10:50am - 11:10am

Visualization additional Semantic Information in a 3D Voxel-based Urban Digital Twin - using the Example of the Occupancy Status

Olga Shkedova, Monika Sester

Leibniz University Hannover, Germany; olga.shkedova@ikg.uni-hannover.de

11:10am - 11:30am

Profiling standards towards enhanced standard data power

Francesca Noardo, **Rob Atkinson**, Alejandro Villar, Ingo Simonis, Piotr Zaborowski

Open Geospatial Consortium, Belgium; ratkinson@ogc.org

11:30am - 11:50am

Building a 4D Cell Complex Topology Through the Extrusion Process

Pawel Boguslawski, Amin Gholami

Wroclaw University of Environmental and Life Sciences, Institute of Geodesy and Geoinformatics, Poland; pawel.boguslawski@upwr.edu.pl

11:50am - 12:00pm

Integrated approach to the documentation of the Minor Historical Urban Centre: a 3D Geodatabase for Salemi (Italy)

Laura La Rosa¹, **Elisabetta Colucci**^{1,2}, Giulia Sammartano^{1,2}, Filiberto Chiabrando^{1,2}

¹Department of Architecture and Design (DAD), Polytechnic University of Turin, Viale Pier Andrea Mattioli, 39, Torino (TO), Italy; ²Laboratory of Geomatics for Cultural Heritage (LabG4CH), DAD-Polito; elisabetta.colucci@polito.it

ICWG IV/III/II - Session 1: Openness in Geospatial Science and Remote Sensing

Time: Wednesday, 23/Oct/2024: 10:30am - 12:00pm · Location: Room: Rottneist Island

Session Chair: Anca Anghelea

Session Chair: Martin Reinhardt

10:30am - 10:50am

From Geospatial Data Cube to AI Cube: the Open Geospatial Engine (OGE) Approach

PENG YUE, KAIXUAN WANG, HANWEN XU, JIANYA GONG, LONGGANG XIANG

Wuhan University, China, People's Republic of; pyue@whu.edu.cn

10:50am - 11:10am

Analysis of Hyperspectral LiDAR Transmission Characteristics in Various Underwater Environments

Boyu Liu, Bo Shi*, Fei Han, Fashuai Li, Yicheng Wang, Yunfan Ma, Yukai Ma, Yusen Liu, Yuwei Chen

Advanced Laser Technology Laboratory of Anhui Province, PR China, China, People's Republic of; lbyyli@foxmail.com

11:10am - 11:20am

Assessing the Availability of Public Domain Datasets for Monitoring Mine Rehabilitation Performance in Australia Using Remote Sensing

Bradley Hiskins¹, Tim T. Werner², Victor Maus³, Jun Li⁴, Simit Raval⁵, Bikram Banerjee¹

¹School of Surveying and Built Environment, University of Southern Queensland, Toowoomba, Australia; ²School of Geography, Earth and Atmospheric Sciences, University of Melbourne, 221 Bouverie Street, Carlton, VIC, Australia; ³Institute for Ecological Economics, Vienna University of Economics and Business (WU), Welthandelsplatz 1, 1020, Vienna, Austria;

⁴College of Geoscience and Surveying Engineering, China University of Mining and Technology, Beijing, China; ⁵School of Minerals and Energy Resources Engineering, University of New South Wales, Sydney, NSW 2052, Australia;

bikram.banerjee@unsw.edu.au

11:20am - 11:40am

Hydrographic Surveying Challenges in the Kimberley

Carver Matthew

Department of Transport, WA, Australia; Matthew.Carver@transport.wa.gov.au

WG 2 - Session 3: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis

Time: Wednesday, 23/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Sirius

Session Chair: Nicholas Hamm

Session Chair: Renate Nicole Thiede

12:00pm - 12:20pm

Automated Pipeline for Multi-LiDAR Extrinsic Calibration: Experimental Evaluation and Performance Analysis

Surbhi Barnwal, Mansi Koshti, Salil Goel

Indian Institute of Technology Kanpur India, India; surbhib20@iitk.ac.in

12:20pm - 12:40pm

Assessing classification performance for sampled remote sensing data

Tshepiso Rangongo, Inger Fabris-Rotelli, Renate Thiede

Department of Statistics, University of Pretoria, South Africa; inger.fabris-rotelli@up.ac.za

WG 1 - Session 1: Spatial Data Representation and Interoperability

Time: Wednesday, 23/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Pleiades

Session Chair: Pawel Boguslawski

12:00pm - 12:20pm

Spatial Pattern of Terrestrial Mammal Species Richness of Pakistan

Bilal Ur Rehman Ansari

Institute of Space Technology, Pakistan; bilal.ansari9626@gmail.com

12:20pm - 12:40pm

Comprehensive Post Flood Damage Assessment of Flood 2022 in Khairpur District, Sindh

Anwar Kamal

Institute of Space Technology Islamabad, Pakistan, Pakistan; anwarkamal72@gmail.com

12:40pm - 1:00pm

Coordinating the best Coastal and Marine Mapping for Western Australia

Ralph Talbot-Smith

Department of Transport, WA, Australia; ralph.talbot-smith@transport.wa.gov.au

WG 5: Extended Reality and Visual Analytics

Time: Wednesday, 23/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Rottneist Island

Session Chair: Hongping Zhang

Session Chair: Ori Gudes

12:00pm - 12:20pm

ANALYSIS OF CEMENT PROPERTIES USING HYPERSPECTRAL REMOTE SENSING METHODS

Ishtiaq Ahmed, Umesh Kumar Sharma, Pradeep Kumar Garg, Aditya Kumar Thakur

Indian Institute of technology Roorkee, India; ishtiaq_a@ce.iitr.ac.in

12:20pm - 12:40pm

A Virtual Reality Tool for Accuracy Assessment of 3D Models in an Immersive Virtual Environment

S BALA SUBRAMANIYAM¹, DHARSHAN SHYLESH², JAGANATHAN RAMASAMY², NAVIN KUMAR²

¹L&T Technology Services, Chennai, India; ²Department of Geography, University of Madras, Chennai, India;

dharsansrt@gmail.com

12:40pm - 1:00pm

Development of 3D Urban Digital Twins for Traffic Monitoring in Unreal 5 Game Engine

David Crampen¹, Yogender Yadav^{2,3}, Shofia Ishar³, Wenwen Tian⁴, Sisi Zlatanova³

¹Geodetic Institute, RWTH Aachen University, Germany; ²Inter-university Department of Regional & Urban Studies and Planning (DIST), Politecnico di Torino, Italy; ³School of Built Environment, University of New South Wales, Sydney, Australia;

⁴School of Geography and Information Engineering, China University of Geosciences, Wuhan, China;

yogender105@gmail.com

WG 1 - Session 3: Spatial Data Representation and Interoperability

Time: Wednesday, 23/Oct/2024: 2:00pm - 3:30pm · Location: Room: Sirius
Session Chair: Elisabetta Colucci

2:00pm - 2:20pm

Open Geospatial Engine: A Cloud-based Spatiotemporal Computing Platform

Xianyuan Zhang¹, Longgang Xiang¹, Peng Yue^{2,3}, Jianya Gong², Huayi Wu¹

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan 430079, China; ²School of Remote Sensing and Information Engineering, Wuhan University, Wuhan 430079, China; ³Hubei Province Engineering Center for Intelligent Geoprocessing, Wuhan University, Wuhan 430079, China;
zhangxianyuan@whu.edu.cn

2:20pm - 2:40pm

3D Building Modelling from ALS Point Clouds by Delaunay Triangulation and Graph Theories

Gefei Kong, Hongchao Fan, Gabriele Lobaccaro

Norwegian University of Science and Technology, Norway; hongchao.fan@ntnu.no

2:40pm - 3:00pm

Research on the coupled representation of model and data integration guided by metadata sets

Yucai Li¹, Liang Huo², WangZhang Zhu³, Peng Bao⁴, Miao Zhang⁵, Bingham Li⁶

¹Beijing University of Civil Engineering and Architecture, China, People's Republic of; ²Beijing University of Civil Engineering and Architecture, China, People's Republic of; ³Geovis Technology Co.,Ltd; ⁴CIGIS (CHINA) LIMITED; ⁵Beijing University of Civil Engineering and Architecture, China, People's Republic of; ⁶Beijing University of Civil Engineering and Architecture, China, People's Republic of; liyucal1211@163.com

3:00pm - 3:10pm

An improved test for the accuracy of spatial point pattern tests – application to road networks

Rene Stander, Inger Fabris-Rotelli, Gregory Breetzke, Jean-Pierre Stander

University of Pretoria, South Africa; rene.stander@up.ac.za

3:10pm - 3:20pm

Predicting building characteristics at urban scale using graph neural networks and street-level context

Binyu Lei¹, Pengyuan Liu², Nikola Milojevic-Dupont³, Filip Biljecki^{1,4}

¹Department of Architecture, National University of Singapore, Singapore; ²Future Cities Lab Global, Singapore-ETH Centre, Singapore; ³Technical University of Berlin, Germany; ⁴Department of Real Estate, National University of Singapore, Singapore;
binyul@u.nus.edu

3:20pm - 3:30pm

Cross-domain Super-Resolution Reconstruction of Urban Hyperspectral Remote Sensing Images Based on Conditional Diffusion Models

Heng Liu, Liang Wu, Mingqiang Guo, Zhenzhen Song

cug, China, People's Republic of; cainandangdao@cug.edu.cn

WG 9 - Session 2: Spatially Enabled Urban and Regional Digital Twins

Time: Wednesday, 23/Oct/2024: 2:00pm - 3:30pm · Location: Room: Pleiades
Session Chair: Mila Koeva

2:00pm - 2:20pm

Multimodal data, Confidence level and Digital twin

Shirin Malihi¹, Frederic Bosche²

¹University of Cambridge, United Kingdom; ²School of Engineering, University of Edinburgh; sm2852@cam.ac.uk

2:20pm - 2:40pm

A LiDAR-Based Digital Twinning Workflow for Traffic Monitoring and Simulation

Maulana Ikram Wibisana¹, Mila Koeva¹, Pirouz Nourian¹, Dessislava Petrova-Antonova², Kaloyan Karamitov²

¹University of Twente, Netherlands, The; ²GATE Institute, Sofia University "St. Kliment Ohridski"; m.n.koeva@utwente.nl

2:40pm - 2:50pm

Point Cloud Semantic Segmentation Method Based on Back-propagation and Prototype Learning

Song zhenzhen, Wu liang, Guo mingqiang, Liu Heng

China University of geoscience, China, People's Republic of; songzhenzhen@cug.edu.cn

2:50pm - 3:10pm

3D data integration in the voxel domain

Ben Gorte^{1,2}, Sisi Zlatanova¹, Morakot Pilouk³, Abdoulaye Diakite², Jack Barton¹

¹GRID, School of Built Environment, UNSW, Sydney, Australia; ²Voxelmates Pty. Ltd.; ³ESRI; b.gorte@unsw.edu.au

Developing Scorecards Using LaTeX for Decision Makers: Harnessing the Australian Urban Observatory (AUO) Web Map Analytical Services

Ori Gudes, Melanie Davern, Alan Both, Rebecca Roberts

RMIT, Australia; ori.gudes@rmit.edu.au

WG 2 - Session 4: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis

Time: Wednesday, 23/Oct/2024: 2:00pm - 3:30pm · Location: Room: Rottneest Island

Session Chair: Inger Fabris-Rotelli

Session Chair: Rene Stander

2:00pm - 2:20pm

Machine Learning-Based Soil Moisture Retrieval Using CYGNSS and Interpolated SMAP DATA

Kun Zhang, Kegen Yu, Nianfu Xu, Changyang Wang, Yiruo Lin

China University of Mining and Technology, China, People's Republic of China; kegen.yu@cumt.edu.cn

2:20pm - 2:40pm

SEMANTIC SEGMENTATION UNCERTAINTY ASSESSMENT OF DIFFERENT U-NET ARCHITECTURES FOR EXTRACTING BUILDING FOOTPRINTS

Ehsan Haghighi Gashti¹, Mahmoud Reza Delavar², Haiyan Guan³, Jonathan Li⁴

¹GIS Dept., School of Surveying and Geospatial Eng., College of Engineering, University of Tehran, Iran, Islamic Republic of;

²Center of Excellence in Geomatic Eng. in Disaster Management, and Land Administration in Smart City Lab., School of Surveying and Geospatial Eng., College of Engineering, University of Tehran, Iran, Islamic Republic of; ³School of Remote

Sensing and Geomatics Engineering, Nanjing University of Information Science and Technology, China; ⁴Department of Geography and Environmental Management and Department of Systems Design and Engineering, University of Waterloo,

Canada; mdelavar@ut.ac.ir

2:40pm - 3:00pm

Maritime Behaviour Anomaly Detection with Seasonal Context

Travis Bronislaw Rybicki, Martin Masek, Chiou Peng Lam

Edith Cowan University, Australia; trybicki@our.ecu.edu.au

3:00pm - 3:20pm

ENVestigator Tools: leveraging remote sensing, the Open Data Cube and machine learning techniques for environmental monitoring

Qingxiang Liu, Fang Yuan, Claire Fisk, James Leversha, Lachlan Hurst, Alex Linossier, Paula Fievez, Annmarie Mabarrack

FrontierSI, Melbourne, Australia; lliu@frontiersi.com.au

3:20pm - 3:30pm

Global Streetscapes -- A comprehensive dataset of millions of street-level images over 700 cities for urban science and analytics

Yujun Hou¹, Matias Quintana², Maxim Khomiakov³, Winston Yap¹, Jiani Ouyang⁴, Koichi Ito¹, Zeyu Wang¹, Tianhong Zhao⁵, Filip Biljecki¹

¹National University of Singapore, Singapore; ²Singapore-ETH Centre, Singapore; ³Technical University of Denmark, Denmark;

⁴Wuhan University, China; ⁵Shenzhen Technology University, China; filip@nus.edu.sg

Afternoon Tea - Poster Session 2: WG 2 and WG 3

Time: Wednesday, 23/Oct/2024: 3:30pm - 4:00pm · Location: Conference Venue

River Network Pattern Recognition Supported by Graph Transformer with Global-Local Scale Fusion

Huafei Yu, Aji Gao, Bo Kong, Hao Wu, Zhe Zhou, Tinghua Ai, Yang Min

School of Resource and Environmental Sciences, Wuhan University, Wuhan 430079, China; huafeiyu@whu.edu.cn

Multi-Scale Generative Cartography from High-Resolution Remote Sensing Images via Conditional Diffusion Models Constrained by Geographic Features

Chenxing Sun, Zhanlong Chen, Laner Zhou, Xixi Fan, Jing Bai

China University of Geosciences, People's Republic of China; sunchenxing@cug.edu.cn

Exploring Hydro-Meteorological Changes in the East Asia: A Semi-Hidden Markov Model Approach to ENSO Dynamics

Dongmin Lee, Hyun-Han Kwon

Dept. of Civil and Environmental Engineering, Sejong University, Gwangjin-gu, Seoul, Republic of Korea; dongmin5340@gmail.com

Data informed approach to underground gas storage site condition assessment based on combination of Sentinel 1 and 2 products and spatial statistics

Jan Blachowski, Dariusz Głębicki, Piotr Grzempowski, Aleksandra Kaczmarek, Karolina Owczarz

Wrocław University of Science and Technology, Poland; jan.blachowski@pwr.edu.pl

ENSO Forecasts with Spatiotemporal Fusion Transformer Network

Anming Zhao¹, Mengjiao Qin², Sensen Wu¹, Renyi Liu¹, Zhenhong Du¹

¹Zhejiang university, People's Republic of China; ²Wuhan University of Technology, People's Republic of China; zhaoanming@zju.edu.cn

Improving Precipitation Estimation in Data-sparse Area Using Domain-adversarial neural network

Honglin ZHU¹, Qiming ZHOU^{2,3}

¹Hong Kong Baptist University, Hong Kong S.A.R. (China); ²Institute of Research and Continuing Education (IRACE), Hong Kong Baptist University; ³State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University; 20482787@life.hkbu.edu.hk

Cultivated Land Information Extraction and Spatial Pattern Analysis in Beijing Based on Deep Learning

zitong yan^{1,2}, hao wu^{1,4}, jun zhang¹, dongyang hou³

¹National Geomatics Center of China; ²China University of Mining and Technology-Beijing; ³Central South University; ⁴Corresponding author; wuhao@ngcc.cn

Analyzing the seismic hazard of Jishishan earthquake based on multi-source data

Wei Li^{1,2}, Jincheng Du^{1,2}, Haowen Yan^{1,2}

¹Faculty of Geomatics, Lanzhou Jiaotong University, Lanzhou 730070, China; ²National and Local Joint Engineering Research Center for Geographic Monitoring Technology Application, Lanzhou 730070, China; geosci.wli@lztu.edu.cn

Incorporating Phenological Patterns and Multi-source Remote Sensing Images for Cropland Change Detection

Jiage Chen, Guangyu Du

National Geomatics Center of China, China, People's Republic of; jiagechen@ngcc.cn

Scanning residential powerlines using vehicle-mounted Mobile Laser Scanner

Lachlan Felsch^{1,2}, Debaditya Acharya¹

¹RMIT University, Australia; ²Land Surveys, Australia; debaditya.acharya@rmit.edu.au

Urban functional zones mapping from VHR images and geographical entities

Zhuotong Du¹, Haigang Sui¹, Qiming Zhou^{1,2}, Junyi Liu¹, Li Hua³

¹The State Key Laboratory of Information Engineering in Surveying Mapping and Remote Sensing, Wuhan University, Wuhan, PR China; ²Institute of Research and Continuing Education (IRACE), Hong Kong Baptist University, Shenzhen, PR China; ³College of Resources and Environment, Huazhong Agricultural University, Wuhan, PR China; zhuotongd@whu.edu.cn

Modelling carbon emissions at the individual level in urban area

Tao Jia, Biyu Chen

Wuhan University, China, People's Republic of; tao.jia@whu.edu.cn

**Enhancing Water Management through Advanced Runoff Downscaling Methods Using Radar
Precipitation Data: A Case Study of the Korean Peninsula**

Yoon Jeong Kwon, Hyun-Han Kwon

Sejong University, Korea, Republic of (South Korea); yooneongk@sju.ac.kr

Three-Dimensional Geological Modeling and Related Spatial Analysis Methods: A Review

Lifang Wang¹, Yanli Zhu², Syed Yasir Ali SHAH², Baoyi Zhang²

¹Hunan Vocational College of Engineering, China, People's Republic of; ²Central South University, China, People's Republic
of; zhangbaoyi@csu.edu.cn

WG 2 - Session 5: Artificial Intelligence and Uncertainty Modeling in Spatial Analysis

Time: Wednesday, 23/Oct/2024: 4:00pm - 5:30pm · Location: Room: Sirius

Session Chair: Mahmoud Reza Delavar

Session Chair: Renate Nicole Thiede

4:00pm - 4:20pm

Prediction of Potential Urban Hot Spots in Urban Environments Using Convolutional Neural Networks and Remote Sensing Techniques

Jiongye Li, Rudi Stouffs

Department of Architecture, National University of Singapore, Singapore; lijiongye@u.nus.edu

4:20pm - 4:30pm

Deep Learning for Vegetation Segmentation from MLS point cloud in Urban Setup

Aditya Aditya^{1,2}, Bharat Lohani², Jagannath Aryal¹, Stephan Winter¹

¹The University of Melbourne, Australia; ²Indian Institute of Technology Kanpur; aditya1@student.unimelb.edu.au

4:30pm - 4:40pm

Transferability of GANs-UNet model for informal road detection in underdeveloped areas

Luandrie Potgieter¹, Inger Fabris-Rotelli¹, Renate Thiede¹, Pravesh Debba^{2,3}, Victoria Rautenbach¹, Jaco Kemp⁴, Kyle Loggenberg⁴, Zahn Munch⁴

¹University of Pretoria, South Africa; ²Council for Scientific and Industrial Research; ³University of Witwatersrand Johannesburg; ⁴Stellenbosch University, South Africa; luan3potgieter@gmail.com

4:40pm - 4:50pm

Low-Light Enhancement on Nighttime Drone Imagery for Surveying Vacant Houses

Boyun Yu¹, Kotaro Iizuka², Takashi Oguchi^{1,2}

¹Graduate School of Frontier Sciences, The University of Tokyo, Japan; ²Center for Spatial Information Science, The University of Tokyo, Japan; 4495488317@edu.k.u-tokyo.ac.jp

4:50pm - 5:10pm

Importance of Citizen Science in Effective Control of VBDs in India

Himmat Singh¹, Kuldeep Singh¹, Gaurav Kumar¹, Sanjeev Kumar¹, Babita Bisht²

¹ICMR-National Institute of Malaria Research, Delhi, India; ²North Delhi Municipal Corporation, Delhi, India; hspawar@rediffmail.com

5:10pm - 5:30pm

UNSUPERVISED BUSHFIRE BURN SEVERITY MAPPING USING AERIAL AND SATELLITE IMAGERY

Ting Bai¹, Dominik Stütz², Chang Liu¹, Dimitri Bulatov², Jorg Hacker^{3,4}, Linlin Ge¹

¹School of Civil and Environmental Engineering, Faculty of Engineering, The University of New South Wales, Sydney, Australia; ²Fraunhofer IOSB, Ettlingen, Germany; ³ARA-Airborne Research Australia, Adelaide, SA, Australia; ⁴College of Science and Engineering, Flinders University, Adelaide, SA, Australia; z5218958@ad.unsw.edu.au

ICWG IV/III/II - Session 2: Openness in Geospatial Science and Remote Sensing

Time: Wednesday, 23/Oct/2024: 4:00pm - 5:30pm · Location: Room: Rottneist Island

Session Chair: Anca Anghelea

Session Chair: Martin Reinhardt

4:00pm - 4:10pm

Introduction of LiDAR Range Equation to Improve Radiometric Uncertainty of Terrestrial Laser Scanning (TLS)

Mansoor Sabzali, Lloyd Pilgrim, Shin Chan Han

Civil, Surveying and Environmental Engineering Discipline, The University of Newcastle, Australia; man.sabzali@gmail.com

4:10pm - 4:20pm

Remote Sensing open spatial datasets supporting natural hazard risk mapping and analysis

Elisabetta Colucci, Fabio Giulio Tonolo, Fulvio Rinaudo, Luca Bruno, Lorenzo Raffaele

Department of Architecture and Design, Politecnico di Torino, Torino, Italy.; elisabetta.colucci@polito.it

4:20pm - 4:40pm

Deep Earth System Data Laboratory (DeepESDL)

Anca Anghelea¹, Ewelina Dobrowolska², Gunnar Brandt⁴, Martin Reinhardt³, Miguel Mahecha³, Tejas Morbagal Harish⁴, Stephan Meissl⁵

¹European Space Agency, Italy; ²Serco Italia, Italy; ³Remote Sensing Centre for Earth System Research, University of Leipzig, Germany; ⁴Brockmann Consult, Germany; ⁵EOX IT Services GmbH, Austria; anca.anghelea@esa.int

4:40pm - 5:00pm

EarthCODE – ESA's Earth Science Collaborative Open Development Environment

Anca Anghelea¹, Garin Smith², Stephan Meissl³, Stefan Achtsnit³

¹European Space Agency, Italy; ²Telespazio UK, UK; ³EOX IT Services GmbH, Austria; anca.anghelea@esa.int

5:00pm - 5:20pm

Reviewing availability of open data semantic 3D city models for 3D reconstruction

Olaf Wysocki¹, Benedikt Schwab³, Christof Beil³, Christoph Holst^{1,2}, Thomas Heinrich Kolbe³

¹Professorship of Photogrammetry and Remote Sensing, TUM School of Engineering and Design, Technical University of Munich, 80333 Munich, Germany; ²Chair of Engineering Geodesy, TUM School of Engineering and Design, Technical University of Munich, 80333 Munich, Germany; ³Chair of Geoinformatics, TUM School of Engineering and Design, Technical University of Munich, 80333 Munich, Germany; olaf.wysocki@tum.de

5:20pm - 5:30pm

Integration Between the Internet of Things and Extended Reality Technologies

Chih-Yuan Huang¹, Chen-Qi Peng², Wen-Shuo Liang¹

¹Center for Space and Remote Sensing Research, National Central University, Taiwan; ²Department of Civil Engineering, National Central University, Taiwan; cyhuang@csrslr.ncu.edu.tw

Morning Tea - Poster Session 3: WG 4, WG 5 and WG 6

Time: Thursday, 24/Oct/2024: 10:00am - 10:30am · Location: Conference Venue

Automated Selection of Urban Road Network by Fusion of PageRank Algorithm and Semantic Importance Metrics

Tianshu Chu^{1,2,3}, **Haowen Yan**^{1,2,3}, **Pengbo Li**^{1,2,3}

¹Lanzhoujiaotong University, China, People's Republic of; ²National-Local Joint Engineering Research Center of Technologies and Purposes for National Geographic State Monitoring, Lanzhou 730070, China; ³Gansu Provincial Engineering Laboratory for National Geographic State Monitoring, Lanzhou 730070, China;; 954726557@qq.com

A 3D X-tree Optimized for complex indoor building models

Lei Niu¹, **Zhiyong Wang**²

¹Lanzhou Jiaotong University, China, People's Republic of; ²South China University of Technology; l.niu@lzjtu.edu.cn

Geospatial Data Enrichment through Address Geocoding: Challenges and Solutions

Emil Hristov¹, **Dessislava Petrova-Antonova**¹, **Flavio De Paoli**², **Iva Krasteva**¹, **Michele Ciavotta**², **Roberto Avogadro**²

¹Sofia University, GATE Institute, Bulgaria; ²Universit'a di Milano-Bicocca, Italy.; dessislava.petrova@gate-ai.eu

Research on the method of managing personal massive photos using geodatabase

Tao Cheng, **Xuchao Xing**, **Xinyan Zheng**

National Geomatics Center of China, China, People's Republic of China; xingxuchao@ngcc.cn

Surface deformation analysis by fusion of multi-temporal and multi-source data under disaster emergency conditions

Anpeng Shen¹, **Shuangfeng Wei**¹, **Yuanyuan Wang**², **Zhaodong Yang**³, **Shouxin Zhu**⁴

¹Beijing University of Civil Engineering and Architecture; ²Shaoxing Bureau OF Natural Resources and Planning; ³Shaoxing Huayuan Land Survey Co., Ltd.; ⁴Shaoxing Geotechnical Investigation & Surveying Institute; 2108570022130@stu.bucea.edu.cn

Research On New Spatial Data Infrastructure Supports The Circulation Of Geographic Information Data Elements

Heng Li^{1,2,3,4}, **Wei Huang**¹, **Yong Zhai**¹, **Wenhao Zhao**¹, **Xinyan Zheng**¹, **Jin Liu**¹

¹National Geomatics Center of China, People's Republic of China; ²Institute of Information Engineering, Chinese Academy of Sciences; ³Key Laboratory of Cyberspace Security Defense; ⁴School of Cyber Security, University of Chinese Academy of Sciences; liheng@ngcc.cn

General Directorate of Land Registry and Cadastre, Turkiye

Salih Yalcin, **İbrahim Cankurt**

Metaverse as a Vision Project for the General Directorate of Land Registry and Cadastre; tk48606@tkgm.gov.tr

Using social media data to understand the behaviour toward geo-information disclosure

Nan Cui¹, **Yingwei Yan**¹, **Chen-Chieh Feng**¹, **Filip Biljecki**^{2,3}

¹Department of Geography, National University of Singapore; ²Department of Architecture, National University of Singapore; ³Department of Real Estate, National University of Singapore; yingwei.yan@nus.edu.sg

Browsing Target Extraction and Spatiotemporal Preference Mining from the Complex Virtual Trajectories

Guangsheng Dong¹, **Xiangning Mou**¹, **Hongping Zhang**², **Rui Li**¹, **Huayi Wu**¹, **Jie Jiang**³

¹State Key Laboratory of Information Engineering in Surveying, Wuhan University, Wuhan, China; ²National Geomatics Center of China, Beijing, China; ³School of Geomatics and Urban Spatial Information, Beijing University of Civil Engineering and Architecture, Beijing, China; guangshengdong@whu.edu.cn

Disentangled Graph Neural Network Method for We-Map Recommendations Incorporating Social Information

Ma Wenjun^{1,2,3}, **Yan Haowen**^{1,2,3}, **Li Jingzhong**^{1,2,3}

¹Faculty of Geomatics, Lanzhou Jiaotong University, Lanzhou 730070, China; ²National-Local Joint Engineering Research Center of Technologies and Applications for National Geographic State Monitoring, Lanzhou 730070, China; ³Gansu Engineering Laboratory of Geographic State Information Monitoring, Lanzhou, Gansu, 730070, China;; 646838873@qq.com

Identification and Analysis of Peak Population Migration Patterns in the Beijing-Tianjin-Hebei Region Based on Complex Network Theory

Zheng Wen, **Jianqin Zhang**, **Chaonan Hu**

Beijing University of Civil Engineering and Architecture, China, People's Republic of; wenzheng_bucea@163.com

Research on the method of managing personal massive photos using geodatabase

Tao Cheng, Xuchao Xing, Xinyan Zheng

National Geomatics Center of China, China, People's Republic of China; xingxuchao@ngcc.cn

Estimating the relationship between migration and human development using newly released extension series of DMSP-OLS data

Koel Roychowdhury

Presidency University, India; koel.geog@presiuniv.ac.in

Spatial Mobility and Trans-regional Phenomena of Criminal Activities: An Analysis Based on Big Data from Criminal Legal Texts

Zhihang Liu¹, Tao Xiao², Jinlin Wu³, Jiangyan Zeng⁴

¹Institute of Space and Earth Information Science, The Chinese University of Hong Kong, Hong Kong, China; ²School of Computer Science and Engineering, Central South University, Changsha, China; ³School of Journalism and Communication, Lanzhou University, Lanzhou, China; ⁴Guangdong Weilun Law Firm, Huizhou, China; 1155223242@link.cuhk.edu.hk

WG 6 - Session 2: Human Behaviour and Spatial Interactions

Time: Thursday, 24/Oct/2024: 10:30am - 12:00pm · Location: Room: Sirius
Session Chair: Yan Yingwei

10:30am - 10:50am

Exploring Urban Vitality Characteristics and Interactive Mechanisms at the Community Scale through the Lens of Human Behaviour: A Case Study of Chongqing, China

Jiahui Sheng^{1,3}, Yuqi He², Tao Lu^{1,3}, Fang Wang^{1,3}, Yunjing Huang¹, Bingrong Leng¹, Xiang Zhang⁴, Yiqun Chen⁵

¹Chongqing Planning & Design Institute, Chongqing 401147, China; ²Chongqing Academy of Surveying and Mapping, Chongqing 401123, China; ³Key Laboratory of Monitoring, Evaluation and Early Warning of Territorial Spatial Planning Implementation, Ministry of Natural Resources (LMEE), Chongqing 401147, China; ⁴School of Geography and Information Engineering, National Engineering Research Center of Geographic Information System, China University of Geosciences, Wuhan 430074, China; ⁵Faculty of Engineering and Information Technology, The University of Melbourne, Parkville, VIC 3010, Australia; 1554840283@qq.com

10:50am - 11:10am

POI VizNet: New QGIS tool to construct visibility networks in cities

Asya Natapov¹, Sagi Dalyot², Achituv Cohen³

¹School of Architecture, Building and Civil Engineering, Loughborough University, England; ²Civil and Environmental Engineering Faculty, Technion – Israel Institute of Technology, Israel; ³Department of Civil Engineering, Ariel University, Israel; achituv@ariel.ac.il

11:10am - 11:30am

Analysis of behaviour pattern of bicycle-sharing users based on complex network: a case study of Beijing downtown area

Ruoyan Song, Jie Jiang, Xian Guo

School of Geomatics and Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, Beijing, China; 2412599871@qq.com

11:30am - 11:40am

Identifying geographical flow clusters by detecting spatial partitioning flow for origin-destination data with scale heterogeneity

Huan Chen¹, Zhipeng Gui^{2,3,4}, Huayi Wu^{1,3,4}

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; ²School of Remote Sensing and Information Engineering, Wuhan University, Wuhan, China; ³Collaborative Innovation Center of Geospatial Technology, Wuhan University, Wuhan, China; ⁴Hubei LuoJia Laboratory, Wuhan, China; chen_huan@whu.edu.cn

11:40am - 12:00pm

LEVERAGING CLOUD COMPUTE AND OPEN SOURCE SOFTWARE TO GENERATE 3D MODELS FROM DRONE PHOTOGRAPHY

Gregory Paul Biegel

Amazon, Australia; gbiegel@amazon.com

Mix WG - Session 1: IoT and VR

Time: Thursday, 24/Oct/2024: 10:30am - 12:00pm · Location: Room: Pleiades
Session Chair: Stephan Winter

10:30am - 10:50am

The Fuse Platform: Integrating data from IoT Sensors into an Industrial Spatial Digital Twin

Gregory Paul Biegel¹, Nicholas Bower²

¹Amazon Web Services; ²Woodside Energy; gbiegel@amazon.com

10:50am - 11:10am

sensorHUB - a Novel, Open-Source Software Stack for Enhanced Accessibility and Secure Interoperability in IoT Project Management

David Gackstetter¹, Parid Varoshi¹, Senthold Asseng^{1,2}

¹Hans Eisenmann-Forum for Agricultural Sciences, Technical University of Munich, Germany; ²Department of Life Science Engineering, TUM School of Life Sciences, Technical University of Munich, Germany; david.gackstetter@tum.de

11:10am - 11:30am

Augmented reality for air quality monitoring: a case study in the Marche Region (Italy)

Marsia Sanità, Jonathan Fratini, Roberto Pierdicca, Eva Savina Malinverni

Università Politecnica delle Marche, Italy; m.sanita@pm.univpm.it

11:30am - 11:50am

Real-Time Visibility Assessment in an Interactive Immersive Virtual Reality Application for Urban Public Space Design

Gamze Dane¹, Carlos Campoverde¹, Pirouz Nourian², Mila Koeva²

¹Eindhoven University of Technology, The Netherlands; ²University of Twente, The Netherlands; g.z.dane@tue.nl

11:50am - 12:00pm

Quantified Evaluation of Historic District Landscape Characteristics

Xueyan Yang^{1,2}, Jie Shen^{1,3}

¹College of Civil Engineering and Architecture, Zhejiang University, Hangzhou, China; ²Zhejiang University Architectural Design and Research Institute Co., Ltd., Hangzhou, China; ³Center for Balance Architecture, Zhejiang University, Hangzhou, China; yangxueyan@zju.edu.cn

UPINLBS Session 1.1: Universal Positioning, Indoor Navigation and Location-Based Services

Time: Thursday, 24/Oct/2024: 10:30am - 12:00pm · Location: Room: Orion

Session Chair: Günther Retscher

Session Chair: Cheng Yang

10:30am - 10:50am

An Enhanced Seamless Localization Framework Using Spatial-temporal Uncertainty Predictor Under Obscured Indoor and Outdoor Scenes

Yue Yu¹, Shiyu Bai¹, Jingxian Wang¹, Kexin Tang¹, Sheng Bao¹, Liang Chen², Ruizhi Chen²

¹The Hong Kong Polytechnic University, Hong Kong S.A.R. (China); ²Wuhan University, LIESMARS; Doc.Yue.Yu@163.com

10:50am - 11:10am

LUOJIA Explorer: An Auto-UAV for Unexposed Space Exploration

Shangzhe Sun^{1,2,3}, Chi Chen^{1,2,3}, Bisheng Yang^{1,2,3}, Liuchun Li⁴, Yuhang Xu^{1,2,3}, Ang Jin^{1,2,3}

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; ²Engineering Research Center for Spatio-temporal Data Smart Acquisition and Application, Ministry of Education of China, China; ³Institute of Geo-spatial intelligence, Wuhan University, Wuhan, China; ⁴Institute of Artificial Intelligence, School of Computer Science, Wuhan University, Wuhan, China; SSZ@whu.edu.cn

11:10am - 11:30am

How many events are needed for one reconstructed image using an event camera?

Tingting Lei^{1,2}, Xueli Guo¹, You Li¹

¹Wuhan University, China, People's Republic of; ²Technical University of Munich, Germany; leitingting@whu.edu.cn

11:30am - 11:40am

A self-correction model for ubiquitous indoor localization

Zhengqi Zheng, You Li, Xuan Wang, Zhichao Wen, Xiansheng Yang, Sikang Liu, Xiao Sun

Wuhan University, China, People's Republic of China; zhengzhenqi@whu.edu.cn

11:40am - 12:00pm

Invariant Extended Kalman Filtering for Pedestrian Deep-Inertial Odometry

Shiyu Bai¹, Weisong Wen¹, Yue Yu², Li-Ta Hsu¹

¹Department of Aeronautical and Aviation Engineering, The Hong Kong Polytechnic University, Hong Kong, China;

²Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University, Hong Kong, China; shiyu.bai@polyu.edu.hk

WG 9 - Session 3: Spatially Enabled Urban and Regional Digital Twins

Time: Thursday, 24/Oct/2024: 10:30am - 12:00pm · *Location:* Room: Rottnest Island

Session Chair: Ori Gudes

Session Chair: Desislava Petrova-Antonova

10:30am - 10:50am

The Accuracy of RTK enabled Mobile Phones in RTK denied Areas

Christoph Strecha, Martin Řehák, Davide Cucci

Pix4D SA, Switzerland; christoph.strecha@pix4d.com

10:50am - 11:10am

Developing A Responsive Digital Twin for Real-Time City-Scale Flood Modelling and Interaction

Ryan Turner, Qian {Chayn} Sun

RMIT University, Australia; ryan.turner@rmit.edu.au

11:10am - 11:30am

Possibility of Substitution of LOD1 Data for LOD2 Data on Photovoltaic Potential Estimation at City Districts Level Using a 3D City Model

Ryuji Matsuoka, Kazumasa Koide, Ryogo Abe, Saki Kato, Takashi Takemoto

Kokusai Kogyo Co., Ltd., Japan; ryuji_matsuoka@kk-grp.jp

11:30am - 11:50am

Low-Cost Thermal Point Clouds of Indoor Environments

Aiara Brea, Francisco García-Corbeira, Elisavet Tsiranidou, Lucía Díaz-Vilarinho, Joaquín Martínez

CINTECX, Universidade de Vigo, GeoTECH Group. 36310 Vigo, Spain; lucia@uvigo.es

11:50am - 12:00pm

Broadband Satellites: A New LEO-PNT System

Amir Allahvirdizadeh, Ahmed El-Mowafy

Curtin University, Australia; amir.allahvirdizadeh@curtin.edu.au

WG 4 - Session 1: Data Management for Spatial Scenarios

Time: Thursday, 24/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Sirius

Session Chair: Emmanuel Stefanakis

12:00pm - 12:20pm

Contradiction Hidden in Values of Urban Raster Data

Toshihiro Osaragi, Yoshitsugu Aoki

Tokyo Institute of Technology, Japan; osaragi.t.aa@m.titech.ac.jp

12:20pm - 12:40pm

Blue Carbon Mangroves of Kachchh, Gujarat: Tracking Spatio-Temporal Changes

Shrutika Bhoopendra Raj Parihar¹, Nikhil Lele², Minal Pathak¹

¹Global Centre for Environment and Energy, Ahmedabad University, Gujarat, India; ²Indian Space Research Organisation, Department of Space, Government of India, Ahmedabad, Gujarat, India; shrutika.p1@ahduni.edu.in

12:40pm - 1:00pm

TEMPORAL AND SPATIAL DYNAMICS OF SUBSIDENCE IN EASTERN JHARIA, INDIA

Aditya Kumar Thakur¹, Luvkesh Attri², Rahul Dev Garg¹, Kamal Jain¹, Dheeraj Kumar³, Arnab Chowdhury¹

¹Department of Civil Engineering, Indian Institute of Technology Roorkee, India; ²Department of Civil Engineering, Indian Institute of Technology Bombay, Mumbai, India; ³Department of Mining Engineering, Indian Institute of Technology (Indian School of Mines) Dhanbad, India; aditya_kt@ce.iitr.ac.in

WG 10 - Session 1: Use of human digital twins in allied health and medical education

Time: Thursday, 24/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Pleiades

Session Chair: Roslyn Ward

12:00pm - 12:10pm

Introducing objective measures of speech motor control to the clinical setting: The SMAAT approach

Richard Palmer^{1,2}, Roslyn Ward^{1,2}, Petra Helmholtz²

¹School of Allied Health, Curtin University, Australia; ²School of Earth and Planetary Sciences, Curtin University, Australia;
R.L.Palmer@curtin.edu.au

12:10pm - 12:20pm

Facial Landmark Network Analysis for Speech Sound Disorder Applications

Liam Boyle, Helmholtz Petra, Roslyn Ward, Derek Lichti

Curtin University, Australia; liam.boyle@curtin.edu.au

12:20pm - 12:30pm

From Papyrus to 3D digital imaging – a Medical Illustration perspective

Eamonn McNulty

Perth Children's Hospital, Australia; Eamonn.McNulty@health.wa.gov.au

12:30pm - 12:40pm

Creating digital twins of anatomical body donor specimens using photogrammetry

Morgan Titmus¹, Gary Whittaker¹, Milo Radunski¹, Paul Ellery¹, Beatriz Ito Ramos De Oliveira^{1,2}, Hannah Radley¹, Alina Miranda¹, Petra Helmholtz³, Zhonghua Sun¹

¹Curtin Medical School, Curtin University, Australia; ²Swinburne University of Technology; ³School of Earth and Planetary Sciences, Curtin University; Morgan.Titmus@curtin.edu.au

UPINLBS Session 1.2: Universal Positioning, Indoor Navigation and Location-Based Services

Time: Thursday, 24/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Orion

Session Chair: Amir Allahvirdizadeh

12:00pm - 12:20pm

Strong robust LIO system based on event camera assistance

xueli guo¹, Xuanxuan Zhang¹, Zhichao Wen¹, Tianxiang Zhang¹, Tingting Lei^{1,2}, You Li¹

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; ²TUM School of Engineering and Design, Technical University of Munich, Munich, Germany; guoxueli@whu.edu.cn

12:20pm - 12:40pm

Fuzzy Comprehensive Evaluation based NLOS Identification for UWB Indoor Positioning

Jinkun Li¹, Chundi Xiu¹, Feng Wang¹, Maria S. Selezneva², Dongkai Yang^{1,3}

¹Department of Electronic Information Engineering, Beihang University, Beijing, People's Republic of China; ²Department of Automatic Control Systems, Bauman Moscow State Technical University, Moscow, Russia; ³International Innovation Institute, Beihang University, Hangzhou, China, People's Republic of China; jkl_Reuben@163.com

12:40pm - 1:00pm

Efficient Multi-floor Indoor Mapping with a versatile rotating LiDAR system

Yangzi Cong^{1,2}, Tianhe Xu², Chi Chen³, Wenfeng Nie², Bisheng Yang³

¹Key Laboratory of Smart Earth, Beijing, China; ²School of Space Science and Physics, Shandong University, Weihai, Shandong, China; ³State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; yzcong@sdu.edu.cn

Mix WG - Session 2: Metaverse and beyond

Time: Thursday, 24/Oct/2024: 12:00pm - 1:00pm · Location: Room: Rottnest Island

12:00pm - 12:20pm

Integration of Digital Repositories and Spatial Design within the Metaverse: the Evaluation of Features and Narratives to set Learning Environments on Cultural Heritage

Raffaella De Marco

University of Pavia, Italy; raffaella.demarco@unipv.it

12:20pm - 12:40pm

Conceptual Model of Graph-based Individual Tree and Its Utilization in Digital Twin and Metaverse of Urban Forest

Agus Ambarwari¹, Deni Suwardhi¹, Medria Shekar Rani¹, Emir Husni¹, Deny Willy Junaidy¹, Fauzan Alfi Agirachman¹, Arnadi Murtiyoso², Verena Christiane Griess²

¹Institut Teknologi Bandung, Indonesia; ²Institute of Terrestrial Ecosystems, Switzerland; 33222026@mahasiswa.itb.ac.id

12:40pm - 1:00pm

Spectral Unmixing of Pigments on Surface of Painted Artefacts Considering Spectral Variability

Yu Wang^{1,2}, ShuQiang Lyu^{1,2}, Bo Ning³, Ding Yan³, MiaoLe Hou^{1,2}, PengYu Sun^{1,2}, LiHong Li³

¹School of Geomatics and Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, No.15 Yongyuan Road, Daxing District, Beijing, China; ²Beijing Key Laboratory for Architectural Heritage Fine Reconstruction & Health Monitoring, No.15 Yongyuan Road, Daxing District, Beijing, China; ³Yungang Academy, Datong, Shanxi Province, China; [wydyx0705@163.com](mailto:widyx0705@163.com)

WG 4 - Session 2: Data Management for Spatial Scenarios

Time: Thursday, 24/Oct/2024: 2:00pm - 3:30pm · Location: Room: Sirius
Session Chair: Mahmoud Reza Delavar

2:00pm - 2:20pm

Dynamic-Earth: Temporal-symmetric Earth Dynamic Monitoring from High-Resolution Remote Sensing Images

Haonan Guo¹, Bo Du³, Chen Wu¹, Xin Su², Liangpei Zhang¹

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; ²School of Remote Sensing and Information Engineering, Wuhan University, Wuhan, China; ³School of Computer Science, Wuhan University, Wuhan, China; haonan.guo@whu.edu.cn

2:20pm - 2:40pm

Dynamic coastal mapping using Sentinel-1 and Sentinel-2 data through Digital Earth Africa

Qingxiang Liu¹, Fang Yuan¹, Caitlin Adams¹, Lisa-Maria Rebelo², Michael Wellington³

¹FrontierSI, Melbourne, Australia; ²Digital Earth Africa, Pretoria, South Africa; ³Geoscience Australia, Canberra, Australia; liu@frontiersi.com.au

2:40pm - 3:00pm

Smart Water Management and the Power of Collaboration

Tatiana Aleksandrovna Bogdanova

Het Waterschapshuis, Netherlands, The; t.bogdanova@hetwaterschapshuis.nl

3:00pm - 3:20pm

OPERATIONAL GOOGLE EARTH ENGINE WORKFLOW TO MONITOR IRRIGATED AREAS IN SEMI -ARID CLIMATE

Sikdar Rasel, Kilian Vos, Azeem Khan, Yi Lu, Mustak Shaikh, Vaibhav Gupta, Michelle Newstead

Department of Climate Change, Water, the Environment and Energy, Australia; azeem.khan@dpie.nsw.gov.au

3:20pm - 3:30pm

Assessing the Heat Mitigation Capacity of the Perth Metropolitan using the InVEST Urban Cooling Model

Amanda Tevlone, Petra Helmholz, Ivana Ivanova

Curtin University, Australia; petra.helmholz@curtin.edu.au

WG 10 - Session 2: Applied Spatial Science for Public Health

Time: Thursday, 24/Oct/2024: 2:00pm - 3:30pm · Location: Room: Pleiades

Session Chair: Priyanka Singh

Session Chair: Bijoy Krishna Handique

2:00pm - 2:20pm

An integrated approach for development of a decision support system for early surveillance of Japanese encephalitis: a remote sensing- based study in conjunction with epidemiological scenario in Assam, India

Bijoy K. Handique¹, Siraj A. Khan², K.K Sarma¹, Kasturi Chakraborty¹, Jonali Goswami¹, Anisha Shah², S.P. Aggarwal¹

¹North Eastern Space Applications Centre (NESAC), India; ²ICMR, Regional Medical Research Centre, NE Region, India; bkhandique@gmail.com

2:20pm - 2:40pm

Systematic Review on Citizen Science and Artificial Intelligence for Vector-Borne Diseases

Sameer Saran¹, Priyanka Singh²

¹RRSC, NRSC, ISRO, India; ²UPES, Dehradun, India; priyanka.iirs@gmail.com

2:40pm - 2:50pm

Machine Learning-Based Dengue Risk Assessment using Climate and Environmental Satellite Data

Kashaf Shakoor¹, Muhammad Shahzad Sarfraz¹, Francis Palma²

¹National University of Computer and Emerging Sciences, Pakistan; ²SE+AI Lab, Faculty of Computer Science, University of New Brunswick, Canada; shahzad.sarfraz@nu.edu.pk

2:50pm - 3:10pm

The Evolution and Future Prospects of Spatial Technology in Addressing Vector-Borne Diseases

Sanjeev Kumar Gupta¹, Gaurav Kumar¹, Kuldeep Singh¹, Kumar Vikram², Himmat Singh¹

¹ICMR-National Institute of Malaria Research, India; ²Indian Council of Medical Research, India; nimr.sanjeev@gmail.com

3:10pm - 3:30pm

Explaining distribution of Aedes albopictus by environmental factors using machine learning

Priyanka Singh¹, Sameer Saran²

¹UPES, Dehradun, India; ²RRSC-North, ISRO, New Delhi, India; priyanka.iirs@gmail.com

Mix WG - Session 3: 3D Digital Twins

Time: Thursday, 24/Oct/2024: 2:00pm - 3:30pm · Location: Room: Orion
Session Chair: Dimitri Bulatov

2:00pm - 2:20pm

Unsupervised Clustering-based 3D Static Scene Construction Using LiDAR Channel and Azimuth Angle

Rohit Rajput, Salil Goel, Aditya Medury

Indian Institute of Technology Kanpur, India; rrajput@iitk.ac.in

2:20pm - 2:40pm

QUANTIFYING MARINE GROWTH ON PIPELINES WITH ARCHIVAL REMOTELY OPERATED VEHICLE FOOTAGE – A CASE STUDY

Ben Bayley¹, Terry Griffiths², Fabrizio Pistani², Petra Helmholz¹, David Belton¹, Iain Parnum¹

¹School of Earth and Planetary Sciences, Curtin University, Bentley Western Australia GPO Box U1987, Perth, WA, Australia;

²Aurora Offshore Engineering, Unit 2, 186 Hampden Road, Nedlands, WA, Australia; i.parnum@curtin.edu.au

2:40pm - 3:00pm

Geospatial analytical challenges using remote sensing and bathymetric data across multidisciplinary uses to deliver web app products

Sharon Hu

Department of Transport, Australia; jenny.bothma@transport.wa.gov.au

3:00pm - 3:10pm

An Automatic Updating Method for Complex Polygons Based on Topological Relationship

Xiaoguang Zhou, Zhenming Tang, Dongyang Hou, Jiaxiang Zhou

Central South University, China, People's Republic of; zxqcsu@foxmail.com

3:10pm - 3:20pm

A Study on Digital Twin-Driven Governance Framework for Urban Public Service Facilities

Shuming Zhao, Chao Mao

Chongqing University, China, People's Republic of; zhaoshuming@cqu.edu.cn

Mix WG - Session 4: Metaverse and beyond

Time: Thursday, 24/Oct/2024: 2:00pm - 3:30pm · Location: Room: Rottneest Island

2:00pm - 2:10pm

Pedestrian Video Trajectory Analysis in a Digital Twin Environment

Wenwen Tian¹, Daole Ding¹, Chao Yang², Sisi Zlatanova³, Jianya Gong⁴

¹China University of Geosciences(Wuhan); ²National Engineering Research Center for Geographic Information System, China University of Geosciences(Wuhan); ³University of South Wales, Sydney; ⁴Wuhan University; yangchao@cug.edu.cn

2:10pm - 2:30pm

STUDY ON THE APPLICABILITY OF DETERIORATION DETECTION TECHNIQUES FOR SANDSTONE HERITAGE IN MULTI ENVIRONMENT USING MLP-ATTENTION MODEL

Chengjin Yan^{1,2}, Yuan Cheng^{1,3}, Yue Zhang^{1,3}, Haomin Yu⁴, Jizhong Huang^{1,3}, Hongbin Yan⁵

¹Key Laboratory of Silicate Cultural Relics Conservation (Shanghai University), Ministry of Education; ²School of Computer Engineering and Science, Shanghai University; ³Institute for the Conservation of Cultural Heritage, School of Cultural Heritage and Information Management, Shanghai University; ⁴Department of Computer Science, Aalborg University; ⁵Yungang Research Institute; chengyuan@shu.edu.cn

2:30pm - 2:50pm

Multi- and hyperspectral satellite imagery-derived mineral and vegetation products at the regional to continental scale

Carsten Laukamp

CSIRO, Australia; Carsten.Laukamp@csiro.au

2:50pm - 3:10pm

United Nations Framework for Unlocking the Power of the Geospatial Information Ecosystem: Real-Time Insights and Commercial Opportunities to Bridge the Geospatial Divide

Lesley Arnold

Geospatial Frameworks WA, Australia; lesley.arnold@geospatialframeworks.com.au

Afternoon Tea - Poster Session 4: WG 7, WG 8 and WG 9

Time: Thursday, 24/Oct/2024: 3:30pm - 4:00pm · Location: Conference Venue

Conceptual data modelling for 3D pedestrian mobility spaces based on CityGML 3.0

Bahram Saeidian, Stephan Winter, Martin Tomko, Ehsan Hamzei
The University of Melbourne, Australia; winter@unimelb.edu.au

Multi-UAV Cooperative Path Planning in emergency situations

Yiping Wang, Zhiyong Wang, Zhaoyu Lin
School of Civil Engineering and Transportation, South China University of Technology, Guangzhou 510006, China;
zwang1984@scut.edu.cn

UAV 2D path planning considering ground suitability for flying safety in digital twin

Jieun Kim, Hongki Sung, Kyoosoo Cheong, Tae-Hoon Kim, Junhee Youn
KICT, Korea, Republic of (South Korea); jekim@kict.re.kr

Texture Reconstruction Method Guided by Multi-View Semantic Segmentation Information

Zhendong Liu¹, Shilong Zhang¹, Jianlong Zhang², Dongyang Wang¹
¹Chinese Academy of Surveying and mapping, China, People's Republic of; ²Capital Normal University, China;
MVEVision@126.com

Fine Fitting Algorithm of Street Tree DBH based on Mobile LiDAR Point Clouds

Yongqiang Li, HuiYun Liu, HongMei Qu, ZhiYao Wang
School of Surveying and Land Information Engineering, Henan Polytechnic University, Jiaozuo 454000, China;
liyongqiang@hpu.edu.cn

Control analysis of buildings under construction from indoor Mobile Mapping Systems

Patricia González-Cabaleiro, Rosa M. Túniz-Alcalde, Muataz S.A. Albadri, Antonio Fernández, Lucía Díaz-Vilariño
CINTECX, Universidade de Vigo, GeoTECH Group. 36310 Vigo, Spain; lucia@uvigo.es

CityCanvas: A Conditional Diffusion Model for Precise Street Image Editing

Jlin Wu¹, Zhihang Liu²
¹School of Journalism and Communication, Lanzhou University, 730000 Lanzhou, China; ²Institute of Space and Earth Information Science, The Chinese University of Hong Kong, Hong Kong, China; 220220941091@lzu.edu.cn

Open-Source Solutions for Real-Time 3D Geospatial Web Integration

Marcello La Guardia¹, Mila Koeva², Lucía Díaz Vilariño³, Pirouz Nourian¹
¹University of Florence; ²University of Twente, Netherlands, The; ³Universida de Vigo; m.n.koeva@utwente.nl

High-precision monitoring during the installation of large steel structures by UAV nap-of-the-object photogrammetry

Chuanyao Liu¹, Shuangfeng Wei¹, Min Zhang², Qiang Yan³, Fan Yu¹
¹Beijing University of Civil Engineering and Architecture; ²Yuecheng Branch of Shaoxing Bureau OF Natural Resources and Planning; ³Nanjing AlphaStar Information Technology Co.,Ltd.; 2108160222009@stu.bucea.edu.cn

A 3D Decision Support System for Optimizing Nature Based Solutions for Climate Risk Scenario (Case Study: Semarang Coastal Area)

Ardiyanto Maksimilianus Gai, Dekka Dhigantara Putra
Institut Teknologi Nasional Malang, Indonesia; ardiyanto_maksimilianus@lecturer.itn.ac.id

A Novel Nonlinear Stochastic-Resonance-Enhanced Acceleration Data Processing Approach

Xuyu Gao, Di He, Xin Chen, Yan Xiang, Danping Zou, Ling Pei
Shanghai Jiao Tong University, China, People's Republic of; gao_xuyu@sjtu.edu.cn

WG 4 - Session 3: Data Management for Spatial Scenarios

Time: Thursday, 24/Oct/2024: 4:00pm - 5:30pm · Location: Room: Sirius

Session Chair: Markus Jahn

Session Chair: Emmanuel Stefanakis

4:00pm - 4:20pm

Three-dimensional change detection and description in complex construction scenarios

Xuming Ge, Xingjing Liu

Southwest jiaotong university, China, People's Republic of; xuming.ge@swjtu.edu.cn

4:20pm - 4:40pm

Back to the future: Revisiting Barometric Levelling

Gabriel Scarmana

University of Southern Queensland, Australia; gabriel.scarmana@usq.edu.au

4:40pm - 4:50pm

Exploring the effectiveness of phenology-based NDVI in coffee yield prediction: a Structural Equation Modelling analysis

Thuy Nguyen^{1,2}, Jarrod Kath^{1,3}, Louis Reymondin⁴, Thong Nguyen-Huy¹, Vivekananda Mittahalli Byrareddy¹, Shahbaz Mushtaq¹

¹Centre for Applied Climate Sciences, Institute for Life Sciences and the Environment, University of Southern Queensland, Toowoomba, QLD 4350, Australia; ²International Center for Tropical Agriculture – Hanoi Hub, Agricultural Genetics Institute, Pham Van Dong, Bac Tu Liem, Hanoi, Vietnam; ³School of Agriculture and Environmental Science, Faculty of Health, Engineering and Sciences, University of Southern Queensland, Toowoomba, QLD 4350, Australia; ⁴Bioversity International, Parc scientifique Agropolis II, 1990 Bd de la Lironde, Montpellier, France; Thuy.Nguyen@unisq.edu.au

4:50pm - 5:00pm

Monitoring and mapping land surface phenology across diverse ecosystems in Australia

Qiaoyun Xie^{1,2}, Caitlin E. Moore^{3,4}, Jamie Cleverly⁵, Christopher C. Hall⁶, Yanling Ding⁷, Xuanlong Ma⁸, Andy Leigh⁶, Alfredo Huete⁶

¹School of Engineering, The University of Western Australia, Crawley, WA 6009, Australia; ²Centre for Water and Spatial Science, The University of Western Australia, Crawley, WA 6009, Australia; ³School of Agriculture and Environment, The University of Western Australia, Crawley, WA 6009, Australia; ⁴Institute for Sustainability, Energy and Environment, University of Illinois Urbana-Champaign, Urbana, IL 61801, USA; ⁵Terrestrial Ecosystem Research Network, College of Science and Engineering, James Cook University, Cairns, QLD 4811, Australia; ⁶Faculty of Science, University of Technology Sydney, Sydney, NSW 2007, Australia; ⁷Key Laboratory of Geographical Processes and Ecological Security in Changbai Mountains, Ministry of Education, School of Geographical Sciences, Northeast Normal University, Changchun 130024, China; ⁸College of Earth and Environmental Sciences, Lanzhou University, Lanzhou, Gansu 730000, China; qiaoyun.xie@uwa.edu.au

5:00pm - 5:20pm

Voxel Size Performance in 3D Indoor Model Creation for 3D Evacuation Simulations

Ruihang Xie, Sisi Zlatanova, Jinwoo{Brian} Lee

School of Built Environment, University of New South Wales, Sydney, Australia; ruihang.xie@unsw.edu.au

UPINLBS Session 1.3: Universal Positioning, Indoor Navigation and Location-Based Services

Time: Thursday, 24/Oct/2024: 4:00pm - 5:30pm · *Location:* Room: Orion

Session Chair: Ruizhi Chen

Session Chair: Ammatzia Peled

4:00pm - 4:20pm

A NOVEL PLATFORM AND WORKFLOW FOR UNDERWATER PHOTOGRAMMETRY SURVEYS

Alaa Mufti^{1,2,3}, Petra Helmholz¹, David Belton¹, Amir Allahvirdi-Zadeh¹, Iain Parnum^{1,2}

¹School of Earth and Planetary Science, Curtin University, Australia; ²Centre for Marine Science and Technology, Curtin University, Australia; ³King Abdulaziz University, Rabigh 25732, Saudi Arabia; i.parnum@curtin.edu.au

4:20pm - 4:40pm

NeRF-based Localization and Meshing with Wearable Laser Scanning System: A Case Study in Underground Environment

Yizhe Zhang¹, Jianping Li^{1,2}, Xin Zhao¹, Youqi Liao¹, Zhen Dong¹, Bisheng Yang¹

¹Wuhan University; ²School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore; yizhezhang0418@163.com

4:40pm - 5:00pm

Pedestrian Path Choice in Crowded Indoor Environments

Liu Liu¹, Sisi Zlatanova², Ruihang Xie²

¹College of Architecture and Urban Planning, Tongji University, P.R. China; ²Faculty of Built Environment, UNSW Sydney, Australia; l.liu@tongji.edu.cn

5:00pm - 5:20pm

Assessing Photovoltaic Potential in Urban Environments: A Comparative Study between Aerial Photogrammetry and LiDAR Technologies

Yogender Yadav^{1,2}, Harshit Harshit³, Piero Boccardo¹, Sisi Zlatanova², Kamal Jain³

¹Inter-university Department of Regional & Urban Studies and Planning (DIST), Politecnico di Torino, Italy; ²School of Built Environment, University of New South Wales, Sydney, Australia; ³Department of Civil Engineering, Indian Institute of Technology Roorkee, Roorkee, India; yogender105@gmail.com

WG 10 - Session 3: Applied Spatial Science for Public Health

Time: Thursday, 24/Oct/2024: 4:00pm - 5:30pm · *Location:* Room: Rottnest Island

Session Chair: Michelle de Klerk

Session Chair: Gaurav Kumar

4:00pm - 4:20pm

Hospital accessibility catchment areas as a fuzzy lattice data structure

Michelle de Klerk, Inger Fabris-Rotelli

University of Pretoria, South Africa; u04377915@tuks.co.za

4:20pm - 4:40pm

Artificial intelligence Revolutionizing Mosquito Surveillance for Enhanced Vector-Borne Disease Control

Gaurav Kumar¹, Sanjeev Kumar¹, Kuldeep Singh¹, Sameer Saran², Himmat Singh¹

¹ICMR-National Institute of Malaria Research, India; ²Regional Remote Sensing Centre- North, National Remote Sensing Centre, ISRO, New Delhi, India; gauravnimr@gmail.com

4:40pm - 5:00pm

A machine learning approach for modelling the spatial-temporal propagation pattern of COVID-19

Mohsen Foruzadeh, **Najmeh Neysani Samany**, Bigard Khodakaramian

Tehran University, Iran, Islamic Republic of; nneysani@ut.ac.ir

Morning Tea - Poster Session 5: WG 10, WG 11 and ICWG IV/II

Time: Friday, 25/Oct/2024: 10:00am - 10:30am · Location: Conference Venue

Comparison of greenness's moderating role in the nexus between lung cancer and particulate matter with different particle sizes

Keyu Luo

The university of Hong Kong, Hong Kong S.A.R. (China); bessyluo@connect.hku.hk

Lagged impacts of environmental variables on spatiotemporal variations of dengue in Southeast Asian countries before and during COVID-19

Wei Luo^{1,2}, Zhihao Liu³, Yiding Ran¹, Mengqi Li⁴, Yuxuan Zhou⁵, Weitao Hou⁶, Shengjie Lai⁷, Sabrina Li⁸, Ling Yin⁹

¹GeoSpatialX Lab, Department of Geography, National University of Singapore, Singapore, Singapore; ²Saw Swee Hock School of Public Health, National University of Singapore, Singapore, Singapore; ³School of Geosciences, Yangtze University, Wuhan, China; ⁴Department of Geography, University of Zurich, Zurich, Switzerland; ⁵Department of Architecture and Civil Engineering, City University of Hong Kong, Hong Kong Special Administrative Region, China; ⁶School of Design and the Built Environment, Curtin University, Perth, Australia; ⁷WorldPop, School of Geography and Environmental Science, University of Southampton, Southampton, United Kingdom; ⁸School of Geography, University of Nottingham, Nottingham, United Kingdom; ⁹Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China; weiluo00001@gmail.com

Fostering the Indian Healthcare Infrastructure Landscape using Geospatial Technologies: Insights through NHRR Project

Gaurav Kumar¹, Giribabu Dandabathula¹, Madhu Raikwar², Apurba Kumar Bera¹

¹Regional Remote Sensing Centre - West, National Remote Sensing Centre, Indian Space Research Organisation, Jodhpur, India; ²Central Bureau of Health Intelligence, Ministry of Health and Family Welfare, New Delhi, India; gaurav1089@gmail.com

From Pixels to Places: Understanding Social Media Addiction Through a Spatial Lens

Pooja Sarin

UPES Dehradun, India; pooja.sarin@ddn.upes.ac.in

Assessment of building damage under different ground settlement movements using MT-InSAR monitoring technique

Yi Zheng, Peifeng Ma

The Chinese University of Hong Kong, Hong Kong S.A.R. (China); yizheng@link.cuhk.edu.hk

Towards a digital twin of built heritage based on heterogeneous photographs: Octree-based point cloud for storing, visualizing and assessing buildings information and its reliability

Antonio Suazo

Evidencia Visual - junior research group, Chile; asuazo1@uc.cl

Digital archives for academic heritage: tools and processing environments for the museum metaverse and scientific dissemination

Maurizio Marco Bocconcino¹, Giorgio Garzino², Martino Pavignano³, Mariapaola Vozzola⁴

¹Politecnico di Torino, DISEG - Italy; ²Politecnico di Torino, DISEG - Italy; ³Politecnico di Torino, DAD - Italy; ⁴Politecnico di Torino, DISEG - Italy; maurizio.bocconcino@polito.it

Polar Sea Ice Leads Detection Using Deep Learning with MODIS Imagery

Yueyun Wang¹, Bin He¹, Xiaoping Pang^{1,2}, Tingting Liu^{1,2}, Hao Ke^{1,2}

¹Chinese Antarctic Center of Surveying and Mapping, Wuhan University, Wuhan 430079, China; ²Key Laboratory of Polar Environment Monitoring and Public Governance, Wuhan University, Ministry of Education, Wuhan 430079, China; wangyueyun@whu.edu.cn

A Priori Information-guided Cross-domain Building Extraction Method

Shaoxuan Zhao, Dongyang Hou, Xiaoguang Zhou

Central South University, People's Republic of China; houdongyang1986@163.com

Environmental Drivers of the Spatio-temporal Variations of Chlorophyll-a within Coastal Polynyas in the Ross Sea

Mingxing Cha^{1,2}, David Antoine^{2,3}, Juan Li^{2,3}, Xiaoping Pang^{1,4}

¹Chinese Antarctic Center of Surveying and Mapping, Wuhan University, Wuhan, 430079, China; ²Remote Sensing and Satellite Research Group, School of Earth and Planetary Sciences, Curtin University, Perth, WA 6845, Australia; ³ARC Australian Centre for Excellence in Antarctic Sciences (ACEAS), University of Tasmania, Hobart, TAS, 7001, Australia; ⁴Key Laboratory of Polar Environment Monitoring and Public Governance, Wuhan University, Ministry of Education, Wuhan 430079, China; mx.cha@whu.edu.cn

Integration of satellite imagery and cropping systems model to determine major crop yields in data scarce environments

Waqas Ahmad¹, Azeem Khan²

¹Precision Agriculture and Analytics Lab, University of Agriculture Faisalabad, Pakistan; ²NSW Government, Department of Climate Change, Energy, the Environment and Water; yakasahmad@gmail.com

Satellite Remote Sensing based Maize Phenology Extraction without Long-Term Ground Observations

Xiang Zhang, Linyi Hou, Nengcheng Chen

National Engineering Research Center of Geographic Information System, School of Geography and Information Engineering, China University of Geosciences (Wuhan), Wuhan, 430074, China; zhangxiang76@cug.edu.cn

Comparison of Urban Environment Factors for Solar-Powered Vehicles

Jiyeon Ku¹, Hyeong-Dong Park^{2,3}

¹Dept. of Energy Systems Engineering, Seoul National University, 08826 Seoul, South Korea; ²Dept. of Energy Resources Engineering, Seoul National University, 08826 Seoul, South Korea; ³Research Institute of Energy and Resources, Seoul National University, 08826 Seoul, South Korea; mldbs9808@snu.ac.kr

WG 8 - Session 1: Digital Twins for Mobility and Navigation

Time: Friday, 25/Oct/2024: 10:30am - 12:00pm · Location: Room: Sirius

Session Chair: Zhizhong Kang

Session Chair: Wen Xiao

10:30am - 10:50am

3D Voxel-based Path Planning for AVs in Dynamic Complex Environments

Tailin Gong, Zhiyong Wang, Zhaoyu Lin

School of Civil Engineering and Transportation, South China University of Technology; zwang1984@scut.edu.cn

10:50am - 11:10am

An automatic mapping method of navigation map for outdoor road scenes

Xiaoyu Guo^{1,2,3}, Zhizhong Kang^{1,2,3}, Chenming Ye^{1,2,3}, Xiaoran Wang^{1,2,3}

¹School of Land Science and Technology, China University of Geosciences (Beijing); ²Research Center of Lunar and Planetary Remote Sensing Exploration, China University of Geosciences (Beijing); ³Subcenter of International Cooperation and Research on Lunar and Planetary Exploration, Center of Space Exploration, Ministry of Education of The People's Republic of China; guoxiaoyu@email.cugb.edu.cn

11:10am - 11:30am

Robust and Accurate Visual Geo-localization using Prior Map Constructed by handheld LiDAR SLAM with Camera Image and Terrestrial LiDAR point cloud

Jing Li

Aerospace Information Research Institute, Chinese Academy of Sciences, China, People's Republic of;

lijing202115@aircas.ac.cn

11:30am - 11:50am

Multi-modal land cover classification of historical aerial images and topographic maps: A comparative study

Mareike Dorozynski¹, Frank Thiemann², Monika Sester², Franz Rottensteiner¹, Thorsten Dahms³, Michael Hovenbitzer³

¹Institute of Photogrammetry and GeoInformation, Leibniz Universität Hannover, Germany; ²Institute of Cartography and Geoinformatics, Leibniz Universität Hannover, Germany; ³Federal Agency for Cartography and Geodesy, Germany; rottensteiner@ipi.uni-hannover.de

11:50am - 12:00pm

Ecological influence of oasisization on adjacent regions

Xueyuan Zhang², Yongze Song², Dewan Ashraf¹, Zecheng Guo³

¹College of Earth and Environmental Sciences, Lanzhou University, Lanzhou, Gansu, 730000, China.; ²School of Design and the Built Environment, Curtin University, Bentley, Australia; ³Spatial Sciences Discipline, School of Earth and Planetary Sciences, Curtin University, Perth, WA 6102, Australia; ueyuan.zhang@curtin.edu.au

WG 3 - Session 1: Geo-computation and Geo-simulation

Time: Friday, 25/Oct/2024: 10:30am - 12:00pm · Location: Room: Pleiades

Session Chair: Rui Li

Session Chair: Bi Yu Chen

10:30am - 10:50am

Semantic Time-Geographic Modelling and Analysis

Bi Yu Chen, Yu Zhang, Tao Jia

LIESMARS, Wuhan University, Wuhan, China; chen.biyu@whu.edu.cn

10:50am - 11:10am

Efficient rendering of digital twins consisting of both static and dynamic data through improved memory management

Aleksandar Atanasov, **Benedikt Kottler**, Dimitri Bulatov

Fraunhofer IOSB, Germany; benedikt.kottler@iosb.fraunhofer.de

11:10am - 11:30am

A Coupled CA Urban Development Model (UDM) and Urban Fabric Generator (UFG) for the Assessment of Climate Hazards on Future Urban Development

Stuart Barr, Alistar Ford, Vassilis Glenis, Craig Robson, Olivia Butters, James Virgo

Newcastle University, United Kingdom; stuart.barr@ncl.ac.uk

11:30am - 11:40am

How does urban morphology influence the Land Surface Temperature: a detailed daytime and nighttime analysis using multi-data sources?

Percy Yvon Rakoto, Chayn Sun, Priyadarsini Rajagopalan, Amy Griffin

RMIT University, Australia; s3694613@student.rmit.edu.au

11:40am - 12:00pm

City-wide solar radiation potential analysis by coupling physical modelling and machine learning

Xiana Chen^{1,2,3,4}, Junxian Yu^{1,2,3,4}, **Wei TU**^{1,2,3,4}, Long CHEN⁵

¹Guangdong Key Laboratory of Urban Informatics, Shenzhen University, Shenzhen, Guangdong 518060, China;; ²Ministry of Natural Resources Key Laboratory for Geo-Environmental Monitoring of Great Bay Area, Shenzhen University; ³Ministry of Natural Resources Key Laboratory for Geo-Environmental Monitoring of Great Bay Area, Shenzhen University, Shenzhen, Guangdong 518060, China; ⁴School of Architecture and Urban Planning, Shenzhen University, Shenzhen, Guangdong 518060, China; ⁵State Key Laboratory of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Sciences, Beijing, China;; tuwei@szu.edu.cn

UPINLBS Session 2.1: Universal Positioning, Indoor Navigation and Location-Based Services

Time: Friday, 25/Oct/2024: 10:30am - 12:00pm · Location: Room: Orion

Session Chair: Yanyan Xu

Session Chair: Yan Li

10:30am - 10:50am

Bivariate Correlation-Based Attack: A Challenge for Privacy Preservation of Location Sequence Data

Lihui Mao¹, Zhengquan Xu^{1,2}

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, China;

²Collaborative Innovation Center for Geospatial Technology, Wuhan, China; maolihui@whu.edu.cn

10:50am - 11:00am

LEO Navigation Augmentation System- New opportunity to support Autonomous Driving

Lei Wang

State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; lei.wang@whu.edu.cn

11:00am - 11:10am

The State-of-the-Art in Smartphone Positioning

Günther Retscher

TU Wien, Austria; guenther.retscher@tuwien.ac.at

11:10am - 11:20am

Enhanced Anti-Jamming Performance in GNSS Receivers: An Adaptive Method

Mengyu DING, Wu CHEN, Xiaolong MI, Duojie WENG, Yang YANG, Huan LUO

Dept. of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University, Hong Kong S.A.R. (China);

mengyu.ding@connect.polyu.hk

11:20am - 11:40am

Selective Encryption Algorithm for Vectoral Geographic Data under Feature Point Grouping Strategy

Qianwen Zhou^{1,2}, Ying Xiong^{1,2}, Changqing Zhu^{1,2}, Na Ren^{1,2}

¹Nanjing Normal University, China; ²State Key Laboratory Cultivation Base of Geographical Environment Evolution, Nanjing, China; zqw@njjnu.edu.cn

11:40am - 12:00pm

Privacy-preserving indoor localization in cloud environments based on ranging transformation and inner product encryption

Zhiheng Wang, Yanyan Xu, Bo Zhang, Xue Ouyang

State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan 430072;; wangzhih@whu.edu.cn

WG 8 - Session 2: Digital Twins for Mobility and Navigation

Time: Friday, 25/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Sirius

Session Chair: Zhiyong Wang

Session Chair: Tengpeng Qu

12:00pm - 12:20pm

An Indoor-Outdoor Layered HD Map Construction for Unmanned Ground Vehicles

Huimin Gao^{1,3}, Ruofei Zhong^{1,3}, Xingyu Qi^{1,3}, Donghai Xie^{1,3}, Zhenxing Sun^{1,2,3}, Haili Sun^{1,3}

¹College of Resources, Environment and Tourism, Capital Normal University, Beijing, People's Republic of China; ²Zhengtu 3D (Beijing) Laser Technology Co., Ltd., Beijing, People's Republic of China; ³Key Laboratory of 3-Dimensional Information Acquisition and Application, Ministry of Education, People's Republic of China; 543177458@qq.com

12:20pm - 12:40pm

A multi-scene roadside lidar benchmark towards digital twins of road intersections

Miao Tang, Dianyu Yu, Chengwen Song, Peiguang Li, Pu Zhao, Wen Xiao, Nengcheng Chen

China University of Geosciences, China, People's Republic of; wen.xiao@cug.edu.cn

WG 7 - Session 1: Intelligent Systems in Sensor Web and IoT

Time: Friday, 25/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Pleiades

Session Chair: Monica Wachowicz

Session Chair: Songnian Li

12:00pm - 12:20pm

Crowd Controls Crowd: Quality Improvement of Polygon Integration in Paid Crowdsourcing

David Collmar, Volker Walter, Uwe Sörgel

Universität Stuttgart, Germany; david.collmar@ifp.uni-stuttgart.de

12:20pm - 12:40pm

Exploring spatiotemporal interaction patterns of dockless shared bicycle networks : A case study of Shenzhen, China

Xiaoqian Hu^{1,2}, Yang Chen^{1,2}, Shishuo Xu^{1,2}, Songnian Li³

¹School of Geomatics and Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, 15 Yongyuan Road, Beijing, 102616, China; xushishuo@bucea.edu.cn; 2108570023095@stu.bucea.edu.cn; 2108570021061@stu.bucea.edu.cn; ²Key Laboratory of Urban Spatial Informatics, Ministry of Natural Resources of the

People's Republic of China, 15 Yongyuan Road, Beijing, 102616, China; ³Department of Civil Engineering, Toronto Metropolitan University, 350 Victoria Street, Toronto, M5B 2K3 Canada; snli@torontomu.ca; 2108570023095@stu.bucea.edu.cn

12:40pm - 1:00pm

Smart Building Digital Twin for Interior Water Distribution System Management

Gopika Rajan, Songnian Li

Toronto Metropolitan University, Toronto, Ontario, Canada; gopika.rajan@torontomu.ca

UPINLBS Session 2.2: Universal Positioning, Indoor Navigation and Location-Based Services

Time: Friday, 25/Oct/2024: 12:00pm - 1:00pm · *Location:* Room: Orion

Session Chair: Lei Wang

Session Chair: Yue Yu

12:00pm - 12:20pm

Indoor localization in commercial 5G environment with single BS

Xin Zhou, Liang Chen, Yue Dai, Yanlin Ruan

State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; daiyue2022@whu.edu.cn

12:20pm - 12:40pm

A fast and stable calibration method for VLP system without any geometric measurement

Tianming Huang¹, Yuan Zhuang^{1,2}, Xiansheng Yang¹, Xiao Sun¹

¹State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan 430072, China; ²Luoja Laboratory and the Wuhan Institute of Quantum Technology, Wuhan 430072, China;

huangtianmingw@outlook.com

12:40pm - 1:00pm

Analysis of Machine Learning-Based NLOS Signal Identification Algorithm for UWB Indoor Localization Using CIR Waveform Features

Kai Wang¹, Cheng Yang²

¹Henan Polytechnic University, China, People's Republic of; ²China University of Geosciences, China, People's Republic of;

windkk1999@163.com

WG 3 - Session 2: Geo-computation and Geo-simulation

Time: Friday, 25/Oct/2024: 12:00pm - 1:00pm · Location: Room: Rottneist Island

Session Chair: Bi Yu Chen

Session Chair: Wei TU

12:00pm - 12:20pm

Comparison study of three building regularization algorithms

Dimitri Bulatov¹, Yousif Mousa², Petra Helpholz³

¹Fraunhofer IOSB Ettlingen, Germany; ²Civil Engineering Department, Al-Muthanna University, Al-Muthanna, Iraq; ³School of Earth and Planetary Sciences, Curtin University, Perth, WA 6845, Australia; dimitri.bulatov@iosb.fraunhofer.de

12:20pm - 12:40pm

Energy Consumption-Driven UAV Dock Deployment Planning for Power Inspection

Jing Fu¹, Guiwei Shao¹, Zhiye Wang^{2,3,4}, Shaolong Wu^{2,3,4}, Huanqing Cai¹, Huaxi Wu¹, Chi Chen^{2,3,4}, Bisheng Yang^{2,3,4}

¹China Electric Power Research Institute Co., Ltd, Wuhan, China; ²State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan, China; ³Engineering Research Center for Spatio-temporal Data Smart Acquisition and Application, Ministry of Education of China, China; ⁴Institute of Geo-spatial intelligence, Wuhan University, Wuhan, China; shaolongwu@whu.edu.cn

12:40pm - 12:50pm

Multi-scale Population Activity Unit Interaction Network Model

Xiaorui Yang, Rui Li

Wuhan University, China, People's Republic of; xiaoruiyang@whu.edu.cn

12:50pm - 1:00pm

Real-world analysis of private autonomous vehicles empty cruising impact on parking dynamics and traffic flow

Hamid Bagha, Farhana Murtaza Choudhury, Stephan Winter

University of Melbourne, Australia; baghah@unimelb.edu.au

WG 4 - Session 4: Data Management for Spatial Scenarios

Time: Friday, 25/Oct/2024: 2:00pm - 3:30pm · Location: Room: Sirius

Session Chair: Markus Jahn

2:00pm - 2:20pm

Acquiring Semantic Information of Precast Concrete Pipe Using Geometric Feature Extraction from Mobile Laser Scanning Point Cloud

Kartika Nur Rahma Putri^{1,2}, Xuesong Shen¹, Mitko Aleksandrov¹, Khalegh Barati¹, James Linke³

¹School of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia; ²Department of Civil and Environmental Engineering, Universitas Gadjah Mada, Yogyakarta, Indonesia; ³Linke & Linke Surveys, Sydney, Australia; k.putri@unsw.edu.au

2:20pm - 2:40pm

Vertical Datum Portal

Richard Nicholls

Department of Transport, WA, Australia; Richard.Nicholls@transport.wa.gov.au

2:40pm - 2:50pm

A window selection algorithm for enhanced spatial point pattern analysis

Kabelo Mahloromela, Inger Fabris-Rotelli

University of Pretoria, South Africa; kabelo.mahloromela@up.ac.za

2:50pm - 3:10pm

Geometry, Topology and p-Adic Numbers in Geospatial Data Modelling, Management and Processing: Review and Future Approaches

Patrick Bradley¹, **Markus Jahn**¹, **Martin Breunig**¹, **Mulhim Al-Doori**², **Emmanuel Stefanakis**³, **Paul Kuper**¹

¹Karlsruhe Institute of Technology, Germany; ²University of Science and Technology of Fujairah, U.A.E.; ³University of Calgary, Canada; markus.jahn@kit.edu

3:10pm - 3:30pm

A review of existing sources for the design of an Archaeological Underwater Cultural Heritage database of Puglia Region (Italy)

Alessandra Spreafico¹, **Elisabetta Colucci**¹, **Filiberto Chiabrando**¹, **Rita Auriemma**²

¹Laboratory of Geomatics for Cultural Heritage (LabG4CH), Department of Architecture and Design (DAD), Politecnico di Torino, Viale Pier Andrea Mattioli, 39, Torino (TO), Italy; ²Department of Cultural Heritage, University of Salento, Via Dalmazio Birago, 64 - LECCE (LE), Italy; elisabetta.colucci@polito.it

UPINLBS Session 2.3: Universal Positioning, Indoor Navigation and Location-Based Services

Time: Friday, 25/Oct/2024: 2:00pm - 3:30pm · *Location:* Room: Orion

Session Chair: Chen Wu

Session Chair: Liang Chen

2:00pm - 2:20pm

Ground Constrained 3D Lidar SLAM Design and Implementation

Wenwen Tian, Puwei Yang, Chao Yang

China University of Geosciences(Wuhan), China, People's Republic of; geotww@163.com

2:20pm - 2:30pm

Tightly Coupled GNSS/PDR/BLE System for Pedestrian Navigation in Dense Urban Areas

Jingxian Wang¹, Wu Chen¹, Duojie Weng¹, Long Tang²

¹The Hong Kong Polytechnic University, Hong Kong S.A.R. (China); ²Guangdong University of Technology, China;

jingxian.wang@connect.polyu.hk

2:30pm - 2:40pm

A robust algorithm for low-cost MEMS_IMU vehicle integrated navigation based on motion constraint and BP neural network

Ying Xu, Jinjie Sun, Kun Wang

Shandong University of Science and Technology, China, People's Republic of; yingxu@sdust.edu.cn

2:40pm - 3:00pm

A Lightweight Blind Obstacle Detection Network for Mobile Applications

jianghong zhao, Ziyu Liu, Ziling Liu, Ailin Xu, Jifu Zhao

School of Geomatics and Urban Spatial Information, Beijing University of Civil Engineering and Architecture, China, People's Republic of; zhaohong@bucea.edu.cn

WG 7 - Session 2: Intelligent Systems in Sensor Web and IoT

Time: Friday, 25/Oct/2024: 2:00pm - 3:30pm · *Location:* Room: Rottnest Island

Session Chair: Shishuo Xu

Session Chair: Songnian Li

2:00pm - 2:20pm

Spatial-temporal data model for indoor fire response considering multi-factors

Jiahui Wang, Jie Jiang, Xian Guo

School of Geomatics and Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, Beijing, China;
wangqy525@gmail.com

2:20pm - 2:40pm

Design and Implementation of a Geographic Scenario Computation System Based on Knowledge Base

Yunlong Feng¹, Changfeng Jing², Jianing Li¹, Tao Liang¹

¹Beijing University of Civil Engineering and Architecture, China, People's Republic of; ²China University of Geosciences, China, People's Republic of; jingcf@cugb.edu.cn

2:40pm - 2:50pm

Evaluation of the High-resolution Urban Thermal Sharpener (HUTS) downscaling method for urban areas using Landsat 8/9 and Sentinel 2

Ratovoson Robert Andriambololonaharisoamalalala¹, Petra Helmholtz¹, Ivana Ivanova¹, Eriita Jones¹, Susannah Soon¹, Dimitri Bulatov², Yongze Song¹

¹Curtin University, Australia; ²Institute of Optonics, System Technologies and Image Exploitation (IOSB), Germany;
r.andriamb@student.curtin.edu.au

2:50pm - 3:10pm

YOLO-CLIP: A Remote Sensing Object Detection Model with Textual Feature Guidance

Zhaoming WU, Yue XU, Zhengchao CHEN

Aerospace Information Research Institute, Chinese Academy of Sciences, China, People's Republic of; xuyue@aircas.ac.cn

Afternoon Tea - Poster Session 6: ICWG IV/III/II and UPINLBS

Time: Friday, 25/Oct/2024: 3:30pm - 4:00pm · Location: Conference Venue

Refined Classification of Local Climate Zones by Incorporating the Effect of Blue-Green Spatial Landscape Patterns

Jie Chen

Central South University, People's Republic of China; cj2011@csu.edu.cn

A UNIQUE RULESET FOR SALT MARSH AND MANGROVE MONITORING USING SENTINEL -2

Israt Jahan Diti¹, Sikdar Rasel²

¹Rajshahi University, Bangladesh, People's Republic of; ²DCCEEW, New South Wales, Australia; isratditi@yahoo.com

Image Classification Algorithms in Remote Sensing: A Comparative Analysis of Traditional and Machine Learning Approaches

Vineesh V

Department of Geography, Government College Chittur, Palakkad, Kerala, India; vineeshvc@gmail.com

Four Pan-Sharpener fusion methods Comparison for Oyster Farming Floating Raft Recognition in Maowei Sea

Zhi Zeng¹, Hui Lin², Xiaokui Xie², Mingzhong Liang², Ning Wu², Jixiang Gao², Xianfu Ma²

¹Huizhou University, China, People's Republic of; ²Beibu Gulf University, China, People's Republic of; zengzhi@hzu.edu.cn

Influence of Urban Form on Surface Urban Heat Island at County Scale: Insights from Explainable Machine Learning

Yujia Ming¹, Yong Liu¹, Yongze Song²

¹School of Management Science and Real Estate, Chongqing University, Chongqing 400045, P.R. China; ²School of Design and the Built Environment, Curtin University, Perth, 6845, Australia; 20150659@cqu.edu.cn

Accuracy Assessment of Land Use Land Cover classification using Machine Learning Classifiers in Google Earth Engine, A Case Study of Jammu District

Sheeba Khan¹, Ashutosh Bhardwaj², Sakthivel M³

¹University of Madras, Department of Geography, Chennai, India; ²Indian Institute of Remote Sensing, Dehradun, Uttarakhand, India; ³University of Madras, Department of Geography, Chennai, India; sheebakhan1802@gmail.com

Research on Soil Erosion Assessment and Main Influencing Factors Analysis in the Changhua River Basin Based on the Chinese Soil and Water Loss Equation

Zhenqi Song, Yuefeng Lu

Shandong University of Technology; 22507020020@stumail.sdut.edu.cn

Precision Agriculture: A Web-GIS Framework for Health and Stress Assessment Using Multi-Source Remote Sensing Data

Sahil Bhakal¹, Akshay Pandey², Kamal Jain³

¹Panjab University Sec 14 Chandigarh, India, India; ²Indian Institute of Technology Roorkee IITR, India; ³Indian Institute of Technology Roorkee IITR, India; sahilsinghbhakal@gmail.com

Sensitivity analysis of highway landslides in Guangxi, China

Xueyuan Li, Yuefeng Lu

Shandong University of Technology, China, People's Republic of; 2532441802@qq.com

Perspective transform-based depth estimation of monocular camera for electrocution threat determination of construction machinery

Tong Yang¹, Shuangfeng Wei¹, Liang Fan², Lei Zhang²

¹School of Geomatics and Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, China;

²Guangzhou Zhongke Zhixun Technology Co., Guang Zhou, Guang Dong, China; 2108570022132@stu.bucea.edu.cn

Research on Orbit Determination Performance of LEO Satellite Simulation Data

Le Wang, Qining Wang, Wen Lai, Haonan She

CHANG'AN UNIVERSITY, China, People's Republic of; rexlele@163.com

A LiDAR SLAM Algorithm Considering Dynamic Extraction of Feature Points in Underground Coal Mine

Xiaohu Lin, Tao Yan, Wanqiang Yao

Xi'an University of science and technology, People's Republic of China; xhlin214@xust.edu.cn

Evaluation of enhanced information and service performance of BDSBAS

Guanwen HUANG, Haoyue DUAN, Qin ZHANG, Ziwei WANG, Le Wang
Chang'an university, China, People's Republic of; huang830928@chd.edu.cn