

**Global Smart Cities Summit
cum
The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)**

20 - 23 August 2023, Hong Kong

Conference Guidebook



CONTENTS

Welcome from the Conference Chair	4
Committee	5
Organizers, Supporting Exhibitors & Organizations	6
Programme At-a-Glance	8
Overview of Parallel Sessions	15
Detailed Programme for Parallel Sessions	16
Chairs & Keynote Speakers	29
Campus Map	38
Useful Information	39

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

Welcome from the Conference Chair

Welcome to the Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023).

The first and second ICUI has been successfully held in 2017 and 2019, respectively. Following this, GSCS & ICUI 2023 will feature keynote speeches by internationally leading scientists, government forums, and technology innovation exhibitions from smart city practitioners, government officials, and industry-related organizations, providing an excellent platform for exchanging state-of-the-art technologies and innovations in smart cities and urban informatics.



Urban Informatics is an emerging transdiscipline encompassing urban science, urban sensing, urban big data infrastructure, urban computing, and urban system and applications. I hope that by promoting the exchange of people from all walks of life related to smart-city development, this conference will push forward the progress of urban informatics and demonstrate its fundamental role on our way to building smarter cities.

During the conference, we will also announce the winners of our Smart City Technology Innovation Award and Best Student Presentation Award. Full paper submissions are also considered for potential publication in Urban Informatics, the first international journal dedicated to this transdiscipline.

I would like to express our thanks to the exhibitors and many other academic, professional, and industrial bodies who have supported the conference greatly.

I wish the conference a great success and look forward to meeting you this August.

A handwritten signature in black ink, appearing to read 'John W.Z. Shi'.

Prof. John, W.Z. SHI

Chairman of Organizing Committee, GSCS & ICUI 2023
Director, Otto Poon C.F. Smart Cities Research Institute, PolyU
President, International Society for Urban Informatics
AIEAS, DNatSc, FAcSS, FHKIS, FRICS

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

COMMITTEE

Chair

- Wen-zhong Shi, The Hong Kong Polytechnic University

Conference Secretary

- Rui Cao, The Hong Kong Polytechnic University
- Stella Wong, The Hong Kong Polytechnic University
- Xin-tao Liu, The Hong Kong Polytechnic University

Local Organizing Committee

- Sissi Chen, The Hong Kong Polytechnic University
- Serein Han, The Hong Kong Polytechnic University
- Shuo Wang, The Hong Kong Polytechnic University
- Yang Xu, The Hong Kong Polytechnic University
- Wei Yao, The Hong Kong Polytechnic University
- An-shu Zhang, The Hong Kong Polytechnic University
- Min Zhang, The Hong Kong Polytechnic University
- Xiao-lin Zhu, The Hong Kong Polytechnic University
- Tony Zhuge, The Hong Kong Polytechnic University

International Advisory Committee

- Kay Axhausen, ETH Zurich, Switzerland
- Michael Batty, University College London, UK
- Moshe Ben-Akiva, Massachusetts Institute of Technology, USA
- Mark Birkin, The Alan Turing Institute, UK
- Jun Chen, National Geomatics Center of China, China
- Tao Cheng, University College London, UK
- Kai-Wei Chiang, National Cheng Kung University, Taiwan
- Helen Couclelis, University of California, Santa Barbara, USA
- Manfred Ehlers, Osnabrück University, Germany
- Jarmo Eskelinen, The University of Edinburgh, UK
- Jianya Gong, Wuhan University, China
- Peng Gong, The University of Hong Kong, Hong Kong SAR
- Michael Goodchild, University of California, Santa Barbara, USA
- Renzhong Guo, Shenzhen University, China
- Christian Heipke, University of Hanover, Germany
- Andrew Hudson-Smith, University College London, UK
- Bin Jiang, Hong Kong University of Science and Technology (Guangzhou), China
- Ying Jin, University of Cambridge, UK
- Mei-Po Kwan, The Chinese University of Hong Kong, Hong Kong SAR
- Nina Lam, Louisiana State University, USA
- David Levinson, University of Sydney, Australia
- Qingquan Li, Shenzhen University, China
- Yu Liu, Peking University, China
- Ying Long, Tsinghua University, China
- Paul Longley, University College London, UK
- Liqiu Meng, Technical University of Munich, Germany
- Eric Miller, University of Toronto, Canada
- Alan Murray, University of California at Santa Barbara, USA
- Janet Nichol, University of Sussex, UK
- Denise Pumain, University of Paris I Panthéon-Sorbonne, France
- Martin Raubal, ETH Zurich, Switzerland
- Shih-Lung Shaw, University of Tennessee, USA
- Alex Singleton, The University of Liverpool, UK
- Rudi Stouffs, National University of Singapore, Singapore
- Paul Torrens, New York University, USA
- Shaowen Wang, University of Illinois Urbana-Champaign, USA
- Chaowei Yang, George Mason University, USA
- Yuanxi Yang, Xi'an Research Institute of Surveying and Mapping, China
- Xinyue Ye, Texas A&M University, USA
- Anthony Yeh, The University of Hong Kong, Hong Kong SAR
- Chenghu Zhou, Chinese Academy of Sciences, China

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

ORGANIZERS

International Society for Urban Informatics (ISUI)
Otto Poon Charitable Foundation Smart Cities Research Institute (SCRI), The Hong Kong Polytechnic University



SUPPORTING EXHIBITORS

Hexagon Leica Geosystems
China Unicom Global Limited
Logistics and Supply Chain MultiTech R&D Centre
Prucom Digital Solutions Limited
China State Construction Engineering (Hong Kong) Limited
Yau Lee Holdings Limited
Autotoll Limited
Augur Intelligence Technology Limited
Smart Space Technologies Limited
JiangSu XingYue Surveying & Mapping Technology Co., LTD
ATAL Engineering Group
China ARSC (HK) Limited
Euro Asia Construction Engineering Limited
Esri China (Hong Kong) Limited
The GeoSys Hong Kong Limited
Research Institute for Smart Cities, Shenzhen University
Sichuan Zhijie Future Technology Group Co., Ltd.
China Aviation Star View (Beijing) Information Technology Co., Ltd.
China Mobile Hong Kong Company Limited
Springer Nature
Research Institute for Artificial Intelligence of Things, HK PolyU
Faculty of Architecture, HKU
Research Institute for Intelligent Wearable Systems, HK PolyU
Department of Geomatics Engineering, University of Calgary
HD Maps Center, National Cheng Kung University
Lands Department, HKSAR Government
Research Institute for Land and Space, HK PolyU
Beijing SAA Measure and Control Tech Ltd

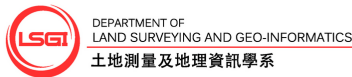


Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

SUPPORTING ORGNISATIONS

International Cartographic Association (ICA)
International Federation of Surveyors (FIG)
Chinese Society for Geodesy, Photogrammetry and Cartography (CSGPC)
Construction Industry Council (CIC)
Department of Land Surveying and Geo-Informatics (LSGI), The Hong Kong Polytechnic University
Greater Bay Area International Information Technology Industry Association (GBAITA)
Hong Kong Cyberport
Hong Kong Institute of Urban Design
Hong Kong Science & Technology Parks
Hong Kong-Shenzhen Innovation and Technology Park (HSITP)
Invest Hong Kong (InvestHK)
PolyU Academy for Interdisciplinary Research (PAIR), The Hong Kong Polytechnic University
Shenzhen University
Smart City Consortium (SCC)
The Hong Kong Institute of Architects (HKIA)
The Hong Kong Institution of Engineers (HKIE)
The Hong Kong Institute of Surveyors (HKIS)



**Global Smart Cities Summit cum
The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)
20 – 23 August 2023
Programme At-a-Glance**

GSCS & ICUI 2023 Pre-Conference Activities Date: 20 August 2023 (Sunday) Time: 10:00 – 21:00 Venue: Block Z, The Hong Kong Polytechnic University	
14:00 – 21:00	On-site Registration (2/F, Block Z)
10:00 – 18:00	Exhibition Setup (2/F, Block Z)
18:00 – 21:00	Icebreaking Reception (2/F, Block Z)

GSCS & ICUI 2023 Opening Ceremony Date: 21 August 2023 (Monday) Time: 9:00 – 12:30 Venue: Jockey Club Auditorium, The Hong Kong Polytechnic University	
08:15 – 09:00	On-site Registration (Entrance Foyer Floor, Jockey Club Auditorium)
09:00 – 09:10	Welcome Remarks <i>Prof. Jin-Guang TENG, President of The Hong Kong Polytechnic University</i>
09:10 – 09:15	Opening Address <i>Prof. Dong SUN, JP, Secretary for Innovation, Technology and Industry, The Government of the Hong Kong SAR</i>
09:15 – 09:45	Introduction of the Conference & Announcement of Smart City Index and Ranking <i>Prof. Wenzhong SHI, Chair of Conference Organizing Committee, President of International Society for Urban Informatics</i>
09:45 – 09:50	Opening Gimmick
09:50 – 10:00	Group Photo Sessions

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

10:00 – 10:10	<p>Award Presentation Ceremony</p> <ul style="list-style-type: none"> • Outstanding Achievement in Urban Informatics Awards • <i>Urban Informatics Best Paper Awards 2023</i>
10:10 – 10:50	Coffee Break (Entrance Foyer Floor, Jockey Club Auditorium)
10:50 – 11:50	<p><i>Session Co-Chairs: Prof. Jianya GONG, Wuhan University; Prof. Renzhong GUO, Shenzhen University</i></p> <p>Keynote Address 1 - Large Scale Urban Models as Digital Twins for Exploring Future Cities <i>Prof. Michael BATTY, University College London, UK</i></p> <p>Keynote Address 2 - Digital Twins for Urban Planning <i>Prof. Michael GOODCHILD, University of California, Santa Barbara, USA</i></p>
11:50 – 12:30	<p>Panel Discussion - The Future of Smart Cities Co-Chairs: <i>Prof. Chenghu ZHOU, Chinese Academy of Sciences; Prof. Anthony YEH, The University of Hong Kong</i></p> <p>Panelists: <i>Prof. Michael BATTY, Prof. Jianya GONG, Prof. Michael GOODCHILD, Prof. Renzhong GUO, Prof. Ying JIN (University of Cambridge, UK), Prof. Carlo RATTI (MIT, USA), Prof. Wenzhong SHI</i></p>
End of Opening Ceremony	
12:30 – 14:30	<p>Lunch Break</p> <ul style="list-style-type: none"> • Full Registration & VIP Guests: Ju Yin House, 4/F, Communal Building • Student Registration: VA Student Canteen, Shaw Amenities Building

GSCS & ICUI 2023 Conference Day & Technology Innovation Exhibition

Date: 21 August 2023 (Monday)

Time: 14:30 – 18:30

Venue: Block Z, The Hong Kong Polytechnic University

14:00 – 18:00	On-site Registration (2/F, Block Z)	<p>Technology Innovation Exhibition (Room Z204, Z206, Z208, Z210, Z212)</p>
14:30 – 16:10 (Parallel Sessions)	<ul style="list-style-type: none"> • Technology Innovation in Smart Cities – 1 (Room Z209) • High-Definition Maps for Autonomous Vehicles – 1 (Room Z207) • Urban AI for Sustainable Cities and Society – 1 (Room Z205) • Urban Science and Systems – 1 (Room Z211) • Urban Sensing for Smart City – 1 (Room Z414) • Urban Spatial Data Analytics – 1 (Room Z409) • Emerging Topics in Smart City Development – 1 (Room Z406) 	
16:10 – 16:30	Coffee break (2/F, Block Z)	
16:30 – 18:30 (Parallel Sessions)	<ul style="list-style-type: none"> • Spatio-temporal Information for GBA Synergistic Development (Room Z209) • Technology Innovation in Smart Cities – 2 (Room Z207) 	

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

	<ul style="list-style-type: none"> • High-Definition Maps for Autonomous Vehicles – 2 (Room Z207) • Urban AI for Sustainable Cities and Society – 2 (Room Z205) • Energy Networks and Urban Environment (Room Z406) • Urban Science and Systems – 2 (Room Z211) • Urban Sensing for Smart City – 2 (Room Z414) • Urban Spatial Data Analytics – 2 (Room Z409)
19:30 – 22:00	Conference Banquet (for full registration) (King Yat Hin, 8/F, Harbour Metropolis Plaza , 7 Metropolis Drive, Hung Hom)

GSCS & ICUI 2023 Conference Day & Technology Innovation Exhibition Date: 22 August 2023 (Tuesday) Time: 09:00 – 18:30 Venue: Block Z, The Hong Kong Polytechnic University		
08:00 – 12:00	On-site Registration (2/F, Block Z)	Technology Innovation Exhibition (Room Z204, Z206, Z208, Z210, Z212)
09:00 – 09:30	Keynote Address 3 - Advances and Challenges in Intelligent Interpretation of Remote Sensing (Room Z209) <i>Prof. Jianya GONG, Wuhan University, China</i>	
09:30 – 10:00	Keynote Address 4 – The Time Perspective of Urban Research (Room Z209) <i>Prof. Renzhong GUO, Shenzhen University, China</i>	
10:00 – 10:20	Coffee break (2/F, Block Z)	
10:20 – 12:00 (Parallel Sessions)	<ul style="list-style-type: none"> • Dialogue with International Journal Editors (Room Z205) • Advancement in Smart Cities Research in the GBA (Room Z209) • Technology Innovation in Smart Cities – 3 (Room Z207) • GeoAI for Human Mobility – 1 (Room Z211) • Urbanization Monitoring with Big Earth Data – 1 (Room Z414) • Urban Big Data Infrastructure for Smart City – 1 (Room Z406) • Urban Spatial Data Analytics – 3 (Room Z409) 	
12:00 – 14:00	Lunch Break <ul style="list-style-type: none"> • Full Registration: Ju Yin House, 4/F, Communal Building • Student Registration: VA Student Canteen, Shaw Amenities Building 	

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

14:00 – 14:30	Keynote Address 5 – Senseable Cities (Room Z209) <i>Prof. Carlo RATTI, Massachusetts Institute of Technology, USA</i>	
14:30 – 16:10 (Parallel Sessions)	<ul style="list-style-type: none"> • Technology Innovation in Smart Cities – 4 (Room Z207) • GeoAI for Human Mobility – 2 (Room Z211) • Diagnosing Cities for Human Health and Emotional Wellbeing – 1 (Room Z205) • Urbanization Monitoring with Big Earth Data – 2 (Room Z414) • Urban Big Data Infrastructure for Smart City – 2 (Room Z406) • Urban Computing for Smart City – 1 (Room Z209) • Urban Spatial Data Analytics – 4 (Room Z409) 	
16:10 – 16:30	Coffee break (2/F, Block Z)	
16:30 – 18:30 (Parallel Sessions)	<ul style="list-style-type: none"> • GeoAI for Human Mobility – 3 (Room Z211) • Disaster Monitoring and Damage Early Warning in Urban Area (Room Z406) • Diagnosing Cities for Human Health and Emotional Wellbeing – 2 (Room Z205) • Urbanization Monitoring with Big Earth Data – 3 (Room Z414) • Urban Science and Systems – 3 (Room Z211) • Urban Computing for Smart City – 2 (Room Z209) • Urban Spatial Data Analytics – 5 (Room Z409) • Smart Cities Solutions – 1 (Room Z207) 	
18:30 – 19:30	Smart City Lab Visit (Room ZN607, Block Z)	

GSCS & ICUI 2023 Conference Day & Technology Innovation Exhibition

Date: 23 August 2023 (Wednesday)

Time: 09:00 – 17:00

Venue: Block Z, The Hong Kong Polytechnic University

09:00 – 09:30	Keynote Address 6 - Insights from Mapping the Evolution in the Distribution of Young Adults among Mega-City Regions (Room Z209) <i>Prof. Ying JIN, University of Cambridge, UK</i>	Technology Innovation Exhibition (Room Z204, Z206, Z208, Z210, Z212)
09:30 – 10:00	Keynote Address 7 - Urban Big Data and Urban Planning (Room Z209) <i>Prof. Anthony YEH, The University of Hong Kong, Hong Kong SAR</i>	

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

10:00 – 10:20	Coffee break (2/F, Block Z)	
10:20 – 12:00 (Parallel Sessions)	<ul style="list-style-type: none"> • Smart City Development in Hong Kong (Room Z209) • Unraveling Urban Dynamic for Smart Cities – 1 (Room Z205) • Urban Science and Systems – 4 (Room Z211) • Urban Sensing for Smart City – 3 (Room Z414) • Urban Spatial Data Analytics – 6 (Room Z409) • Smart Cities Solutions – 2 (Room Z207) • Emerging Topics in Smart City Development - 2 (Room Z406) 	
12:00 – 14:00	<p>Lunch Break</p> <ul style="list-style-type: none"> • Full Registration: Ju Yin House, 4/F, Communal Building • Student Registration: VA Student Canteen, Shaw Amenities Building 	
14:00 – 16:00 (Parallel Sessions)	<ul style="list-style-type: none"> • Unraveling Urban Dynamic for Smart Cities – 2 (Room Z205) • Urban Science and Systems – 5 (Room Z211) • Urban Sensing for Smart City – 4 (Room Z414) • Urban Spatial Data Analytics – 7 (Room Z409) • Smart Cities Solutions – 3 (Room Z207) 	
16:00 – 16:20	Coffee break (2/F, Block Z)	
16:20 – 17:00	<p>Closing Ceremony & Awards Presentation (Room Z207)</p> <ul style="list-style-type: none"> • Smart City Technology Innovation Award 2023 • Best Student Presentation Award 	
End of GSCS & ICUI2023, see you in 2025!		

Chair of Conference Organizing Committee

Prof. Wenzhong SHI

Academician of International Eurasian Academy of Sciences and Fellow of Academy of Social Sciences (UK)

President of International Society for Urban Informatics

Director of Otto Poon Charitable Foundation Smart Cities Research Institute, The Hong Kong Polytechnic University, Hong Kong SAR, China

Co-chair of Panel Discussion

Prof. Chenghu ZHOU, Academician of the Chinese Academy of Sciences, Chinese Academy of Sciences, China

Keynote Speakers

- 1) Prof. Michael BATTY, Fellow of the British Academy (FBA) and the Royal Society (FRS); Chairman of the Centre for Advanced Spatial Analysis, University College London, UK
- 2) Prof. Michael GOODCHILD, Member of the US National Academy of Sciences, Fellow of the Royal Society, University of California, Santa Barbara, USA
- 3) Prof. Jianya GONG, Academician of the Chinese Academy of Sciences, Wuhan University, China
- 4) Prof. Renzhong GUO, Academician of Chinese Academy of Engineering; Dean of Research Institute for Smart Cities, Shenzhen University, China
- 5) Prof. Carlo RATTI, Director of MIT Senseable City Lab, Massachusetts Institute of Technology, USA
- 6) Prof. Ying JIN, Director of the Martin Centre for Architectural and Urban Studies, University of Cambridge, UK
- 7) Prof. Anthony YEH, Academician of the Chinese Academy of Sciences, Chair Professor of the Department of Urban Planning and Design, The University of Hong Kong, Hong Kong SAR, China

Parallel Sessions

- August 21: Session 1 (**S1**) (14:30 – 16:10), **S2** (16:30 – 18:30)
- August 22: **S3** (10:20 – 12:00), **S4** (14:30 – 16:10), **S5** (16:30 – 18:30)
- August 23: **S6** (10:20 – 12:00), **S7** (14:00 – 16:00)

Invited Sessions:

- 1) Technology Innovation in Smart Cities (**S1**: Room Z209; **S2, S3, S4**: Room Z207)
- 2) Smart City Development in Hong Kong (**S6**: Room Z209)
- 3) Spatio-temporal Information for GBA Synergistic Development (**S2**: Room Z209)
- 4) Dialogue with International Journal Editors (**S3**: Room Z205)
- 5) Advancement in Smart Cities Research in the GBA (**S3**: Room Z209)

Theme Sessions:

- 1) GeoAI for Human Mobility: Emerging Technologies and Applications (**S3, S4, S5**: Room Z211)
- 2) Unraveling Urban Dynamic for Smart Cities (**S6, S7**: Room Z205)

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

- 3) High-Definition Maps for Autonomous Vehicles (**S1, S2**: Room Z207)
- 4) Urban AI for Sustainable Cities and Society (**S1, S2**: Room Z205)
- 5) Disaster Monitoring and Damage Early Warning in Urban Area (**S5**: Room Z406)
- 6) Diagnosing Cities for Human Health and Emotional Wellbeing (**S4, S5**: Room Z205)
- 7) Urbanization Monitoring with Big Earth Data (**S3, S4, S5**: Room Z414)
- 8) Energy Networks and Urban Environment (**S2**: Room Z406)

Regular Sessions:

- 1) Urban Science and Systems (**S1, S2, S5, S6, S7**: Room Z211)
- 2) Urban Sensing for Smart City (**S1, S2, S6, S7**: Room Z414)
- 3) Urban Big Data Infrastructure for Smart City (**S3, S4**: Room Z406)
- 4) Urban Computing for Smart City (**S4, S5**: Room Z209)
- 5) Urban Spatial Data Analytics (**S1, S2, S3, S4, S5, S6, S7**: Room Z409)
- 6) Smart Cities Solutions (**S5, S6, S7**: Room Z207)
- 7) Emerging Topics in Smart City Development (**S1, S6**: Room Z406)

Overview of Parallel Sessions (Time, Venue, Session Name & Chairs)

Theme & Regular Sessions: Oral Presentations (15-min Talk, 5-min Q&A)

		A (Room Z209)	B (Room Z211)	C (Room Z207)	D (Room Z205)	E (Room Z414)	F (Room Z409)	G (Room Z406)
Aug 21 PM	S1 14:30 – 16:10 (100min)	IS1: Technology innovation in smart cities - 1 Chairs: Prof. Wenzhong Shi	RS1: Urban Science and Systems - 1 Chairs: Prof. Qingming Zhan, Prof. Hongzan Jiao	TS3: High-Definition Maps for Autonomous Vehicles - 1 Chairs: Prof. Wei Huang, Prof. Shen Ying	TS4: Urban AI for Sustainable Cities and Society - 1 Chairs: Prof. Bishen Yang, Dr. Zhe Zhang	RS2: Urban Sensing for Smart City - 1 Chairs: Prof. Pengling Zhang, Dr. Zhenxuan Li	RS5: Urban spatial data analytics - 1 Chairs: Prof. Huayi Wu, Dr. Xue Yang	RS7: Emerging Topics in Smart City Development - 1 Chairs: Prof. Jie Li, Dr. Xin Yan
Aug 21 PM	S2 16:30 – 18:30 (120min)	IS3: Spatio-temporal information for GBA synergistic development Chairs: Prof. Zhengdong Huang, Dr. Anshu Zhang	RS1: Urban Science and Systems - 2 Chairs: Prof. Ying Long, Dr. Yuan Lai	TS3: High-Definition Maps for Autonomous Vehicles - 2 Chairs: Prof. Wei Huang, Prof. Shen Ying & IS1: Technology innovation in smart cities - 2 Chairs: Dr. Min Zhang, Mr. Anthony Wong	TS4: Urban AI for Sustainable Cities and Society - 2 Chairs: Prof. Zhongren Peng, Dr. Chao Liu	RS2: Urban Sensing for Smart City - 2 Chairs: Prof. Hua Zhang	RS5: Urban spatial data analytics - 2 Chairs: Prof. Jinliang Wang, Dr. Huali Xiang	TS8: Energy networks and urban environment Chairs: Dr. Rui Zhu, Dr. Haoran Zhang
Aug 22 AM	S3 10:20 – 12:00 (100min)	IS5: Advancement in smart cities research in the GBA Chairs: Prof. Wenzhong Shi, Dr. Rui Cao	TS1: GeoAI for Human Mobility - 1 Chairs: Dr. Wei Tu, Dr. Xu Yang, Dr. Kang Liu	IS1: Technology innovation in smart cities - 3 Chairs: Dr. Min Zhang, Mr. Anthony Wong	IS4: Dialogue with international journal editors Chair: Dr. Xintao Liu	TS7: Urbanization Monitoring with Big Earth Data - 1 Chairs: Prof. Lizhe Wang, Dr. Jining Yan, Dr. Ruyi Feng	RS5: Urban spatial data analytics - 3 Chairs: Prof. Yuanmei Jiao, Dr. Jianbo Lai	RS3: Urban Big Data Infrastructure for Smart City - 1 Chairs: Dr. Yiliang Wan, Dr. Rong Kou
Aug 22 PM	S4 14:30 – 16:10 (100min)	RS4: Urban Computing for Smart City - 1 Chairs: Prof. Ruisheng Wang, Dr. Lipeng Gao	TS1: GeoAI for Human Mobility - 2 Chairs: Dr. Wei Tu, Dr. Xu Yang, Dr. Kang Liu	IS1: Technology innovation in smart cities - 4 Chairs: Dr. Min Zhang, Mr. Anthony Wong	TS6: Diagnosing cities for human health and emotional wellbeing - 1 Chairs: Prof. Bin Jiang, Dr. Zheng Chen	TS7: Urbanization Monitoring with Big Earth Data - 2 Chairs: Prof. Lizhe Wang, Dr. Jining Yan, Dr. Ruyi Feng	RS5: Urban spatial data analytics - 4 Chairs: Dr. Jiangping Chen, Dr. Binbin Lu	RS3: Urban Big Data Infrastructure for Smart City - 2 Chairs: Dr. Tianren Yang, Dr. Cui Guo
Aug 22 PM	S5 16:30 – 18:30 (120min)	RS4: Urban Computing for Smart City - 2 Chairs: Prof. Yaohua Yi, Dr. Xianju Li	TS1: GeoAI for Human Mobility - 3 & RS1: Urban Science and Systems - 3 Chairs: Dr. Wei Tu, Dr. Xu Yang, Dr. Kang Liu	RS6: Smart Cities Solutions - 1 Chairs: Dr. Chengxiang Zhuge, Dr. Zhicheng Shi	TS6: Diagnosing cities for human health and emotional wellbeing - 2 Chairs: Prof. Bin Jiang, Dr. Zheng Chen	TS7: Urbanization Monitoring with Big Earth Data - 3 Chairs: Prof. Lizhe Wang, Dr. Jining Yan, Dr. Ruyi Feng	RS5: Urban spatial data analytics - 5 Chairs: Prof. Huiping Liu, Dr. Zuopeng Xiao	TS5: Disaster Monitoring and Damage Early Warning in Urban Area Chairs: Prof. Jie Yang, Dr. Lingli Zhao
Aug 23 AM	S6 10:20 – 12:00 (100min)	IS2: Smart city development in Hong Kong Chair: Prof. Wenzhong Shi	RS1: Urban Science and Systems - 4 Chairs: Dr. Ding Ma	RS6: Smart Cities Solutions - 2 Chairs: Dr. Wei Ma	TS2: Unraveling Urban Dynamic for Smart Cities - 1 Chairs: Prof. Min Chen, Dr. Teng Zhong	RS2: Urban Sensing for Smart City - 3 Chairs: Prof. Xiaomei Yang, Dr. Xiaokang Zhang	RS5: Urban spatial data analytics - 6 Chairs: Dr. Pengyuan Liu, Dr. Xingang Zhou	RS7: Emerging Topics in Smart City Development - 2 Chairs: Dr. Cui Guo
Aug 23 PM	S7 14:00 – 16:00 (120min)		RS1: Urban Science and Systems - 5 Chairs: Dr. Junqing Tang	RS6: Smart Cities Solutions - 3 Chairs: Prof. Xiao Fu, Dr. Hui Cao	TS2: Unraveling Urban Dynamic for Smart Cities - 2 Chairs: Prof. Min Chen, Dr. Teng Zhong	RS2: Urban Sensing for Smart City - 4 Chairs: Dr. Xiaojiong Qin	RS5: Urban spatial data analytics - 7 Chairs: Dr. Chao Yang, Dr. Pengfei Chen	

Invited Sessions

- 1) Technology Innovation in Smart Cities (S1: Room Z209; S2, S3, S4: Room Z207)
- 2) Smart City Development in Hong Kong (S6: Room Z209)
- 3) Spatio-temporal Information for GBA Synergistic Development (S2: Room Z209)
- 4) Dialogue with International Journal Editors (S3: Room Z205)
- 5) Advancement in Smart Cities Research in the GBA (S3: Room Z209)

Theme Sessions

- 1) GeoAI for Human Mobility (S3, S4, S5: Room Z211)
- 2) Unraveling Urban Dynamic for Smart Cities (S6, S7: Room Z205)
- 3) High-Definition Maps for Autonomous Vehicles (S1, S2: Room Z207)
- 4) Urban AI for Sustainable Cities and Society (S1, S2: Room Z205)
- 5) Disaster Monitoring and Damage Early Warning in Urban Area (S5: Room Z406)
- 6) Diagnosing Cities for Human Health and Emotional Wellbeing (S4, S5: Room Z205)
- 7) Urbanization Monitoring with Big Earth Data (S3, S4, S5: Room Z414)
- 8) Energy Networks and Urban Environment (S2: Room Z406)

Regular Sessions

- 1) Urban Science and Systems (S1, S2, S5, S6, S7: Room Z211)
- 2) Urban Sensing for Smart City (S1, S2, S6, S7: Room Z414)
- 3) Urban Big Data Infrastructure for Smart City (S3, S4: Room Z406)
- 4) Urban Computing for Smart City (S4, S5: Room Z209)
- 5) Urban Spatial Data Analytics (S1, S2, S3, S4, S5, S6, S7: Room Z409)
- 6) Smart Cities Solutions (S5, S6, S7: Room Z207)
- 7) Emerging Topics in Smart City Development (S1, S6: Room Z406)

**Global Smart Cities Summit cum
The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)
20 – 23 August 2023
Programme for Parallel Sessions**

Website: <https://www.isocui.org/icui2023/> Email: info@icui2023.com

Theme & Regular Sessions: Oral Presentations (15-min Talk, 5-min Q&A)

Session Time	Session Name	Title & Author(s)
Aug 21 S1: 14:30 – 16:10 (Parallel Sessions)	Urban AI for Sustainable Cities and Society - 1 (Room Z205)	Application of time-series analysis to urban climate change assessment. Author(s): Huimin Liu, Qingming Zhan and Miao Li
		Analysis of Carbon Emission Reduction Effects by Future Mobility Adaptation Scenarios Using Prompt Engineering Generative AI. Author(s): Junhyeon Kweon, Taewoo Kim, Minseo Kim, Yeseong Lee, Seungbin Im, Jayyeon Chun and Sugie Lee
		Where is Huaqiangbei? A Vague Scope Study of Urban Business District Based on the Retrieved Results of POIs. Author(s): Yunfei Ma, Qiqi Deng, Yining Meng and Yongxi Gong
		Cost-effective Sensor Placement for Urban Sewage Pandemic Surveillance: a Case Study in Hong Kong. Author(s): Sunyu Wang, Ke Xu and Yulun Zhou
		LFEA-Net: Semantic Segmentation for Urban Point Cloud Scene. Author(s): Ziyin Zeng, Jian Zhou, Bijun Li, Youchen Tang and Maosheng Yan
	High-Definition Maps for Autonomous Vehicles - 1 (Room Z207)	High-definition "human-vehicle-road-map" model for automatic vehicle. Author(s): Shen Ying, Yuewen Jiang, Jingnan Liu and Chi Guo
		WHU-Road3D: A benchmark dataset for large-scale detailed road surface mapping. Author(s): Xiaoxin Mi, Bisheng Yang, Yuhao Li, Pangyin Li, Chong Liu and Zhen Dong
		Digital Twin System of LiDAR SLAM for Mobile Mapping System. Author(s): Zhihong Xu, Ruofei Zhong, Chi Chen, Donghai Xie, Xingyu Qi, Genyi Wan
		Self-adapting Real-time Lane-Scale Map Matching with Extended Hidden Markov Model. Author(s): Shenghua Chen, An Luo, Yunpeng Liu, Yunhong Shao and Wei Zhao
	Technology Innovation in Smart Cities – 1 (Room Z209)	Semi-Automated Production and Validation Process of HD Maps for Autonomous Vehicles. Author(s): Yi-Feng Chang, Yen-En Huang, Kai-Wei Chiang, Meng-Lun Tsai, Pei-Ling Li, Sean Lin and Hatem Darweesh
14:30-16:00 Right here, Right now: Hexagon's Digital & Smart Cty Solutions by Hexagon Leica Geosystems		

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

Urban Science and Systems - 1 (Room Z211)	Trajectory-driven urban mobility pattern discovery and route planning. Author(s): Wei Tu
	Identifying global ghost cities based on urban vitality with multi-source data. Author(s): Ying Long and Yecheng Zhang
	The Spatial Evolution Law and Driving Factors of Gradient Expansion of Chinese Cities and Towns. Author(s): Yuefeng Jiang and Liang Zhou
	Exploring Variabilities of Multi-Week Activity-Travel Patterns: A Deep Clustering Approach. Author(s): Xiao Fu and Zhoujian Yao
	Intra-urban Heterogeneities of Agglomerative Industrial Activities: Spatial-functional Evidence from the China's Greater Bay Area. Author(s): Zidong Yu and Xintao Liu
Emerging Topics in Smart City Development - 1 (Room Z406)	Identifying the built environment factors for revitalizing the vitality of commercial districts. Author(s): Chendi Yang, Rui Ma and Siu Ming Lo
	A quantitative study of the effectiveness of industrial metaverse construction - an example of a smart site application scenario. Author(s): Zeyuan Dong
	Satellite-based urban scale real-time PM2.5 and ozone retrieval using improved deep learning models. Author(s): Xing Yan
	Intergenerational and Multi-scenario Mobile Landscapes: Spatiotemporal Patterns of Human Activities in Different Age Groups under Normal and Abnormal Scenes. Author(s): Yichen Xu, Miao Shen and Feng Zhang
	Three-dimensional Transportation Smart City - An Exploration of Pilot Demonstration Zone in China. Author(s): Xiang Li, Cheng Shen, Hua Zheng and Yuzhu Rao
Urban Spatial Data Analytics - 1 (Room Z409)	World Cup reshaped the pattern of urban green space of Qatar. Author(s): Xi Wang and Liang Zhou
	Hierarchy and spatial heterogeneity of metropolitan area expansion and land surface temperature evolution: A twin city perspective. Author(s): Mengqiu Cui and Liang Zhou
	Contribution of natural and social factors to land surface temperature within urban local climate zones in different climate zones around the globe. Author(s): Liping Zhang and Liang Zhou
	Transformer-based continuous semantic change detection. Author(s): Haixu He, Jining Yan and Lizhe Wang
	Representing Spatial Codes with POI Data: An Effective Mean of Decoding Social Space. Author(s): Jin Zeng and Yang Yue
Urban Sensing for Smart City - 1 (Room Z414)	A prior knowledge guided deep learning method for building extraction from high-resolution remote sensing images. Author(s): Ming Hao, Shilin Chen, Huijing Lin, Hua Zhang and Nanshan Zheng
	Quantifying Urban Colors and Emotions with Street-view Image and Deep learning. Author(s): Dingyiqi Li, Lv Zeng, Tongxin Liao, Chengji Zhu and Wei Tu
	Enhanced Indoor Positioning through Human-Robot Collaboration. Author(s): Baoding Zhou, MengyuanTang, Xuanke Zhong, Xu Liu and Qingquan

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		<p>Knowledge transfer with limited labels in urban remote sensing semantic segmentation. Author(s): Xiaokang Zhang and Weikang Yu</p> <p>An image captioning method with improved attention for road states of the urban. Author(s): Fanyu Liu, Yaohua Yi, Yinkai Liang and Ziwei Tang</p>
<p>Aug 21 S2: 16:30 – 18:30 (Parallel Sessions)</p>	<p>Urban AI for Sustainable Cities and Society - 2 (Room Z205)</p>	<p>Urban Computing Cyberinfrastructure for Visualizing Human Sentiment and Point-of-Interest Information for Improving Situational Awareness. Author(s): Diya Li and Zhe Zhang</p>
		<p>Construction of an Agricultural Local Product Knowledge Graph System for Urban and Rural Communities. Author(s): Cang Qin, Lin Peng, Zhaobo Li, Lina Yang and Wenyue Zhang</p>
		<p>Neighborhood Effects on Public Sentiment: A Case Study Based on ChatGPT and Explainable Neural Network. Author(s): Yuye Zhou, Yiwen Wang, Yang Ju, Jiangang Xu and Minwei Kong</p>
		<p>From prediction to interpretation: progress of sustainable built environment studies. Author(s): Chao Liu</p>
		<p>The Pathway of Urban Planning AI: From Planning Support to Plan-Making. Author(s): Zhong-Ren Peng</p>
		<p>Analysing Tourists' Choices between Rental Cars and Bus Transit for Intra-city Travel in Jeju Island, South Korea. Author(s): Ke Mai and Yang Xu</p>
		<p>High-Definition Maps for Autonomous Vehicles - 2 & Technology Innovation in Smart Cities – 2 (Room Z207)</p>
<p>Spatio-temporal Information for GBA Synergistic Development (Room Z209)</p>	<ul style="list-style-type: none"> • 16:30-16:45: Geographical Technology for Synergistic Development in the Guangdong - Hong Kong - Macao Greater Bay Area (GBA). Author(s): Zhengdong Huang • 16:45-17:00: Measurement and Evaluation of the Synergistic Development in the GBA. Author(s): Changjian Wang • 17:00-17:15: Cross-border Spatial Data Fusion in the GBA. Author(s): Anshu Zhang • 17:15-17:30: The Study on the Knowledge Mapping and Synergistic development of Industrial Clusters in the GBA. Author(s): Yu Chen • 17:30-17:45: Spatial Synergistic Simulation of Land Use - Population - Economy in the GBA. Author(s): Wei Tu • 17:45-18:00: Collaborative Decision Making Platform and Applications in the GBA. Author(s): Yuelong Su 	

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		<ul style="list-style-type: none"> 18:00-18:15: New Infrastructure: A New Proposition for the Synergistic Development of the GBA in the Information Era. Author(s): Yuyao Ye
Urban Science and Systems - 2 (Room Z211)		Enriching the Semantics of CityJSON Road Objects with OpenStreetMap. Author(s): Rui Ma, Chendi Yang and Xin Li
		Spatial Network Analysis and Optimization of Coal-Related Industries in Resource Exhausted Cities. Author(s): Xiaotong Feng, Min Tan, Hua Zhang, Jihong Dong, Thomas Kienberger and Hongtao Shi
		An Overview of Pre-design Evaluation and Application System for Urban Design based on the RDF Framework. Author(s): Xinzhe Wang
		LiDARPro: Intelligent Geographic Scene and Entity Reconstruction Solutions for 3D Real Scene. Author(s): Yongjun Zhang and Xinyi Liu
		The Study on the Construction of the City Information Modeling Platform (CIM platform) Empowering the Entire Process of Planning and Construction Control.. Author(s): Yihui Wu, Shenghao Zhuo and Hui Wang
Energy networks and urban environment (Room Z406)		Further classification of large-scale façade materials obtained from street-view images. Author(s): Fan Xu and Man Sing Wong
		A study on the quality of the main entrance of the Chengdu industrial heritage creative industry park under the background of public participation. Author(s): Kun Wang, Yan Zhu, Juan Ding and Yinan Li
		The effects of dynamic urban thermal environment on floating photovoltaic electricity generation: A case study in Singapore. Author(s): Ziyi Huang, Rui Zhu and Linlin You
		Integrating Photovoltaic Power Generation in Landfills: A Feasibility Analysis for Economic and Environmental Benefits. Author(s): Zhang Zichen, Zhang Haoran and Yu Qing
		Assessing Vehicle-to-Grid Potential: A Comprehensive Study on Electric Taxis, Buses, and Private Vehicles in Shanghai. Author(s): Yu Qing, Zhang Haoran and Zhang Zichen
		An urban scale optimization of rooftop photovoltaic charging of electric vehicles. Author(s): Nanfan Ji, Rui Zhu and Linlin You
Urban Spatial Data Analytics - 2 (Room Z409)		Based on Remote Sensing Multi-level dynamic analysis of urban landscape pattern. Author(s): Xiaomei Yang, Yuyang Cui and Zhi Li
		Detection and spatial heterogeneity analysis of terrain fragmentation on the Loess Plateau. Author(s): Yong Dong and Liang Zhou
		Measurement and analysis of fragmentation and connectivity of green belts in Chinese megacities from a resilience perspective: A case study of Beijing, Xi'an and Chengdu. Author(s): Yangchun Gong and Liang Zhou
		cuSTSG: an Enhanced Spatial–Temporal Savitzky–Golay Method for Reconstructing High-Quality NDVI Time Series. Author(s): Xue Yang, Jin Chen and Qingfeng Guan

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		<p>Knowledge and topology: A two layer spatially dependent graph neural networks to identify urban functions with time-series street view image. Author(s): Yan Zhang and Nengcheng Chen</p> <p>Research on economic value estimation and spatial-temporal variation of typical urban eco-civilization in the Yangtze River Economic Belt. Author(s): Anni Wang, Penglin Zhang, Yuqi Tang, Jing Yang and Feng Yuan</p>
	Urban Sensing for Smart City - 2 (Room Z414)	<p>Scene Text Image Super-Resolution Fusing Semantic Segmentation and Content Perceptual. Author(s): Ying Zhou and Yaohua Yi</p> <p>Evaluation of BDS-3 positioning performance with broadcast ephemeris. Author(s): Mengni Zhang, Wenyu Guo, Cheng Yang, Zhouzheng Gao and Zhuo Zhang</p> <p>Analysis of the External Attractiveness of Shanghai Urban Functions Based on the Travel Characteristics. Author(s): Peiling Li, Yuhan Yu, Zeyu Wang and Feng Zhang</p> <p>Initial Evaluation of Indoor Pseudolite Real-Time Positioning Involving Only the Smartphone Receiver. Author(s): Xiangchen Lu, Liang Chen and Nan Shen</p> <p>Research on Urban Green Space Distribution of Multi-Perspective. Author(s): Jiayu Yan and Huiping Liu</p> <p>Research on the Strategy of Establishing a "Cool Corridor" of City Block Based on Mobile Pedestrian Perception. Author(s): Tingting Liu, Xiaoyi Wen, Zhijing Liu, Zijing Wang and Xuening Wang</p>
Aug 22 S3: 10:20 – 12:00 (Parallel Sessions)	Dialogue with International Journal Editors (Room Z205)	<ul style="list-style-type: none"> 10:20-10:30: Prof Michael BATTY, <i>Environment and Planning B: Urban Analytics and City Science</i> 10:30-10:40: Prof Xiaoli DING, <i>Remote Sensing Applications: Society and Environment</i> 10:40-10:50: Prof Jianya GONG, <i>Journal of Geodesy and Geoinformation Science</i> 10:50-11:00: Prof Bo HUANG, <i>International Journal of Geographical Information Science</i> 11:00-11:10: Prof Bin JIANG, <i>Computational Urban Science</i> 11:10-11:20: Prof Ying LONG, <i>Transactions in Urban Data, Science, and Technology</i> 11:20-11:30: Prof Wenzhong SHI, <i>Urban Informatics</i> 11:30-11:40: Prof Donggen WANG, <i>Travel Behaviour and Society</i> 11:40-11:50: Prof Jinyue YAN, <i>Nexus</i> 11:50-12:00: Discussion
	Technology Innovation in Smart Cities – 3 (Room Z207)	<ul style="list-style-type: none"> 10:20-10:35: Yau Lee Holdings Limited 10:35-10:50: Augur Intelligence Technology Limited 10:50-11:05: Smart Space Technologies Limited 11:05-11:20: JiangSu XingYue Surveying & Mapping Technology Co., LTD 11:20-11:35: ATAL Engineering Group 11:35-11:50: China ARSC (HK) Limited
	Advancement in Smart Cities Research in the GBA (Room Z209)	<ul style="list-style-type: none"> 10:20-10:30: Prof. Wenzhong SHI (Director), Otto Poon Charitable Foundation Smart Cities Research Institute, The Hong Kong Polytechnic University 10:30-10:40: Prof. Shaodan MA (Associate Director), State Key Laboratory of Internet of Things for Smart City, University of Macau 10:40-10:50: Prof. Zhengdong HUANG (Associate Director), Research Institute for Smart Cities, Shenzhen University

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

	<ul style="list-style-type: none"> 10:50-11:00: Prof. Jack Chin Pang CHENG (Associate Director), GREAT Smart Cities Institute, Hong Kong University of Science and Technology 11:00-11:10: Dr. Tianren YANG (Assistant Head), Department of Urban Planning and Design, The University of Hong Kong 11:10-11:20: Dr. Weijian RUAN (General Manager of R&D Department), Smart City Research Institute of China Electronics Technology Group Corporation 11:20-11:30: Mr. Hao XU (Director of Solutions Department), Shenzhen Smart City Technology Development Group Co., Ltd. 11:30-11:40: Mr. Jianyuan MA (Sales Director), Augur Intelligence Technology Limited 11:40-12:00: Discussion
GeoAI for Human Mobility - 1 (Room Z211)	Act2Loc: A Trajectory Generation Method by Combining Machine Learning and Mechanistic model. Author(s): Xin Jin, Kang Liu and Zhongcai Cao
	Analysis of Spatio-temporal Co-occurrence Phenomena and Land Use Function Interaction Based on Frequent Patterns. Author(s): Jun Yong Ma, Rui Jin and Yi Liang Wan
	Comprehensive Evaluation of Job Accessibility Based on Public Transit Using a Graph Convolutional Network Clustering. Author(s): Meihan Jin, Yongxi Gong and Leiyu Liu
	The effects of rail transit on land use changes considering spatial heterogeneity of rail transit accessibility in a bike-sharing context. Author(s): Xingang Zhou and Zhouye Zhao
	CityWise: A Novel Approach for Urban Data Analytics and Data Panel using Large Language Models. Author(s): Xuan Li, Sugie Lee and Steven Jige Quan
Urban Big Data Infrastructure for Smart City - 1 (Room Z406)	Smart City Ontology Framework for Urban Data Integration and Governance Applications. Author(s): Xiaolong He and Xi Kuai
	Spatio-Temporal Data Fusion Techniques for Modeling Digital Twin City. Author(s): Yuejin Li, Shengpeng Chen, Kai Hwang, Xiaoqiang Ji, Zhen Lei, Yi Zhu, Feng Ye and Mengjun Liu
	Construction and Conversion of Physical Information Model and Legal Property Information Model for Apartment Buildings. Author(s): Yunfei Shi, Lingling Zhang and Xipeng Gao
	Fast Site Selection of 5G Base Station Considering Signal Propagation Loss Based on a Linear Programming Model. Author(s): Yuquan Sun, Lanruo Wu, Lianna He and Zhuning Wang
	Exploring the Potential of Sharing Private Charging Posts: A Data-Driven Micro-simulation Approach. Author(s): Xiong Yang, Jiaying Liu, Chengxiang Zhuge, Andrew Tin Chak Wong and Pinxi Wang
Urban Spatial Data Analytics - 3 (Room Z409)	Impact of land use change on net primary productivity in Guangdong Province. Author(s): Jiayun Yan, Jiangping Chen, Zijian Li, Ying Qi and Lizhen Lei
	Simulation of possible future urban development under consideration of the extension of the urban rapid transit network on the example of the metropolitan region of Cologne, Germany.. Author(s): Mirko Blinn, Anne Fischer, Sven Lautenbach and Theo Kötter
	Calculation of ecological value of cultivated land based on geographical weighted regression model: A case study in Guangdong, China.

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		Author(s): Mengyan Zhu, Jiangpin Chen, Bing Zhang, Yilu Zhao, Gang Xu and Shaolan Zhen
		Research on Remote Sensing Estimation and Spatial Distribution of Pinus Densiflora Single Wood Biomass. Author(s): Fei Gao, Jiangping Chen, Chen Rao, Ying Qi and Huibin Li
		A generalised flow-based 2SFCA method for evaluating hospital accessibility: a case study in Wuhan. Author(s): Pengfei Chen and Yi Jian
	Urbanization Monitoring with Big Earth Data - 1 (Room Z414)	Simulation of the land use changes and potential expanding boundary of a typical village within the heritage site of Honghe Hani Rice Terraces based on the Markov-FLUS model. Author(s): Yuanmei Jiao
		Fine-grained building attribute mapping based on deep learning and a satellite-to-street view matching method. Author(s): Weijia Li, Dairong Chen, Jinhua Yu and Juepeng Zheng
		A Density-Peak-Based Clustering Method for Multiple Densities Dataset. Author(s): Zhicheng Shi
		MMRSC: A Multi-Modal Dataset for Remote Sensing Image Scene Classification. Author(s): Guoqiang He, Jie Li and Menghui Jiang
		Mobility-based spatial sampling improves the efficiency of detecting emerging infections. Author(s): Die Zhang, Yong Ge and Shengjie Lai
Aug 22 S4: 14:30 – 16:10 (Parallel Sessions)	Diagnosing Cities for Human Health and Emotional Wellbeing – 1 (Room Z205)	Nudges for Urban Regeneration: Environmental Cues Suggested by Eye-Tracking Evidences. Author(s): Zheng Chen
		Structural beauty as an effective means of guiding sustainable urban planning. Author(s): Bin Jiang
		Rethinking Urban Centre Dynamics: Exploration of Infrastructure and Socioeconomic Dynamics through Head/Tail Breaks. Author(s): Yue Li and Jianqi Li
		Mapping China’s ICT Service Industry Geographies: Spatio-temporal Distribution and Evolution at the Provincial Level. Author(s): Weixuan Chen
		Study on Public Preferences of Typical Plant Communities in Urban Parks: A Case Study of Hefei Ring Park. Author(s): Yan Zhu, Kun Wang, Yinan Li and Juan Ding
	Technology Innovation in Smart Cities – 4 (Room Z207)	<ul style="list-style-type: none"> 14:30-14:45: Euro Asia Construction Engineering Limited 14:45-15:00: Esri China (Hong Kong) Limited 15:00-15:15: GeoSys Hong Kong Limited 15:15-15:30: Research Institute for Smart Cities, Shenzhen University 15:30-15:45: Sichuan Zhijie Future Technology Group Co., Ltd.
	Urban Computing for Smart City - 1 (Room Z209)	Modeling individual travel behavior in the real-time context: An space-time prism approach with isochronous circle. Author(s): Zuopeng Xiao and Jingying Liao
		A user-friendly assessment of six commonly used urban growth models. Author(s): Yuzhi Zhang and Jun Yang
		An Entity Recognition and Semantic Clustering of City Complaint hotline Data for uncovering urban hot problem. Author(s): Tianyou Chu, Yumin Chen, Jianshen Ma, Guodong Chen, Wankun Min and Yuejun Chen

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		Remote sensing and social media data fusion based on two stream transformer coupled self-attention model for urban region function classification. Author(s): Sun Ruiyang, Su Xin and Yuan Qiangqiang
GeoAI for Human Mobility - 2 (Room Z211)		Integrating smart card records and dockless bike-sharing data to understand the effect of the built environment on cycling as a feeder mode for metro trips. Author(s): Yuan Zhang and Yongxi Gong
		Spatiotemporal patterns of human mobility during the COVID-19 pandemic in China. Author(s): Jingjing Liu, Lei Xu and Nengcheng Chen
		ST-LRTC: A Spatio-Temporal analysis empowered Low-Rank Tensor Completion method for missing traffic data imputation. Author(s): Zilong Zhao, Luliang Tang, Mengyuan Fang, Xue Yang and Qingquan Li
		Sensing Urban Traffics: A Graph-based Human-centric GeoAI approach for Traffic Accidents Prediction using Crowdsourcing Street View Images. Author(s): Pengyuan Liu, Winston Yap, Yujun Hou and Filip Biljecki
		Electrifying on-demand mobility with trajectory analytics and deep reinforcement learning. Author(s): Xiana Chen, Shengao Yi and Tianhong Zhao
	Urban Big Data Infrastructure for Smart City - 2 (Room Z406)	
		Research on data management and analysis of BIM technology. Author(s): Zhaofeng Yang
		Automatic generation algorithm for indoor floorplans based on point clouds. Author(s): Yunlin Tu and John Shi
		A Data-Driven Approach to Deploying Wireless Charging Lanes on a Large-Scale Electrified Bus Network. Author(s): Shiqi Wang, Yuze Li, Anthony Chen and Chengxiang Zhuge
Urban Spatial Data Analytics - 4 (Room Z409)		PM2.5 Exposure Disparities Among Different Populations in High Mobility Urban Areas: A Case Study of Beijing, Shanghai, and Shenzhen. Author(s): Ma Zhifeng, Zhong Leiyang and Xia Jizhe
		Urban expansion analysis based on multi-source geographic data: A case study of Wuhan City. Author(s): Tao Xie, Ruyi Feng and Lizhe Wang
		Analyzing spatial relationships between built environment and urban vitality at multi-scale. Author(s): Luxiao Cheng
		A basic Graph Convolutional Network with Attention. Author(s): Zhao Chen, Yaohua Yi and Hui Jin
		Cross-modal fusion and graph attention-based segmentation model for mapping of mining land covers at fine scale. Author(s): Xianju Li and Tianyi Li
Urbanization Monitoring with Big Earth Data - 2 (Room Z414)		Scope Identification and Planning Evaluation of Urban Centers from the Perspective of Spatial Supply and Demand. Author(s): Yin Dou
		Analysis of the Evolution Characteristics and Production Relations of Industrial Agglomeration Areas: A Case Study of the Electronic Information Industry Cluster in the Pearl River Delta. Author(s): Aiyuan Lin

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		RFE-LinkNet: LinkNet with Receptive Field Enhancement for Road Extraction from High Spatial Resolution Imagery. Author(s): Hua Zhang and Hua Zhao
		Continuous Semantic Change Detection Based on Transformer. Author(s): Haixu He, Jining Yan and Lizhe Wang
Aug 22 S5: 16:30 – 18:30 (Parallel Sessions)	Diagnosing Cities for Human Health and Emotional Wellbeing – 2 (Room Z205)	Quantitative evaluation of urban 3-30-300 green exposure and its impact on human health. Author(s): Yicheng Zheng, Tao Lin and Nicholas A.S. Hamm
		Understanding the relationship between city perceptions and children’s mental health in Hong Kong using GeoAI. Author(s): Wei Yuan, Xuefei Qin, Xibin Jiang and Zhuoni Zhang
		Revealing the spatial co-occurrence patterns of multi-emotions from social media data. Author(s): Dongyang Wang, Yandong Wang, Xiaokang Fu, Mingxuan Dou, Shihai Dong and Duocai Zhang
		Exploring the Spatially Heterogeneous Effect of Built Environment on Shared Bike Riding Using GWR: A Case Study of Longgang, Shenzhen. Author(s): Jiayi Jin and Yongxi Gong
		Incorporating fine-grained spatial heterogeneity to predict the local-scale infections and the superspreading areas of pandemic: A case study of COVID-19 in Hong Kong. Author(s): Ningyezi Peng and Xintao Liu
	Smart Cities Solutions - 1 (Room Z207)	A coupling model for measuring the substitution of subway for bus during snow weather: a case study of Shenyang, China. Author(s): Jie Liu and Shaolei Wu
		Construction and Application Research of Economic Evaluation System Model in Urban Renewal Project—Taking Zhuhai City Urban Renewal Application as an Example. Author(s): Jidong Liu and Zili Zhao
		Study on the Digital Empowerment of Shanghai Huangpu River for Tourism Quality Improvement. Author(s): Jia Tang, Jingwei Li, Rui Liu, Mijun Zou and Jia Song
		An ESG-centric Exploration of Factors Influencing Urban Economies within the 15-Minute Living Circle. Author(s): Jingxue Xie and Jiaqi Song
		Modeling the Impact of Chinese New Intervention Measures on COVID-19 Transmission: A Study on the Omicron B.1.1.529 Outbreak in Shenzhen, China. Author(s): Taicheng Li, Jizhe Xia, Zhong Leiyang and Ying Zhou
Anomaly Detection of InSAR Time-series Deformation based on Generative Adversarial Networks. Author(s): Zhichao Deng, Siting Xiong, Bochen Zhang and Qingquan Li		
Urban Computing for Smart City - 2 (Room Z209)	A graph-based multimodal framework to predict gentrification. Author(s): Javad Eshtiyagh, Baotong Zhang, Yujing Sun, Linhui Wu and Zhao Wang	
	A Feature-hybrid Network for Satellite Image Stereo-matching. Author(s): Zhi Zheng and Peifeng Ma	
	A machine learning-based surrogate model for urban inundation modeling. Author(s): Qiang Yu and Shuo Wang	
	Exploring the association between built environment and moving behaviors using street-view imagery. Author(s): Ding Ma, Biao He, Chengyue Zhang and Wei Zhu	

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

GeoAI for Human Mobility - 3 & Urban Science and Systems 3 (Room Z211)	A multi-activity view of intra-urban travel networks: a case study of Beijing. Author(s): Jian Liu, Bin Meng and Xintao Liu
	A cross-scale representation of tourist activity space. Author(s): Xinyue Chen and Yang Xu
	City Spatio-Temporal Sensing Base Station: A cyber-physical infrastructure for pervasive sensing in smart city. Author(s): Dong Chen, Nengcheng Chen, Xiang Zhang, Zeqiang Chen, Wenying Du, Yingbing Liu and Gaoyun Shen
	To share or not to share? Revealing determinants of individuals' willingness to share rides through a big data approach. Author(s): Guan Huang, Ting Lian, Anthony Gar On Yeh and Zhan Zhao
	Data-driven refined modeling of street trees for mobile laser scanning point clouds. Author(s): Jintao Li, Hangbin Wu, Yanyi Li, Zhihua Xiao and Yuanhang Kong
Disaster Monitoring and Damage Early Warning in Urban Area (Room Z406)	Empowering Urban Wildfire Burnt Area Detection with Deep Learning. Author(s): Tang Sui, Mingda Wu, Meiliu Wu and Qunying Huang
	The rapid monitoring of flood disaster over urban area using time series SAR images. Author(s): Lingli Zhao, Haozhong Wang, Jie Yang, Weidong Sun, Lei Shi and Pingxiang Li
	Revealing Multi-Scale Deformation of Shapu Metro Hub Caused by Underground Space Exploitation Combining InSAR and On-site Measurements. Author(s): Xiaoqiong Qin, Chengyu Hong, Yaxuan Zhang, Linfu Xie and Xiangsheng Chen
	Assessing Flash Flood Susceptibility Based on K-means and AdaBoost Models. Author(s): Zheng Guan and Xiaoxiang Zhang
	Rapid Monitoring of Flood Events using Remote Sensing Cloud Platforms. Author(s): Dizhou Guo and Wenzhong Shi
Urban Spatial Data Analytics - 5 (Room Z409)	Adaptive Fusion Model of Object-Based Multi-Channel Graph Convolutional Networks for Fine Land Cover Classification. Author(s): Xianju Li and Zihao Li
	Analyzing Neighborhood Environment Factors of Daily Travel Distance by Age Groups using the Mobile Phone-based Big Data. Author(s): Yejin Kim and Sugie Lee
	Evaluating the change of urban land use efficiency based on population-land-economy dimension—A case study of 35 main cities in China. Author(s): Xingrui Li, Zixuan Pei and Qiang Li
	Determining Factors of Land Use Land Cover Change in a Mid-sized City of the Seoul Metropolitan Area. Author(s): Yein Nam, Sugie Lee and Changyeon Lee
	Analysis of spatio-temporal movement patterns of one-way shared electric vehicles: A case study of Shanghai. Author(s): Banshao Hu and Junqing Tang
Urbanization Monitoring with Big Earth Data - 3 (Room Z414)	The Feasibility of 5G Positioning with Multi-beam Signals in Urban Canyon. Author(s): Ye Su and Liang Chen
	Understanding changing public transit travel patterns of urban visitors during COVID-19: A multi-stage study. Author(s): Yuqian Lin and Yang Xu

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

		Measuring the correlation between urban carbon emissions and heat island: evidence from Shenzhen, China. Author(s): Lin Jiang, Wei Zhu, Wuyang Hong and Yuxia Kuang
Aug 23 S6: 10:20 – 12:00 (Parallel Sessions)	Unraveling Urban Dynamic for Smart Cities - 1 (Room Z205)	Extraction of Urban Roof Information Using Remote Sensing Imagery based on DeeplabV3+ and Segment Anything Models: A Case Study in Shenzhen. Author(s): Zhuoxi Li and Bochen Zhang
		Socio-spatial Differentiation, Location and Mobility from an Aggregated Perspective: A Case Study of Shenzhen. Author(s): Run Shi and Anthony Gar On Yeh
		Understanding the long-term potentials for land value uplift in new subsidiary centres: a spatial equilibrium model. Author(s): Tianren Yang
		Unraveling seasonal changes of street greenery using multi-temporal street-view images. Author(s): Teng Zhong, Yuqi Han, Anthony G.O. Yeh and Min Chen
	Smart Cities Solutions - 2 (Room Z207)	Urban Heat Vulnerability Analysis Using a Novel Classification System of Local Climate Zone. Author(s): Siyeon Park and Sugie Lee
		Food Deserts and COVID-19: Utilization of Location-Based Smartphone Mobility Data in New York City. Author(s): Devina Widya Putri and Sugie Lee
		A semantic segmentation dataset of rich window view contents in high-rise, high-density cities based on photorealistic City Information Models. Author(s): Maosu Li, Fan Xue and Anthony Gar On Yeh
		Problems and Suggestions on Smart City Construction in Wuhan. Author(s): Huali Xiang and Jun Yang
		Spatial and Temporal Analysis of Urban Carbon Neutrality and Shrinkage in China: Implications for Environmental Challenges. Author(s): Shuo Peng
	Smart City Development in Hong Kong (Room Z209)	<ul style="list-style-type: none"> I&T Blueprint and smart city development in Hong Kong, by Cari Wu, <i>Office of the Government Chief Information Officer, The Government of the HKSAR</i> Development of Common Spatial Data Infrastructure (CSDI), by Amy Wong, <i>Development Bureau, The Government of the HKSAR</i> TBC, by Alex Chu, <i>Lands Department, The Government of the HKSAR</i>
	Urban Science and Systems - 4 (Room Z211)	Automatic extraction and modeling of tunnel components based on mobile laser scanning data. Author(s): Shida Wang and Hangbin Wu
		Indoor staircase space reconstruction based on local-global combined optimization from point cloud. Author(s): Junyi Wei and Hangbin Wu
		Estimating experienced the daily dynamics of urban polycentric structure in Chinese cities using large-scale human locating-request data. Author(s): Nan Wang
		City Network Connections of Greater Shanghai Metropolitan Area Based on Baidu Migration Data. Author(s): Bin Zhuge, Kaike Li, Mengwei Chen, Juncheng Hong and Siyi Chen
Multi-Systems Engineering Complexity in Smart Community Development: Evidence from China and USA. Author(s): Yuan Lai		

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

	Emerging Topics in Smart City Development - 2 (Room Z406)	Co-benefits of floating solar power for air pollution and carbon emission reductions to aid mining cities transition. Author(s): Qiping Wu and Zhongbin Li	
		Health effects of multiple air pollutants on renal health in children and adolescents. Author(s): Cui Guo	
	Urban Spatial Data Analytics - 6 (Room Z409)	Evaluating the improvement of service availability for e-hailing in Hong Kong: a data-driven approach for spatio-temporal analysis. Author(s): Xinyu Wang, Mingxi Li and Wei Ma	
		Exploring the Impact of Built environment on Bike-sharing Ridership in Spatio-Temporal Dimension: A Case Study in Nanshan, Shenzhen. Author(s): Zou Shanlai, Li Xiaoming, Wang Weixi, Hong Wuyang, Ma Ding and Tang Shengjun	
		Research on Key Industrial Spatial Evolution and Spatial Interaction in Shenzhen. Author(s): Chen Yirun	
	Urban Sensing for Smart City - 3 (Room Z414)	Subpixel change detection based on abundance optimization for remote sensing images with fine spatial and temporal resolutions. Author(s): Zhenxuan Li	
		Indoor Positioning with Multi-beam CSI of Commercial 5G Signals. Author(s): Xin Zhou, Liang Chen and Yanlin Ruan	
		Low-cost online real-time surveying and mapping technology of unmanned aerial vehicles. Author(s): Xiongwu Xiao, Deren Li, Zhenfeng Shao, Bingxuan Guo, Huayi Wu and Jianya Gong	
		OmniCity: omnipotent city understanding with multi-level and multi-view images. Author(s): Weijia Li and Jinhua Yu	
		Building instance segmentation of street view imagery using large deep learning models. Author(s): Yizhen Yan, Bo Huang, Weixi Wang and Renzhong Guo	
	Aug 23 S7: 14:00 – 16:00 (Parallel Sessions)	Unraveling Urban Dynamic for Smart Cities - 2 (Room Z205)	Urban Traffic Data Model Based on Multilayer Graph. Author(s): Feng Yuan, Penglin Zhang, Anni Wang, Jing Yang and Yaqing Zhu
			Heterogeneous effects of COVID-19 and policy responses on consumer spending in a tourism city: A joint investigation of urban residents and inbound travelers. Author(s): Mengyao Ren and Yang Xu
Smart Cities Solutions - 3 (Room Z207)	A Multiview Spatiotemporal Model for Bus Travel Demand Prediction using Graph Neural Networks. Author(s): Tianhong Zhao, Zhengdong Huang and Wei Tu		
	Wise choice of showerheads: understanding the impacts of shower water spray patterns on heat transfer coefficient between water and human skin. Author(s): Dadi Zhang, Kwok-Wai Mui and Ling-Tim Wong		
	Does neighbourhood environment matter for people-centric street transition? An associational study of Covid-19 pandemic-induced street experiments. Author(s): Jianting Zhao and Guibo Sun		
	Spatial Mapping and Differentiation Characteristics of Urban Residential Environment Green Space in Inner Mongolia Based on Remote Sensing. Author(s): Junjie Yang, Guijun Zhang, Quan Wu, Jun Hao and Xin Yu		
	Gross Primary Productivity is More Sensitive to Accelerated Flash Drought. Author(s): Yangyang Jing and Shuo Wang		

Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics
(GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

Urban Science and Systems - 5 (Room Z211)	A Task-based 3D visualization for life-cycled BIM activities. Author(s): Chengpeng Li, Renzhong Guo, Shen Ying, Zhigang Zhao and Haojia Lin
	A Method for Measuring Network Spatial Structure Based on Trajectory Data: A Case Study of Harbin's China Baroque Historical Block. Author(s): Haixuan Zhu, Zixuan Zhao, Cuiling Wu and Xiaoyu Hou
	Research on spatial structure of linear history based on trajectory data -- Take Harbin Central Street as an example. Author(s): Haixuan Zhu, Cuiling Wu, Xiaoyu Hou and Zixuan Zhao
	Exploring Pedestrian Network Choice Behavior between At-Grade and Bridge Networks in Hong Kong using Machine Learning with SHAP Approach. Author(s): Umer Mansoor, Ho-Yin Chan, Junbiao Su and Anthony Chen
	visual attention stepwise guiding augmented representation method of bridge numerical analysis model. Author(s): Jun Zhu and Jianbo Lai
	A building skeleton theory for compact building reconstruction and 3D urban morphology abstraction from urban-scale reality capture data. Author(s): Yijie Wu, Anthony G.O. Yeh and Fan Xue
Urban Spatial Data Analytics - 7 (Room Z409)	A Hyperspectral Image Denoising Method based on Land Cover Spectral Autocorrelation. Author(s): Shuheng Zhao and Xiaolin Zhu
	Transport-oriented built environment, accessibility, and the intra-urban spatial distribution of innovation activities in Hong Kong. Author(s): Yuting Hou, Xiaohang Ruan and Yuk Tai Lau
	Cross-temporal Chinese urban scene classification and change analysis based on a deep adaptation network and high spatial resolution remote sensing imagery. Author(s): Sunan Shi, Yanfei Zhong and Yinhe Liu
	Automatic Identification and Reconstruction of Stairs from LIDAR Point Cloud. Author(s): Feng Li and Wenzhong Shi
	An Efficient Unfolding Network with Disentangled Spatial-Spectral Representation for Hyperspectral Image Super-Resolution. Author(s): Denghong Liu, Jie Li, Qiangqiang Yuan, Li Zheng, Jiang He, Shuheng Zhao, Yi Xiao and Xiaolin Zhu
Urban Sensing for Smart City - 4 (Room Z414)	A novel land cover-to-land use method to map clustered rural settlements from Landsat images incorporating semantic information. Author(s): Yan Wang, Xiaolin Zhu and Tao Wei
	Human labeling errors and their impact on ConvNets for satellite image scene classification. Author(s): Longkang Peng, Tao Wei and Xiaolin Zhu
	Large-Scale Urban 3D Sensing of Micro-weather and Pollutions in Micro-Environments: A Feasible Approach for Massive Monitoring of Physical Environment in a Smart City. Author(s): Yau Yuen Yeung, Yan Yang and Chi-Chiu Cheung
	Cross-Scene Land Use Classification Based on Open Set Domain Adaptation. Author(s): Zhendong Zheng and Yanfei Zhong

Biography of the Chair of Conference Organizing Committee

Prof. Wenzhong SHI

Academician of International Eurasian Academy of Sciences, Fellow of Academy of Social Sciences (UK)

President of International Society for Urban Informatics

Director of Otto Poon Charitable Foundation Smart Cities Research Institute, The Hong Kong Polytechnic University, Hong Kong SAR, China

Biography

Professor Wenzhong Shi is the Director of PolyU-Shenzhen Technology and Innovation Research Institute (Futian), Director of Otto Poon Charitable Foundation Smart Cities Research Institute of PolyU, Chair Professor in Geographic Information Science and Remote Sensing, and Director of Joint Research Laboratory on Spatial Information of PolyU and Wuhan University. He is Academician of International Eurasian Academy of Sciences and Fellow of Academy of Social Sciences (UK). He earned his doctoral degree from University of Osnabruck in Vechta, Germany in 1994. He is a Fellow of Royal Institution of Chartered Surveyors and Hong Kong Institute of Surveyors, Professor Shi also serves as President of International Society for Urban Informatics and Editor-in-Chief of International Journal Urban Informatics.



His research covers urban informatics for smart cities, geographic information science and remote sensing, artificial-intelligence-based object extraction and change detection from satellite imagery, intelligent analytics and quality control for spatial big data, and mobile mapping and 3-D modelling based on LiDAR and remote sensing imagery. He has published over 300 research articles in journals indexed by Web of Science and 20 books. He is among the worldly top 2% cited researchers according to the standardized citation indicators published by Elsevier BV and scholar in Stanford University. He has obtained over 40 patents.

Professor Shi won State Natural Science Award, China's highest award for fundamental research, in 2007; Distinguished Scholar Prize by CPGIS and Smart 50 Awards in 2021; Gold Medal in 2021 & 2023 Geneva Invention Expos; Founder's Award by International Spatial Accuracy Research Association in 2020; Science and Technology Progress Award in Surveying and Mapping (Grand Award) in 2017; Wang Zhizhuo Award by International Society of Photogrammetry and Remote Sensing in 2012; and ESRI Award for Best Scientific Paper by American Society of Photogrammetry and Remote Sensing in 2006.

Biography of Keynote Speaker & Abstracts of Keynote Speeches

Prof. Michael BATTY

Fellow of the British Academy (FBA) and the Royal Society (FRS)
Chairman of the Centre for Advanced Spatial Analysis, University College London, UK

Biography

Professor Michael Batty CBE FRS FBA is Bartlett Professor of Planning at University College London. He is Chair of the Centre for Advanced Spatial Analysis (CASA) and also a Turing Fellow in the Alan Turing Institute. He has worked on computer models of cities and their visualisation since the 1970s and his recent publications *Cities and Complexity* (2005), *The New Science of Cities* (2013), and *Inventing Future Cities* (2018), are all published by The MIT Press. The last two of these books have been translated into Chinese. The edited book *Urban Informatics* (Springer 2021) reflects his focus on the applications of digital technologies to urban planning. In the 1980s, he was Professor of City Planning and Dean of the School of Environmental Design at the University of Wales at Cardiff, and prior to that a Lecturer and Reader in Geography at the University of Reading.



From 1990-1995, he was Director of the National Center for Geographic Information and Analysis at the State University of New York at Buffalo. His first degree BA was in planning from the University of Manchester in 1966 and his doctorate was architecture from the University of Wales, 1984. He has published many papers and he is highly cited with an H index of 115. He is a Fellow of the British Academy (FBA) and the Royal Society (FRS). He was awarded the CBE in the Queen's Birthday Honours List in 2004. He received the Gold Medal of the Royal Geographical Society (2015) and the Gold Medal of the Royal Town Planning Institute (2016). He has been the editor of *Environment and Planning B* since 1971.

Large Scale Urban Models as Digital Twins for Exploring Future Cities

Abstract

In the last decade, we have rapidly begun to build many different but related models of the same city system which we increasingly refer to as "digital twins". We have been building single land use transportation models of large city systems for many years but only recently have we begun to scale them up to entire regions and national city systems while operating them in highly interactive environments which enable us to predict the impacts of different scenarios on the fly. With these developments, we are now in a position to develop many different versions of such models by altering their parameters and physical representations, thus spinning off "twins" of the original system, and embodying different features in their simulation. This provides us with a wide range of related tools that enable us to explore the solution space for future cities that enable us to realize a wide array of goals for future urban development. We have developed a model called QUANT for Great Britain which is organized around 8500 census zones which generate some 85002 flows for the many spatial interactions that tie key activities such as employment and population together. What we illustrate here is how the model can be used to generate different scenarios but also how variants of the model – digital twins – can help in testing different futures. We conclude by indicating how we might generate different twins by adding new modes of transport, in particular an active travel layer, to the three current modes (bus, rail and road) and how the model can be developed at a much finer scale where we divide the country into 41000 census zones, generating 410002 flows.

Prof. Michael GOODCHILD

Member of the US National Academy of Sciences, Fellow of the Royal Society
University of California, Santa Barbara, USA

Biography

Michael F. Goodchild is Professor Emeritus of Geography at the University of California, Santa Barbara. Until 2012 he held the Jack and Laura Dangermond Chair of Geography and was Director of UCSB's Center for Spatial Studies. He received his BA degree from Cambridge University in Physics in 1965 and his PhD in Geography from McMaster University in 1969. His research and teaching interests focus on issues in geographic information science, including uncertainty in geographic information, discrete global grids, and volunteered geographic information. He has directed or co-directed several large funded projects, including the National Center for Geographic Information and Analysis, the Alexandria Digital Library, and the Center for Spatially Integrated Social Science. He was elected member of the US National Academy of Sciences in 2002, and Foreign Member of the Royal Society and Corresponding Fellow of the British Academy in 2010; and in 2007 he received the Prix Vautrin Lud. He has published over 550 books and articles. He moved to Seattle upon retirement in 2012, and currently holds part-time positions as Research Professor at Arizona State University and as Distinguished Chair Professor at Hong Kong Polytechnic University. His full CV is at www.geog.ucsb.edu/~good.



Digital Twins for Urban Planning

Abstract

The term digital twin is becoming widely used in urban planning circles. Several reasons are suggested for its recent popularity despite the impossibility of a perfect digital twin. I review the relevance of the Turing test, and enumerate some of the ethical issues which result from the use of the term. Many open research issues will have to be addressed if digital twins are to become routinely used in urban planning and urban research.

Prof. Jianya GONG

Academician of the Chinese Academy of Sciences
Professor, Wuhan University, China

Biography

Dr. Jianya Gong is a professor of Wuhan University and an academician of Chinese Academy of Sciences. He is the winner of the National Outstanding Youth Fund, the distinguished Professor of "Changjiang Scholars" of the Ministry of Education, the chief scientist of the 973 Project, the academic leader of the Innovation Group of the National Natural Science Foundation, the leading scientific and technological talents of the State Bureau of Surveying and Mapping, and the convenor of the Surveying and Mapping Discipline Group of the sixth and Seventh Subject Review Groups of The State Council. He was the director of the State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing and the Dean of the school of Remote Sensing Information Engineering of Wuhan University, president of the Commission VI of the International Society of Photogrammetry and Remote Sensing, and president of International Association of Chinese Professional in Geographic Information Science. He is currently the Secretary-General of the Asian Association for Geographic Information Systems, associate editor of Acta Geodaetica et Cartographica Sinica and Editor-in-Chief of Journal of Geodesy and GeoInformation Science.



Dr. Jianya Gong is mainly engaged in the research of remote sensing and geographic information system. He has undertaken more than 40 national and provincial scientific research projects. He has published 13 monographs and textbooks, and more than 500 papers. He has won the National Science and Technology Innovation Team Award once, the first prize once and the second prize for 4 times of the National Science and Technology Progress Award, the provincial and ministerial level special prize for 3 times and the first prize for 7 times, and the Dolezal Achievement Award of the International Society of Photogrammetry and Remote Sensing.

Advances and Challenges in Intelligent Interpretation of Remote Sensing

Abstract

Artificial intelligence has been rapidly developed and widely applied in many fields. Important research progress has been made in intelligent interpretation of remote sensing images, and some scenarios have been applied. However, the large-scale application of intelligent interpretation of remote sensing images is not mature enough. The report analyzes the problems existing in intelligent interpretation of remote sensing, including the small number of samples, incomplete categories, lack of standards and specifications, and the existing deep learning network framework is difficult to meet the needs of intelligent interpretation of multi-source remote sensing images. The speaker introduced his team's latest research achievements in intelligent remote sensing interpretation, including the design and research progress of LuoJiaSET, a diversified and standardized sample database, and LuoJiaNET, a deep learning network framework for intelligent remote sensing interpretation, as well as the typical application of deep learning in intelligent remote sensing interpretation.

Prof. Renzhong GUO

Academician of Chinese Academy of Engineering
Dean of Research Institute for Smart Cities, Shenzhen University, China

Biography

Prof. Renzhong GUO was born in Jiangsu, China. He is member of the Chinese Academy of Engineering. He received the B.S. and M.S. degrees from Wuhan University, Wuhan, China, in 1984, and the Ph.D. degree in Geography from University of Franche-Comté, Besançon, France, in 1990. He is currently a professor and the dean of the Research Institute for Smart Cities, School of Architecture and Urban Planning, Shenzhen University, Shenzhen, China.



He has been engaged in research and development of Cartography, GIS, and Construction Strategy of Digital City for a long time. Great achievements are also be made in theories and methods of Geographical Information System, Information Engineering of Land Resource Management.

The Time Perspective of Urban Research

Abstract

Under the background of the new technological revolution, urban development has shown some new characteristics, but also encountered some new problems, and smart cities have high hopes. However, ICT alone cannot solve all urban problems, so it is necessary to study new urban science and understand modern cities. This report proposes to study and understand cities from a temporal perspective.

Prof. Carlo RATTI

Director of MIT Senseable City Lab, Massachusetts Institute of Technology, USA

Biography

An architect and engineer by training, Professor Carlo Ratti teaches at MIT, where he directs the Senseable City Laboratory, and is a founding partner of the international design and innovation office Carlo Ratti Associati. A leading voice in the debate on new technologies' impact on urban life, his work has been exhibited in several venues worldwide, including the Venice Biennale, New York's MoMA, London's Science Museum, Barcelona's Design Museum and Bi-City Biennale of Architecture and Urbanism. Three of his projects – the Digital Water Pavilion, the Copenhagen Wheel and Scribit– were hailed by Time Magazine as 'Best Inventions of the Year'. He has been included in Wired Magazine's 'Smart List: 50 people who will change the world'. He is currently serving as co-chair of the World Economic Forum's Global Future Council on Cities and Urbanization.



Senseable Cities

Abstract

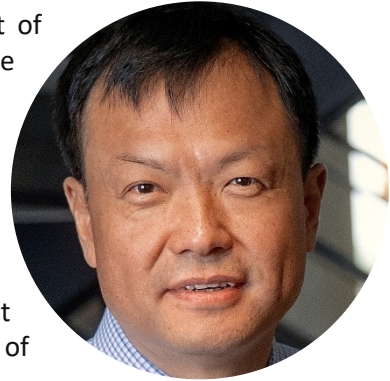
The way we live, work, and play is very different today than it was just a few decades ago, thanks in large part to a network of connectivity that now encompasses most people on the planet. In a similar way, today we are at the beginning of a new technological revolution: the Internet is entering the physical space – the traditional domain of architecture and design – becoming an “Internet of Things” or IoT. As such, it is opening the door to a variety of applications that – in a similar way to what happened with the first wave of the Internet - can encompass many domains: from energy to mobility, from production to citizen participation. The contribution from Prof. Carlo Ratti will address these issues from a critical point of view through projects by the Senseable City Laboratory, a research initiative at the Massachusetts Institute of Technology, and the design office Carlo Ratti Associati.

Prof. Ying JIN

Director of the Martin Centre for Architectural and Urban Studies
Professor of Architecture and Urbanism
University of Cambridge, UK

Biography

Ying Jin is Professor of Architecture and Urbanism at Department of Architecture, University of Cambridge. He is Director of the interdisciplinary Martin Centre for Architectural and Urban Studies, where he leads in the modelling of symbiotic relationships among the economy, land use, transport, urban design and the environment. He has led large modelling teams to work on complex policy and infrastructure projects, including the first land use and urban economic modelling study of the Elizabeth Line (formerly known as CrossRail) in the UK and the World Bank's regional impact assessment of China's High Speed Rail programme. He is a Fellow of Robinson College, Cambridge.



Insights from Mapping the Evolution in the Distribution of Young Adults among Mega-City Regions

Abstract

This talk seeks to examine trends in urban growth and decline through the presence of young adults over time, particularly the young adults aged 25-34 who are at their most mobile.

The mapping and analysis are illustrated using Census data from the UK from 1961 to 2021 – this is a good quality dataset that can be used to trace the presence of young adult residents and workers over the six decades among all the constituent city regions. The results show a story of economic polarization, with a concentration of economic growth towards London and its hinterlands and persistent declines in the rest of the country. For example, in 1961, in England and Wales young adults of this age group spread fairly evenly, with a median value of 12.5% (or 1 in every 8 people) in a Census Ward. By contrast, the most recent 2021 Census shows that the share of young people are polarising at both ends: 156 Census wards have got more than 1 in every 4 people in this age band (whilst in 1961, only 3). Another 667 wards have got less than 1 in 13 people in this age band (whilst in 1961, only 70).

The UK government has always been very conscious of the concentration of economic activity towards London and the north/south divide ever since the onset of industrial and mining declines in the 1920s, having published reams of government reports and white papers on the topic. The stark contrast between the continuous policy efforts and the harsh reality of worsening polarisation highlights the need to understand and explain what has been missing in the existing policy narratives. This talk put forward a new perspective to understand and explain this phenomenon, whilst demonstrating the power of urban informatics.

Prof. Anthony YEH

Academician of the Chinese Academy of Sciences

Chair Professor of the Department of Urban Planning and Design, The University of Hong
Kong, Hong Kong SAR, China

Biography

Prof. Anthony G.O. Yeh is a Member of the Chinese Academy of Sciences and Hong Kong Academy of Sciences and Fellow of TWAS (The World Academy of Sciences) and Academy of Social Sciences UK. He is Chan To-Hann Professor in Urban Planning and Design and Chair Professor of Department of Urban Planning and Design and Director of GIS Research Centre, and former Dean of Graduate School, Director of Centre of Urban Studies and Urban Planning, Institute of Transport Studies at the University of Hong Kong. His main areas of specialisation are in urban development and planning in Hong Kong, China, and South East Asia and the applications of geographic information systems (GIS) as planning support system. He received the UN-HABITAT Lecture Award in 2008 for his outstanding and sustained contribution to research, thinking and practice in the human settlements field. His projects have won a gold medal in the 2018 Geneva International Exhibition of Inventions and gold award in the 2022 Hong Kong ICT Smart Logistics Award.



He has published over 30 books and monographs and over 180 international journal papers and book chapters. He also serves as editorial board members in major international journals and honorary professors and external examiners of a number of universities and research institutes in China and S.E. Asia. He has been President of Asia GIS Association, Founding Secretary-General of the Asian Planning Schools Association and Asia GIS Association, Founding President of the Hong Kong GIS Association, Vice-President of the Commonwealth Association of Planners, Vice-President of the Hong Kong Institute of Planners, and Chairman of the Geographic Information Science Commission of the International Geographic Union (IGU).

Urban Big Data and Urban Planning

Abstract

The development of smart cities is a worldwide phenomenon. Smart cities have generated a lot of big data. The combination of these big data and artificial intelligence has produced many new methods and applications of data analysis and urban simulation. However, in order to use these data properly, we need to understand the issues and limitations in using them in urban planning.

Biography of the Co-chair of Panel Discussion

Prof. Chenghu ZHOU

Academician of the Chinese Academy of Sciences
Professor at the Institute of Geographic Sciences and Natural Resources, Chinese Academy
of Sciences (CAS), China

Biography

Prof. Zhou Chenghu is a professor at the Institute of Geographic Sciences and Natural Resources, Chinese Academy of Sciences (CAS), and an Academician of the Chinese Academy of Engineering. He is mainly engaged in the research of remote sensing and GIS and its connection with geoscience, including knowledge mining of spatial data, geological intelligent computing, numerical simulation analysis and evaluation of information systems of flood disaster, geological analysis and application of remote sensing images. He has established a quantitative remote sensing analysis model of geomorphic entities and a digital geomorphic mapping technology. Furthermore, he has established a global discrete geographic grid model for hydrological spatial and temporal data, developed application models such as river hydrological process simulation and risk assessment. He has published more than 300 academic papers, including more than 70 SCI papers, 19 academic monographs and atlases, and more than 7,300 citations by domestic and foreign peers. He has won 15 national and provincial science and technology awards, including 5 national science and technology progress awards and 4 provincial and ministerial science and technology awards.





Reception, Keynote Speeches 3-7, Exhibition, Parallel Session and Lab Visit from 20/8-23/8 @Block Z

Opening Ceremony & Keynote Speeches 1-2 21/8 09:00 @Jockey Club Auditorium

Lunch for Full Registration 21/8 12:30 @Ju Yin House, 4/F, Communal Building

VA Student Canteen for student participants @G/F, Shaw Amenities Building

Location Map of Off-Campus Venues 校外場所位置圖

1. PolyU Main Campus 香港理工大學主校園
2. Student Halls of Residence (Hing Tam) 皇廷軒舍 (紅潭)
3. Student Halls of Residence (Hornmarsh) 學生宿舍 (荷文田)
4. PolyU Hung Hom Bay Campus 香港理工大學紅磡灣校園
5. PolyU West Kowloon Campus 香港理工大學西九龍校園
6. Off Campus Housing (OCH - Hillwood Road) 校外宿舍 (山林道)

KEY TO CAMPUS MAP 校園索引

建築物/設施編號 Building / Facilities Reference Number

圖標 Building / Core / Block

閣下在此 You are here

大學醫療保健處 University Health Service

保安服務隊 Guard Post

洗手間 Toilet

暢通無阻通道手閘 Accessible Trolley

餐廳 / 酒樓 / 咖啡室 Canteen / Restaurant / Cafe

便利店 Convenience Store



Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023)

20 - 23 August 2023, Hong Kong

USEFUL INFORMATION

Emergency

- Emergency Service (Police, Fire, Ambulance): **999**

Tourist Information

- Hong Kong Tourism Board website,
www.discoverhongkong.com

Hospital

- In case you do not feel well, it is for your and other people's good that you go to hospital immediately. The closest hospital is the University Health Service of PolyU:

University Health Service Room

- A001, G/F, Chung Sze Yuen Building
- Tel: 2766-5433

Contact Us

- International Society for Urban Informatics



Home Page



Twitter



WeChat



LinkedIn

Thank you for your support to GSCS&ICUI2023!