



SESSION 1A

Data models and tools

CHAIR: STEF DE SABBATA

- 1 **A good data model is worth a complex neural network: Evidence from building generalization using deep learning**
Zhiyong Zhou, Jan Winkler, Cheng Fu and Robert Weibel
- 2 **Aug4Sat: Synthetic Satellite Imagery Generation for Training Data Augmentation**
Seyed Amir Muhammad Qureshi
- 3 **The Potential of Grounded Synthetic Corpora to Address Persistent Geoparsing Challenges**
Franz Welscher, Ilya Ilyankou, Tatu Leppämäki and Paddy Smith
- 4 **GeoPandas-AI: A Smart Class Bringing LLM as Stateful AI Code Assistant**
Gaspard Merten, Gilles Dejaegere and Mahmoud Sakr
- 5 **GeoAggregator: An Efficient Transformer Model for Geo-Spatial Tabular Data**
Rui Deng, Ziqi Li and Mingshu Wang
- 6 **GeoXCP: uncertainty quantification of spatial explanations in explainable AI**
Xiayin Lou, Peng Luo, Ziqi Li, Song Gao and Liqiu Meng
- 7 **Estimated uncertainty reduction of artificial intelligence models for time-series forecasting**
Reihanesadat Khatami, Ximeng Cheng and Jackie Ma



SESSION 1B

Foundation models and LLMs/VLMs

CHAIR: NICK MALLESON

- 1 **Using Foundation Model Embeddings to Map Colorado's Built Hazard Interface for Wildfire**
Aleksander Berg and Stefan Leyk
- 2 **What on Earth Is AlphaEarth? Opening the Black Box of Foundation Models for Public Understanding and Use** - Felipe Benavides, Justin Guthrie and Auroop Ganguly
- 3 **Learning Urban Spatial Representations via Urban Adaptation of Google AlphaEarth Foundations**
Quan Qin, Tinghua Ai and Tao Cheng
- 4 **Thematic DataCubes on-Demand (TheDe): Leveraging Large Language Models (LLMs) for Geospatial Data Discovery and Exploitation in Earth Observation (EO)**
Edoardo Kimani Bellotto, Wassim El Adli El Azami, Stefano Natali, Florian Widmer and Joost Van Bemmelen
- 5 **Pan-European Soil Type Classification: Embeddings vs Environmental Covariates**
Mustafa Serkan Isik, Leandro Parente and Tomislav Hengl
- 6 **Large Language Models for Time-aware Land Use Classification**
Alessia Calafiore and Zexun Chen
- 7 **Mapping the Semantics of the Street: A VLM-Driven Geospatial Analysis in Fatih, Istanbul**
Yunus Serhat Bıçakçı, Joseph Shingleton, Yu Wang and Ana Basiri

POSTERS 1

THURSDAY during coffee breaks

- 1** **LUMI supercomputer provides GPU-computing for GeoAI projects**
Küllü Ek and Katri Tegel
- 3** **The Earth Observation Training Data Lab (EOTDL)**
Juan B. Pedro
- 5** **Employing GeoAI for building a pan-European Geodigital Twin**
Steven Smolders and Bruno De Lat
- 7** **A spatiotemporal ensemble machine learning framework for generating global land cover time-series maps (2000–2024)**
Mateo Moreno, Rolf Simoes and Tomislav Hengl
- 9** **Research on accurate and effective identification of ecosystem surface based on human footprint index**
Dong Chun, Song Qi, Zhaoxin Dai, Xin Qiu and Tao Luo
- 11** **High resolution evapotranspiration map over Austria: leveraging AI and Sentinel-2**
Maximilien Houët and Wassim Azami
- 13** **GeoAI-enabled assessment of Cultural Ecosystem Services under land-use change: a spatial and participatory framework for the Alqueva landscape (Portugal)**
Eduardo Gomes, Cláudia M. Viana and Jorge Rocha
- 15** **Towards grassland biodiversity monitoring using AI-based pattern analysis on combined aerial and satellite imagery**
Lisa Landuyt, Ann Julie Holt, Stien Heremans, Toon Spanhove, Johan Peymen and Jan Biesemans
- 17** **Deep learning-based mapping of woody floral resources for wild bee habitat modeling**
Kato Vanpoucke, Stien Heremans, William Schraal, Toon Spanhove, Stef Lhermitte and Ben Somers
- 19** **A GCNN-Based Method for Functional Zone Recognition by Integrating Building Spatial Morphology and Courtyard-Level Context**
Zhaoxin Dai, Zheng Wu, Jiping Liu and Chuangqi Wu
- 21** **Validation of GlobalBuildingAtlas Using High-resolution LOD1 Building Products for Flanders**
Wouter Dierckx
- 23** **Geo-AI for Multi-Criteria Urban Spatial Analysis**
Mariam Petrosyan and Suren Tovmasyan
- 25** **A Multi-Dimensional GeoXAI Framework for Explainable Spatial Modeling of Urban Heat Islands**
Qasem Safariallahkheili
- 27** **Exploring social and spatial inequalities in healthy and sustainable diets using big data: An observational analysis of loyalty card data from a UK Retailer, 2022.**
Mark Green, Emma Wilkins, Mark Gilthorpe, Maddie Thomas, Nilani Sriharan, Alexandra Johnstone and Michelle Morris
- 29** **Understanding the Spatial Determinants and Geographical Inequalities of Community-Acquired Pneumonia in Portugal through AI and xAI models**
Jorge Rocha, Iuria Betco, Eduardo Gomes and Cláudia M. Viana
- 31** **A Digital Alcohol Environment: Mapping Rapid Delivery Service Accessibility Across London, UK**
Xinsu Lyu, Sabrina Li and Doreen Boyd
- 33** **Predictors of Self-rated Health across Adult Life Course in Germany: An Explainable Machine Learning Analysis**
Sida Zhuang and Tobia Lakes
- 35** **Eye Tracking to GeoAI for Context-Aware, Personalized Geospatial Experiences**
Merve Keskin
- 37** **Deployment-Oriented Room-Level Wi-Fi Fingerprinting for Context-Aware Museum Way-finding and Analytics**
Winter Clincckemaillie, Joachim Taelman, Kenzo Milleville and Steven Verstockt
- 39** **Data-Driven Optimization of Civil Defense Response Time Using Spatial Clustering and Queuing Models**
Mohammed Itair, Aghiles Djoudi, Yousef Abuamer, Ihab Hijazi, Jamal Dabbeek and Rani Elmeouché
- 41** **Automated Georeferencing of Standard Topographic Maps**
Ebru Kaya, Salih Yalçın, Güray Çetin and Ekrem Ayyıldız
- 43** **GeoAI Strategies and Goals at Geomatics Department of TKGM**
Ebru Kaya, Bilal Erkek, Arda Günay and Ekrem Ayyıldız



SESSION 2A

LLMs, agents and geospatial workflows

CHAIR: TAO CHENG

- 1 **Dynamic Context Injection in LLMs: a case study on workflow modeling**
Edoardo Ramalli and Pieter Kempeneers
- 2 **Integrating LLM-based workflows into GIS classroom learning activities**
Peter Mooney, Paddy Gorry and Levente Juhász
- 3 **Constraint-Aware AoV Planning for Orchestrating Autonomous Geospatial Analysis with LLMs**
Annisa Puspa Kirana, Mahdi Farnaghi and Raul Zurita-Milla
- 4 **Using LLMs to Apply a Cultural Event Taxonomy for Spatial Inference from Unstructured Platform Data**
Yue Wang, Matteo Montecchi and Andrea Ballatore
- 5 **Emergent Spatio-Semantic Structure in Large Language Model Embedding Spaces**
Joseph Shingleton, Yunus Serhat Bıçakçı, Yu Wang and Ana Basiri
- 6 **A Graph-based and LLM-agnostic Agentic Approach for Natural Language Interaction with PostGIS Databases**
Giovanni Piccolo and Cinzia Sada
- 7 **GALA: A Multi-Agent GeoAI Framework for Mineral Exploration through SAM3-Augmented Knowledge Graphs and Human-in-the-Loop Validation**
Yi Dong, Dingming Liu, Hengpeng Guo, Chang Xu and Xiaojun Yao



SESSION 2B

LULC mapping

CHAIR: CATHERINE LINARD

- 1 **Guiding Deep Learning with Landscape Metrics for LULC Mapping Applications**
Nikolaos Kolaxidis, Christina Ludwig, Maciej Adamiak and Alexander Zipf
- 2 **From Aerial Imagery to Official Statistics: Integrating Registry Data in Operational Deep Learning for Fine-Grained Built-Up Area Mapping in the Netherlands**
Athithya Seethalakshmi Loganathan, Saim Muhammad and Sander Oude Elberink
- 3 **Machine learning for high-resolution soil sealing mapping: opportunities and challenges**
Kasper Cockx, Joris Pieters, Peter Willems and Stijn Vanacker
- 4 **A deep-learning framework for spatial snow depth and mass estimation across the Western US from Sentinel-1 backscatter observations**
Lucas Boeykens, Gabriëlle De Lannoy, Niko E. C. Verhoest, Thomas Painter, Kat J. Bormann and Hans Lievens
- 5 **Applying Image Segmentation to 19th Century Cartographic Data for Historic Woodland Mapping in Wales**
Evie Brown
- 6 **Automated property parcel classification using very high-resolution land cover imagery and multi-modal deep learning: Effective city-scale monitoring for urban expansion outcome modelling**
Warin Chotirosniramit, John Duncan, Joe Hurley, Sally Thompson, Marco Amati, Qian Sun and Bryan Boruff
- 7 **LEAF-Net: Local End-to-End Cross-Modal Alignment via Feature Warping for UAV Imagery**
Deniz Soysal, Toon Lambrecht, Matthew Blaschko, Toon Goedemé, Ben Somers and Stef Lhermitte



SESSION 3A

Street-level visual intelligence and perception (1)

CHAIR: SIQIN WANG

- 1 **Hearing Street Through Street View Imagery with Multi-modal Generative AI**
Haofeng Tan, Yuhao Kang and Cuizhen Wang
- 2 **StreetSense: Using Visual Language Models as Virtual Auditors of Street-Level Pedestrian Experience**
Lasith Niroshan and Francesco Pilla
- 3 **Estimating Visible Deprivation through the Analysis of Street View Image Embeddings**
Molly Asher, Alexis Comber, Naieme Golzari Osguie and Nick Malleson
- 4 **The Invisible City: Not All Streets Are Seen Equally**
Yu Wang, Joseph Shingleton, Yunus Serhat Bıçakçı, Ana Basiri and James Ackland
- 5 **AI's Blind Spots: Geographic Knowledge and Diversity Deficit in Generated Urban Scenario**
Ciro Beneduce, Massimiliano Luca and Bruno Lepri



SESSION 3B

Thermal and risk mapping

CHAIR: SHIH-LUNG SHAW

- 1 **HESTIA: A TESSERA-Guided Multimodal Fusion Architecture for Urban Thermal Representation Learning**
Adhib Hussain Syed and Ronita Bardhan
- 2 **GeoAI for Renovation Governance: Automated Thermal Intelligence for Scalable Building Retrofit Strategies**
Vincent Malisse, Steven Smolders and Laurent Laurent Delor Nlemba Ndognje
- 3 **Is Proximity Enough? Thermal Comfort and Environmental Justice in 15-Minute Cities from a High-Resolution Environmental Exposure Perspective**
Jiale Guo and Mingfeng Tang
- 4 **Urban Network Resilience in a Changing Climate: Identification of Critical Roads under Heavy Rainfall using Graph Neural Networks**
Mohammad Sharif and Dirk Wittowsky
- 5 **Towards the Use of Gaussian Splatting Techniques for Visibility Analysis in Road Safety**
Clément Massart and Steven Smolders



SESSION 4A

GeoAI for mobility studies (1)

CHAIR: ANA BASIRI

- 1 **GeoAI for city-wide pedestrian flow mapping and urban regeneration**
Mohamed Shamroukh, Asya Natapov and Taimaz Larimian
- 2 **A geospatial activity modification framework for calibrating mobility models**
Yahya Gamal, Tatsuya Mitomi, Alison Heppenstall, Esra Suel and Gary Polhill
- 3 **Heterogeneity-Guided Tensor Decomposition for Traffic Flow Imputation**
Xiaoyue Luo, Shifen Cheng, Yitao Yang, Peixiao Wang, Shengmin Guo, and Feng Lu
- 4 **Physics-informed GeoAI for Traffic State Inference in Large-Scale Expressway Networks**
Chaoshuo Huang, Qinyu Cui, Chuhao Zhou and Peiqun Lin
- 5 **From Static Points to Dynamic Fields: Reconstructing Spatiotemporal Boundaries of Places via AutoEncoder and Mobility Big Data**
Yang-Chou Juan, Chang-Hung Shih, Wei-Zhi Wang, Han-Chi Chen, Yi-Chung Chen, Rong-Kang Shang, Tzu-Yin Chang and Shih-Lung Shaw
- 6 **Governing GeoAI-Enabled Autonomous Driving in the City: A Socio-Technical Governance Perspective**
Yanliu Lin and Jiayi Li
- 7 **Visually-driven Topic Modelling for Analysis of Movement Data**
Gennady Andrienko



SESSION 4B

Geographic knowledge graphs

CHAIR: HENRIKKI TENKANEN

- 1 **Geographic knowledge graphs: enabling trust and interoperability in GeoAI**
Nenad Radosevic, Nayomi Ranamuka, Matt Duckham, Mohammad Kazemi Beydokhti, Katherine Williams, Allison Kealy, Prawal Lohani, Alexis Horde Vo and Yaguang Tao
- 2 **Topographic Feature Graph-Based Representation and Reasoning**
Hao Wu, Tinghua Ai, Zhiruo Zhao, Lingrui Yan and Zhenyu Zhang
- 3 **Authoritative Knowledge Infrastructure for GeoAI: Implications for Scientific Spatial Data Providers**
Samantha Arundel, Lilit Yeghiazarian, Torsten Hahmann and Bryan B. Campbell
- 4 **Knowledge-Based Risk Assessment: A GeoKG Framework for Vector-Borne Disease ABMs**
Katharina Wöhs, Johannes Scholz and Gudrun Wallentin
- 5 **A Grid-Based Spatiotemporal Knowledge Graph Framework for LLM GeoQA**
Rui Shen, Ye Zheng, Ding Ma, Jiaming Huang, Lei Han, Weixi Wang and Xiaoming Li
- 6 **Precomputed Topological Relations for Integrated Geospatial Analysis Across Knowledge Graphs**
Katrina Schweikert, David K. Kedrowski, Shirley Stephen and Torsten Hahmann
- 7 **A DEM multi-scale generalization method based on unsupervised generative learning driven by terrain knowledge**
Lingrui Yan, Tinghua Ai, Xinyan Zou, Hao Wu, Haohua Zheng and Zhenyu Zhang

POSTERS 2

FRIDAY during coffee breaks

- 2

Sensitivity of Network Cascade Estimates to Spatial Embedding Assumptions: A Methodological Analysis Using Open Geospatial Data

Chonchol Gupta and Roel Gevaers
- 4

Sequence analysis of local indicators of spatio-temporal association for evolutionary pattern discovery - Jianing Yu, Hengcai Zhang, Peixiao Wang, Jinzi Wang and Feng Lu
- 6

Synthesis and evaluation of seamless, large-scale, multispectral satellite images using Generative Adversarial Networks on land use and land cover and Sentinel-2 data

Torben Dedring and Andreas Rienow
- 8

Improving global land cover fraction change mapping using temporal deep learning

August Stomp, Dainius Masiliūnas and Nandin-Erdene Tsendbazar
- 10

A Deep Learning Framework for Automated Land Use Delineation in Rural Türkiye

Güray Çetin, Ebru Kaya, Bilal Erkek and Ekrem Ayyıldız
- 12

Spatially Explicit Forecasting of Impervious Surface Area Growth in Developed Regions Using Deep Learning: A Case Study of North Rhine-Westphalia, Germany

Jonas Siethoff, Shaojuan Xu, Valerie Graw and Andreas Rienow
- 14

Spatially Explicit Impervious Surface Mapping Using Very High-Resolution Orthophotos in North Rhine-Westphalia, Germany: An Automated, AI-Based Approach

Jan-Philipp Langenkamp, Max Kreke and Andreas Rienow
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Extending a Geodatabase Framework for AI-Based Analysis of Digital Elevation Models to Support Earth Observation Applications

Ruiqi Liu, Paul Vincent Kuper, Berk Kivilcim and Martin Breunig
- 18

A GeoAI Framework for Gathering, Storing, and Analyzing Historical Agricultural Documentary Sources

Cláudia M. Viana
- 20

Large-scale mapping and classification of agricultural terraces in the European Mediterranean

Andrei Kedich, Ralf Vandam, Soetkin Vervust, Yannick Devos and Matthias Vanmaercke
- 22

A practicable lightweight YOLOv8 approach for Jilin-1 based crop mapping in Kenya

Anna Bartels, Andreas Rienow and Kuria Thiong'O
- 24

Assessing Groundwater Salinization Using Spatial Machine Algorithm Techniques

Khalifa M. Al-Kindi, Hamed S. Al Dhuhi, N. K. Al-Mezini, Mohammed S. Al Nadabi, Dawood S. Alqasmi, Hamood S. Al-Hashmi, Muhammad Irfan Ahamad and Siqi Lu
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When drought goes underground: a machine learning approach to groundwater drought

Abedulla Elsaïdy, Lorenzo Villani, Miguel Moreno Gómez, Yunes Mogheir, Marijke Huysmans, Ann van Griensven and Estifanos Addisu Yimer
- 28

Emulating 2D Ice-Sheet Dynamics using Graph Networks

Titus Top
- 30

Applying a Model-Agnostic Machine Learning method to investigate urban environmental factors influencing social media-based hedonic well-being

Lúria Betco, Cláudia M. Viana, Eduardo Gomes and Jorge Rocha
- 32

PerceptEarth: Global Layers of Human Urban Perception Derived from AlphaEarth Foundations Satellite Embeddings

Milad Malekzadeh, Elias Willberg, Jussi Torkko and Tuuli Toivonen
- 34

Fearless Riders, Fearful Cities: How Infrastructure Perception, Perceived Safety and Perceived Risk Shape E-Bike Riders' Intrusion into Motor-Vehicle Lanes

Zihan Yang and Qinyu Cui
- 36

Trajectories of Outdoor Light at Night, Small for Gestational Age, and Effect Modification by Socio-Economic Status: A Population-Based Retrospective Cohort Study - Manman Chen, Yadan Liu, Yuanyuan Li, Qu Lu, Anying Bai, Fangyi Ruan, Yu Jiang, Xiaotian Li and Qiongjie Zhou
- 38

GeoAI-based analysis of spatial associations between access to specialized healthcare and premature mortality from respiratory tract cancer - Miyoko Massago, Gustavo Cezar Wagner Leandro, Vladimir Dias Marques, Thiago Augusto Hernandez Rocha, Oscar Kenji Nihei, João Ricardo Nickenig Vissoci, Sanderland José Tavares Gurgel and Luciano de Andrade
- 40

High Resolution Urban Pavement Albedo Mapping Using GeoAI for Microclimate Cooling Assessment: A Case Study of Antwerp

Yong Xu, Cedric Vuye, Seyed Reza Omranian, Zihao Zhou, Wenjie Du and Xinghan Chen
- 42

Creating a Dataset of Spatial Parameters of Ground-Mounted Photovoltaic Systems Utilising Orthophotos and the Segment Anything Model

Johannes Albert, Chantal Schymik, Philipp Gärtner, Claudius Wehner, Jan Siegmund and Stephan Klingner
- 44

Socioeconomic and environmental determinants of COVID-19 mortality in England: a geographical random forest analysis

Zhiqiang Feng



SESSION 5A

Street-level visual intelligence and perception (2)

CHAIR: ANGELA YAO

- 1 **Algorithmic Conservatism in GeoAI-Based CPTED Auditing: Evaluating LLMs' Visual Judgement under Street-Level Uncertainty**
Apoorv Agrawal, Francesco Pilla and Anna Mölter
- 2 **Benchmark evaluation of large language models for human versus AI perception on urban environment through street view images**
Sisi Wang
- 3 **Consistent Visual Occlusion Inpainting Based on Dynamic Perspective Transformation and 3D Street View Reconstruction**
Fangli Guan, Zhixiang Fang and Haosheng Huang
- 4 **Spatially-Weighted CLIP for Street-View Geo-localization**
Ting Han, Fengjiao Li, Chunsong Chen, Haoling Huang, Yiping Chen and Meiliu Wu
- 5 **Street view-derived city built environment and vulnerability to temperature extremes: a nationally representative population-based cohort study**
Wanzhou Wang, Chao Yang, Ze Liang, Fulin Wang, Jinwei Wang, Feifei Zhang, Pengfei Li and Luxia Zhang
- 6 **Estimating road speed classes: Integrating OpenStreetMap and Street View imagery for missing data imputation** - Shiyu Tang, Sukanya Randhawa, Jin Rui, Christina Ludwig, Steffen Knoblauch, Charles Hatfield, and Alexander Zipf



SESSION 5B

Change modelling and prediction

CHAIR: SAMANTHA ARUNDEL

- 1 **Identify different types of urban renewal implementations at the streetscape scale**
Xiaotong Wang, Ci Song, Tao Pei, Yu Deng, Daojing Zhou, Jie Chen and Dayu Cheng
- 2 **Where England's cities are growing: Evidence from big building footprint data and explainable AI**
Xinyi Yuan, Ziqi Li, Anahid Basiri and Mingshu Wang
- 3 **NeuralTimeCapsule: Continental-Scale Urban Growth Prediction Using Spatio-Temporal Deep Learning**
Rohan Bali
- 4 **Can GeoAI Help Predict Future Deltaic Shoreline Evolution?**
Paul Liu and Muhammad Risha
- 5 **Advancing Spatio-Temporal Forecasting of Vegetation with Extended Context and Climate-Aware Learning**
Wouter Strauven, Orly Enrique Apolo-Apolo, Ben Somers and Stef Lhermitte
- 6 **Half a century of change: using declassified cold war imagery to benchmark carbon stocks in Sahelian drylands**
Toon Lambrecht, Deniz Soysal, Ben Somers and Stef Lhermitte



SESSION 6A

GeoAI for mobility studies (2)

CHAIR: GENNADY ANDRIENKO

- 1 **Generating synthetic citywide cycling trajectories through multi-source data fusion and reinforcement learning: A conceptual model**
Xiao Cai, Elias Willberg, Laura Ruotsalainen and Tuuli Toivonen
- 2 **Trajectory Generation using Profile-Specific Transition Matrices**
Yair Grinberger, Zi Hen Lin and Daniel Felsenstein
- 3 **Generating Individual-Level Full-Day Activity Trajectory Dataset via Large Language Models**
Yezhen Zhang, Zhengzi Zhou and Chen Zhong
- 4 **Generating Training Samples for Autonomous Driving: From Traffic Rules to Maps**
Tianyuan Xiao, Tinghua Ai, Lingrui Yan, Hao Wu and Haohua Zheng
- 5 **Seeing Around the Corner: Fusing Visual Flow and Inertial Sensors for Indoor Pedestrian Navigation**
Noah Meißner, Tim Sieber and Bernd Ludwig
- 6 **A Computational Framework for Assessing Drivers' Dynamic Line-of-Sight at Road Intersections Using 3D Scene Reconstruction from Multi-View Imagery**
Yue Wu, Yuxuan Zhou, Xiaobing Wei, Nico Van de Weghe, Haosheng Huang



SESSION 6B

Weather forecasting, risk modelling and ecological mapping

CHAIR: PAUL LIU

- 1 **Weather Emulators Push the Frontier of Heat Extremes Forecasting**
Cas Decancq, Thomas Mortier, Jessica Keune and Diego G. Miralles
- 2 **Valid Prediction Intervals for Weather Forecasting**
Thomas Mortier, Cas Decancq and Diego G. Miralles
- 3 **Graph deep learning in species distribution models: a spatial simulation**
Reinout Vandenabeele, Stef Lhermitte and Koenraad Van Meerbeek
- 4 **Reinforcement Learning-Guided Spatial Ensemble Modeling for Invasive Species Distribution under Geographic Heterogeneity**
Wenshun Zhang
- 5 **Flood Mapping Using GeoAI and Aerial RGB Imagery**
Marian-Daniel Iordache, Hazan Daglayan, Lisa Landuyt, Nikola Đukić, Tinne Tuytelaars and Tanja Van Achteren
- 6 **Tracing online flood conversations across borders: a watershed-level analysis of geo-social media topics during the 2021 European flood**
Sébastien Dujardin, Dorian Arifi, Sebastian Schmidt, Catherine Linard, and Bernd Resch



SESSION 7A

GeoAI: human aspects, ethics and impact

CHAIR: CHRISTIAN KRAY

- 1 **Responsible GeoAI: Thoughtful Integration of GIScience and AI in the Real World**
Lei Zou, Bing Zhou and Yifan Yang
- 2 **A decision support framework for responsible use of Large Language Models in data discovery within National Spatial Data Infrastructures**
Blessing Kavhu, Ville Mäkinen, Panu Muhli and Juha Oksanen
- 3 **Applied GeoAI Ethics: Accountability, Visualization and Explainability**
Chuan Chen
- 4 **Profiling the Hidden Costs of GeoFM Fine-tuning: Memory and Utilization-Aware Tuning Guidelines**
Eun-Kyeong Kim
- 5 **The urban impact of AI: modelling feedback loops in location-based recommender systems**
Giovanni Mauro, Marco Minici and Luca Pappalardo
- 6 **A roadmap for GeoAI: Definitions, directions, and key challenges**
Noam Gal, David Hanny, Bernd Resch and Amit Birenboim
- 7 **The Role of Human Selective Attention in Urban Scene Perceptions**
Tong Qin, Wim Fias, Nico Van de Weghe, Haosheng Huang



SESSION 7B

Analysis of social and built environments

CHAIR: NATALIA ANDRIENKO

- 1 **Demographic Inference from Social Media Data with Multimodal Foundation Models: Strategies, Evaluation, and Benchmarking**
Hao Yang, Angela Yao, Eric Chang, Hexiang Wang
- 2 **Dwelling yield forecasting with urban foundation models and multi-modal geospatial data**
John Duncan, Bryan Boruff, Alex Saunders and Warin Chotirosniramit
- 3 **AE-MoSE: an AutoEncoder Mixture of Spatial Experts for Geodemographic Classification**
Stef De Sabbata, Pengyuan Liu, Owen Goodwin and Alexander Singleton
- 4 **Spatially Explicit Graph Neural Networks for Epidemic Forecasting: Evidence from Socioeconomic Embeddings**
Fengjiao Li, Meiliu Wu and Anahid Basiri
- 5 **Augmentation of Geospatial Embedding Models with Urban Morphometrics**
Isaac Boates and Hubert Kriebitzsch
- 6 **Interpreting core forms of urban morphology linked to urban functions with explainable graph neural network**
Dongsheng Chen, Yu Feng, Xun Li, Mingya Qu, Peng Luo and Liqiu Meng
- 7 **A Visibility-Aware Framework for Façade-Level Building Height Estimation Using Multi-View Street-View Imagery and Building Footprints**
Yuxuan Zhou, Haosheng Huang, Jinbin Zhang, Shiyu Tang and Nico Van de Weghe



SESSION 8A

LLMs, benchmarking and evaluation

CHAIR: LEVENTE JUHÁSZ

- 1 **A Framework Based on Bloom's Taxonomy for Evaluating Map Reading Skills of Vision-Language Models**
Yangyang Zhao, Haosheng Huang, Feng Mao, Yingpeng Li, Jiping Liu and Jiaqi Hou
- 2 **Introducing the VISQAM Dataset: Toward Automated Map Interpretation**
Efthychia Koukouraki, Ajay Ajay, Ahmad Abubakar, and Yomna Eid
- 3 **GeoFitBench-LLM: A Benchmark for Assessing Large Language Models' Capabilities in Geospatial Data Requirements Elicitation for Geo-Analytic Tasks**
Amirhossein Vahdat, Thierry Badard and Luc Lamontagne
- 4 **Unclassed Choropleth Maps with ChatGPT and Google Gemini**
Michael Peterson
- 5 **Exploring Geographic Relative Space in Large Language Models through Activation Patching**
Stef De Sabbata, Rahul Baiju, Stefano Mizzaro and Kevin Roitero
- 6 **What Does GeoAI Learn About Space? Evidence from DE-9IM Spatial Relations**
Negar Alinaghi and Ioannis Giannopoulos



SESSION 8B

GeoAI for mobility studies (3)

CHAIR: FILIP BILJECKI

- 1 **Trustworthy Generative Human Mobility with LLMs: A Framework for Realism, Feasibility, and Explainability**
Yanbo Pang and Chen Zhong
- 2 **When Agents Get Lost: Dissecting Failure Modes in Graph-Based Navigation Instruction Evaluation**
Farzad Shami, Kimia Abedini, Seyed Hossein Hoessini and Henrikki Tenkanen
- 3 **Fine-grained streetscape assessment of cycling crash risk at urban intersections using street view imagery and explainable AI**
Xiaobing Wei, Lennert Verhulst, Hongkai Gu, Nico Van de Weghe, Haosheng Huang
- 4 **Techniques for interactive visual examination of vessel performance**
Natalia Andrienko, Gennady Andrienko, Dimitris Zissis, Alexandros Troupiotis-Kapeliaris and Giannis Spiliopoulos
- 5 **Spatial patterns of traffic saturation on Flemish highways: a six-year time series cluster analysis**
Lars De Sloover, Gil Glorieus, Haosheng Huang, Frank Witlox, Nico Van de Weghe
- 6 **A Computational Framework for Clustering Vehicle-Cyclist Interactions in Urban Environments Using Qualitative Spatial Representations**
Changbo Zhang, Lars De Sloover, Jana Verdoodt, Olivier Vermeulen, Bart Van Bossuyt, Samuel Van Ackere, Haosheng Huang, Nico Van de Weghe