



2nd FOMLIG 5th MLIGD

2ND WORKSHOP ON FUTURE OF MACHINE LEARNING IN GEOTECHNICS & 5TH MACHINE LEARNING IN GEOTECHNICS DIALOGUE

Geosystems and Geohazards in Digital Era

Program

October 11-13, 2024, Chengdu, China

Oct. 11, Friday Venue: Meeting Room 6-7 (宽客厅), 3rd Floor	
Time	Details
08:00-09:00	Shortcourse Registration: Meeting Room 6-7 (宽客厅), 3rd Floor
Shortcourse: Geotechnical Reliability Analysis: Theories, Methods and Algorithms Chair: Peng Zeng, Chengdu University of Technology	
09:00-10:30	Bayesian analysis: Part 1 Jianye Ching, Taiwan University
10:30-10:40	Coffee Break
10:40-12:00	Bayesian analysis: Part 2 Jianye Ching, Taiwan University
12:00-14:00	Lunch (1933 Café, 3rd Floor) & Break
Shortcourse: Geotechnical Reliability Analysis: Theories, Methods and Algorithms Chair: Jie Zhang, Tongji University	
14:00-14:50	First order reliability method Jian Ji, Hohai University
14:50-15:40	Response surface method Peng Zeng, Chengdu University of Technology
15:40-16:10	Coffee Break
16:10-17:00	Stochastic simulation Te Xiao, Shanghai Jiao Tong University
17:00-17:50	Reliability-based design Jie Zhang, Tongji University
17:50-18:00	Closing Remarks
18:00-20:00	Dinner (1933 Café, 3rd Floor)
Oct. 12, Saturday Venue: Grand Ballroom 3 (蜀风3厅), 3rd Floor	
Time	Details
Opening Ceremony Chair: Kai Cui, Southwest Jiaotong University	
08:30-08:40	Welcome speech Xuedong Yan, President, Southwest Jiaotong University
08:40-08:50	Where geodata meets machine learning Kok-Kwang Phoon, President, Singapore University of Technology and Design
08:50-09:00	Group Photo
Keynote Lectures Chair: Ping Wang, Southwest Jiaotong University; Dong-Mei Zhang, Tongji University	
09:00-09:35	GEON Distinguished Lecture: Digital twins and its application for underground space Hehua Zhu, Tongji University
09:35-10:10	Intelligent construction for drilling and blasting tunnels: dynamic and intelligent decision of supporting structures Chuan He, Southwest Jiaotong University
10:10-10:25	Coffee Break
Keynote Lectures Chair: Jianye Ching, Taiwan University; Jinsong Huang, The University of Newcastle	
10:25-11:00	AI empowered landslide risk assessment Limin Zhang, The Hong Kong University of Science and Technology
11:00-11:35	Digital underground construction: measurement & monitoring Brian Shui, University of Cambridge
11:35-12:10	Digitalized and intelligent technologies for site investigation of large-scale airport engineering and applications Lining Zheng, China Southwest Geotechnical Investigation & Design Institute Co., Ltd.
12:10-14:00	Lunch (1933 Café, 3rd Floor) & Break
Oct. 12, Saturday Venue: Meeting Room 7 (翠客厅), 3rd Floor	
Time	Details
SS1: Data-driven site characterization SS8: Practice of machine learning in constitutive modelling of geomaterials Chair: Takayuki Shuku, Tokyo City University; Pin Zhang, University of Cambridge	
14:00-14:12	Comparison of various conditional random field simulation methods Jianye Ching
14:12-14:24	Estimation of spatially varying geotechnical properties in soft soils using ChatGPT SeongWook Han, Hyunjae Shin, Junho Oh, Hyunki Kim
14:24-14:36	Stratigraphic identification for geotechnical database using large language models Wei Yan, Ping Shen, Wan-Huan Zhou, Jinhao Wu
14:36-14:48	Three-dimensional geological model for stratigraphic uncertainty quantification using Bayesian machine learning Hu Wang, Xingxing Wei
14:48-15:00	Data-driven stress history evaluation of cohesive soils using machine learning with CPT data Daewun Gwak, Taeseo Ku
15:00-15:12	MRF-based site characterization using a cluster Monte Carlo algorithm Takayuki Shuku
15:12-15:24	Towards the intelligent 3D subsurface modelling based on Graph Neural Network using CPT and borehole data Xiaoqi Zhou, Peixin Shi
15:24-15:36	Physical symbolic regression approach for clay constitutive model Yi Zhu, Su Chen
15:36-15:48	Physics-encoded finite element learner for heterogeneous geotechnical problems Xi Wang, Zhen-Yu Yin, Wei Wu, He-Hua Zhu
15:48-16:00	Coffee Break
SS2: Data archiving and machine learning for geotechnical site characterization Chair: Jinsong Huang, The University of Newcastle; Jiawei Xie, The University of Newcastle; Shaohua Jiang, Nanchang University	
16:00-16:12	Surrogate modelling for unsaturated infiltration analysis: a review and comparison of physics-informed data-driven approach Peng Lan, Jingling Su, Sheng Zhang
16:12-16:24	A deep learning and reverse image search framework for efficient utilization of archived tunneling site investigation data Jiawei Xie, Jinsong Huang, Shui-Hua Jiang
16:24-16:36	Advancing urban subsurface mapping: predicting geological interfaces and reconstructing soil stratigraphy with machine learning Zezhou Wang, Yue Hu, Xiangfeng Guo
16:36-16:48	Estimation of the strength characteristics of spatially variable soil using ball penetrometer Zhixuan Li, Jun Liu
16:48-17:00	A discussion on the hierarchical management of soil investigation data: insights from high-density localized sampling Taiga Saito, Yu Otake, Stephen Wu
17:00-17:12	Simplified estimation of liquefaction parameters with unobservable fitting parameters aided by hierarchical Bayesian models and similarity Masayuki Horikoshi, Taiga Saito, Yosuke Higo, Yu Otake
17:12-17:24	Optimizing constitutive modelling of crushable soils using a hybrid genetic algorithm Haibin Xiong, Feng Shan, Shaocheng Dai
17:24-17:36	Research on intelligent evaluation method for core fragmentation degree based on particle size distribution curve and machine learning Zhenkun Wu, Zhong Yuan, Songcheng Tan, Hui Gao, Longchen Duan
17:36-17:48	Three-dimensional geological modeling incorporating multi-source data Zening Zhao, Limin Zhang, Guojun Cai
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 12, Saturday Venue: Meeting Room 3 (悦客厅), 3rd Floor	
Time	Details
SS3: Characterization of spatially varying geotechnical/geological properties by machine learning methods Chair: Tengyuan Zhao, Xian Jiaotong University; Yun Wang, City University of Hong Kong	
14:00-14:12	Geotechnical correlation field-informed and data-driven prediction of spatially varying geotechnical properties Weihang Chen, Jianwen Ding, Zhao Shi, Tingting Wang, David P. Connolly
14:12-14:24	Three-dimensional jointing of subsurface stratigraphy from limited borehole logs and prior geological knowledge using multi-scale Generative Adversarial Network (MS-GAN) Borui Lyu, Yu Wang
14:24-14:36	Comprehensive prediction of geological structural interfaces based on Bayesian model averaging Ziping Deng, Jiajun Chen
14:36-14:48	High-resolution probabilistic characterisation of small strain shear modulus from CPT for offshore wind farms Yu Feng
14:48-15:00	3D stochastic stratigraphic modeling method based on Bayesian method and transfer learning Shu Jiang, Rongjun Zhang, Hant He
15:00-15:12	Prediction of rockhead depth under limited borehole data: a YCZ filtering and estimation method Lei Lei Liu, Zhao Cheng
15:12-15:24	Physics-informed discovery of permeability function for soil consolidation analysis Chao Shi, Yu Wang
15:24-15:36	Mapping of soil thickness in low mountain and hilly areas using machine learning models Shuangquan Li, Wenkai Feng, Xian Shan, Xiaoyu Yi, Xuefeng Tang
15:36-15:48	Stability analysis of reservoir slope under water-level drawdown considering stratigraphic uncertainty and spatial variability of soil properties Fanhua Meng, Huafu Pei, Na You
15:48-16:00	Coffee Break
SS5: Risk-guided geotechnical reliability analysis, design and engineering applications SS3: Characterization of spatially varying geotechnical/geological properties by machine learning methods Chair: Jian Ji, Hohai University; Chong Tang, Dalian University of Technology; JASON PAPAIOANNOU, Technical University of Munich	
16:00-16:12	Development and use of databases of axial loading tests on ACIP piles Zhongzheng Peng, Chong Tang
16:12-16:24	Bayesian updating of probability distributions of structural plane orientations using parametric Bootstrap method Su Ouyang, Shui-Hua Jiang
16:24-16:36	Efficient reliability assessment of 3D slopes with rotated anisotropic random fields using improved upper bound limit analysis Yining Hu, Jian Ji
16:36-16:48	TBM jamming risk warning based on boring data: a Bayesian method Lechen Wang, Xu Li
16:48-17:00	Bayesian quantification of spatial uncertainty in quick clay detection through rotary soundings Jason Papaioannou, Ondria Kangilal, Tin Minh Hue Le, Antenor Biru Tsegaye, Daniel Straub, Jean-Sebastien L'Heureux
17:00-17:12	Application of RFEM combined with K-MCS for probability analysis of foundation capacity Xinshuai Guo, Jun Liu, Ping Yi
17:12-17:24	A hyper-spherical ring-augmented method for slope reliability analysis considering soil spatial variability Tao Wang, Jian Ji
17:24-17:36	Stochastic variational Gaussian process for 3D site characterization Grestis Zinas, Jason Papaioannou, Ronald Schneider, Pablo Cuellar
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 12, Saturday Venue: Meeting Room 6 (宽客厅), 3rd Floor	
Time	Details
SS6: Machine learning-enhanced geotechnical reliability analysis and assessment Chair: Lin Wang, Beijing Normal University; Liang Han, Suzhou University of Science and Technology	
14:00-14:12	Anovel predictive model for estimating the column diameters of three different jet grouting systems Lin-Shuang Zhao, Xiaohui Qi, Yue Chen
14:12-14:24	Slope failure probability prediction with machine learning and adasyn algorithm Kai Zhang, Xiaohui Tan, Shanwei Liu, Zhiqiang Lu, Xiaoliang Hu, Qiao Wang
14:24-14:36	Deep learning-based prediction of tunnel face stability in layered soils using images of random fields Zhenning Zhang, Jian Ji
14:36-14:48	Applicability comparison between normal and copula models for geo-material parametric data Liang Han, Huijun Liu, Wengqiang Zhang, Lin Wang
14:48-15:00	Machine learning for horizontal correlation of offshore monopiles Peiyuan Lin
15:00-15:12	Reliability analysis of pile foundations using physics-informed machine learning methods Zexiong Wu, Xueyou Li
15:12-15:24	An active learning surrogate-centered procedure for geotechnical probabilistic analysis: application to a shallow foundation resting on a slope Adrian Torrico Siacarra, Xiangfeng Guo, Ré Teófilo Burke
15:24-15:36	Reliability analysis and design of offshore wind turbine foundation in spatially variable seabed soil Ping Yi, Xinshuai Guo, Jun Liu
15:36-15:48	Sparse machine learning of geotechnical monitoring data with varied types and spatial dimensions Huanqing Tian, Yu Wang
15:48-16:00	Coffee Break
SS13: Intelligent recognition of geohazards from remote sensing images Chair: Chong Xu, National Institute of Natural Hazards, Ministry of Emergency Management of China; Jie Dou, China University of Geosciences (Wuhan); Wenping Gong, China University of Geosciences (Wuhan)	
16:00-16:12	Accelerating cross-scene co-seismic landslide detection through progressive transfer learning and lightweight deep learning strategies Jie Dou, Anan Dong
16:12-16:24	Earthquake-induced landslide mapping based on trans-UNet and transfer learning Tianhe Ren, Wenping Gong, Xuyang Xiang
16:24-16:36	Geological disasters: research system, data, mechanisms, technology, and applications Chong Xu
16:36-16:48	An integrated open-source system for landslide detection based on remote sensing technology and machine learning Zhan Cheng, Wenping Gong
16:48-17:00	Seismically-induced landslide hazard mapping of Aba region, Sichuan Province for future seismic scenarios Xiaoyi Shao, Chong Xu
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 12, Saturday Venue: Meeting Room 6 (宽客厅), 3rd Floor	
Time	Details
SS7: Application of machine learning and big data in geotechnical practice – opportunities and drawbacks SS16: Application of ML techniques in assessing earthquake-induced geohazards Chair: Haijia Wen, Chongqing University; Xiaohui Tan, Hefei University of Technology	
14:00-14:12	Classification of rock mass grades based on semi-supervised learning Shaoliang Zeng, Yunnan Tao, Honglei Sun
14:12-14:24	Deep transfer learning model for long-term embankment settlement prediction Kaiyue Chen, Shaoliang Zeng, Yunnan Tao, Honglei Sun
14:24-14:36	Deep learning empowered landslide runoff prediction Luyu Ju, Limin Zhang, Te Xiao
14:36-14:48	Combining physical model with neural networks for earthquake site response prediction Hao Zhang, Kelong Zhang, Yu Mao
14:48-15:00	A machine learning-based approach to post-earthquake damage assessment for earth dams Qiang Wu, Dian-Qing Li, Wenqi Du
15:00-15:12	Numerical approach and ANN model coupled prediction method of coverage area of three-dimensional flow-like landslides WeiJie Zhang, Xian-Shan, Jian Ji, Yufeng Gao
15:12-15:24	Neural network-aided decoupled prediction of earthquake-induced slope displacements Mao-Xin Wang
15:24-15:36	Earthquake-induced landslide hazard assessment based on multi-machine learning algorithms in strongly seismic mountainous areas Yingbin Zhang, Peiyi Xu, Jing Liu
15:36-15:48	Ground-motion simulations under a directional long-range condition Adversarial neural network(2D-cGAN) Yanwen Huang, Cheng Yang, Xiaodan Sun, Jurgie You, Dagang Lu
15:48-16:00	Coffee Break
SS14: Resilience for infrastructure SS4: Geotechnical engineering intelligent monitoring Chair: Dong-Mei Zhang, Tongji University; Hua-Fu Pei, Dalian University of Technology; Zhong-Kai Huang, Tongji University	
16:00-16:12	Quantification of resilience for urban traffic tunnel under fire accident Rui Zhu, Dongmei Zhang, Zhongkai Huang
16:12-16:24	A lightweight YOLOv8n-based method for detecting defects in building facades Xiaohan Zhang, Xing Zhu
16:24-16:36	Intelligent decision making on resilience enhancement for urban underground transport infrastructure Binlin Gan, Dongmei Zhang, Zhongkai Huang, Shiyang Ye
16:36-16:48	Resilience analysis of shield tunnel lining under construction disturbance Dongmei Zhang, Wei Zhang, Zhongkai Huang
16:48-17:00	Study on resilience analysis and repair strategies for crossing-fault tunnels based on ensemble learning Lianjie Yang, Chunlei Xin, Wenkai Feng, Fei Yang, Yi Hu
17:00-17:12	Physical data-driven model for earth-rock dams based on deep feature knowledge distillation and finite element method Jichen Tian, Chen Chen, Jianshang Chen
17:12-17:24	Intelligent decision-making of foundation pit risk control measures based on fault tree analysis Kai Yan, Linong Mu
17:24-17:36	Settlement monitoring and prediction of offshore deepwater breakwater based on PS-InSAR and CNN-LSTM-SE Guang Li, Xun Han
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 12, Saturday Venue: Meeting Room 5 (南街厅), 3rd Floor	
Time	Details
SS8: Machine learning and AI in tunnel and underground engineering Chair: Qingling Pan, Central South University; Jindang Zhang, The Hong Kong University of Science and Technology	
14:00-14:12	Integrating multi-source information for intelligent detection of ground properties during earth pressure balanced shield tunneling Guodong Wu, Chao Zhang, Zheng Geng
14:12-14:24	Semi-supervised learning for rock mass classification with imbalanced data in TBM tunnelling Feng Shan
14:24-14:36	Forecasting the driving speed of the TBM using machine learning algorithms Mark Miller, Yong Fang
14:36-14:48	Bayesian Gaussian process for the surrounding rock mass classification in tunneling engineering with model class selection Chao Song, Tengyuan Zhao, Ling Xu
14:48-15:00	Study on prediction of tunneling parameters of super large diameter slurry balance shield Yubo Wang, Yingnan Xiong, Yong Fang, Rongmin Bai
15:00-15:12	Real-time predictive classification method for surrounding rock based on key fragmenting data visualization Zikai Dong
15:12-15:24	A study of interpretable prediction of tunnel squeezing deformation – a hybrid machine learning model Lu An, Ru Zhang, Junlong Sun
15:24-15:36	Physics-informed neural network for predicting lateral response of offshore monopile Qianyu Zhou, Qi Zhang, Charles Wang Wai Ng
15:36-15:48	Machine learning of rock mass classification in tunnel construction using prior geological knowledge and TBM operational data Chentao Zhang, Yu Wang, Xu Li
15:48-16:00	Coffee Break
SS9: Machine learning and AI in tunnel and underground engineering Chair: Honglin Sun, Zhejiang University of Technology; Chao Zhang, Hunan University	
16:00-16:12	Domain Adaptation CNN-GRU Network: A transferable framework for chamber pressure prediction across projects Yu Zhang, Chao Zhang
16:12-16:24	Image-based tunnel face stability recognition using deep learning Jianfeng Wang, Zhiqiang Yao, Yong Fang
16:24-16:36	GeoFilter: shield posture prediction in complex geological conditions Du Han, Yangkai Gong, Chao Zhang
16:36-16:48	DS-SER: A hybrid transfer learning method for tunneling-induced settlement prediction across projects Yi Dai, Chao Zhang
16:48-17:00	Study on predicting existing tunnel settlement induced by shield tunneling based on machine learning Tiansun Gao, Dongming Zhang, Hongwei Huang
17:00-17:12	Bayesian updating of vulnerability assessment for a shield tunnel under adjacent excavation disturbances Hui Chen, Dongming Zhang, Xue Yadong
17:12-17:24	Gradation recognition for TBM rock chips using AI method Yuanen Feng, Limin Zhang
17:24-17:36	Structural health monitoring and warning system for blasting construction of large cross-section complex adjacent tunnels Qingnan Lan, Zhiqiang Zhang, Hongwei Li
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 12, Saturday Venue: Meeting Room 2 (故里厅), 3rd Floor	
Time	Details
SS11: Machine learning for geohazard risk assessment Chair: Peng Zeng, Chengdu University of Technology; Shuai Zhang, Zhejiang University	
14:00-14:12	Machine learning model for assessing the future changes in the occurrence of extreme rain-induced landslides in Guangdong China Ping Shen, Xinlong Zhang
14:12-14:24	Urban construction promotes geological disasters: evidence from susceptibility assessment of urban road collapse in Hangzhou, China Bofan Yu, Huaixue Xing
14:24-14:36	Enhanced dynamic landslide hazard mapping at regional scale coupling machine learning and MT-InSAR techniques Chao Zuo, Tengyuan Zhao, Yong Fang
14:36-14:48	Probabilistic building vulnerability evaluation considering the 3D dynamic interaction processes between landslides and buildings Xiaoping Sun, Peng Zeng
14:48-15:00	Preliminary susceptibility assessment of reservoir landslides using deep transfer learning Ming Peng, Yue Wang, Chenyi Ma
15:00-15:12	Applicability of digital twins in predicting the moisture condition of a road embankment slope during heavy rainfall Kazuhito Oda
15:12-15:24	Assessing the compound flooding risks induced by tropical cyclones in an estuarine area using a holistic framework Liang Gao, Haoxuan Du, Lihui Xu
15:24-15:36	Research on the impact of rainfall threshold on the susceptibility of slope unit landslides based on machine learning Fangyi Yan, Haijia Wen
15:36-15:48	Bayesian transfer learning for dynamic landslide susceptibility assessment in data-scarce regions Lin Tan, Lulu Zhang, Te Xiao, Xin Wei
15:48-16:00	Coffee Break
SS11: Machine learning for geohazard risk assessment SS12: AI-based detection, monitoring, and prediction of geological hazards Chair: Xin Wang, Chengdu University of Technology; Chuang Song, Chang'an University; Kun He, Southwest Jiaotong University	
16:00-16:12	Spatial pattern interpretability of machine learning-based landslide susceptibility under geomorphic differentiation Haijia Wen
16:12-16:24	Machine learning-powered full-process landslide forecasting Te Xiao, Lulu Zhang
16:24-16:36	Hybrid CNN-LSTM framework for predicting rainfall-induced stability of soil, rock, and rock-soil mixed slopes Mansheng Lin, Gongfa Chen
16:36-16:48	Sentinel-1 SAR-based globally distributed landslide detection by deep neural networks Chengyong Fang, Xuanmel Fan, Xin Wang, Lorenzo Nava
16:48-17:00	Intelligent identification of ice avalanche potential dangers based on optimized VGG16 model Daogang Guo, Mingao Tang
17:00-17:12	Self-attention ResNet-50 network improved classification in soil GPR images Jiahe Zhang, Shijin Feng
17:12-17:24	Uncertainty analysis on the number of non-landslides in the spatial prediction of regional landslides Qiang Liu, Qi Wan
17:24-17:36	Advancing reservoir landslide stability assessment via TS-InSAR-LiDAR-GPS observations in three gorges reservoir area, China Jie Dou, Lele Zhang
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 12, Saturday Venue: Board Room (董事会议室), 3rd Floor	
Time	Details
The 8th ISSMGE TC304/TC309 Student Contest Chair: Jason Papaioannou, Technical University of Munich	
14:00-14:15	Enhancing landslide detection through multimodal data and the prediction model uncertainty quantification using entropy Mansheng Lin, Mingjin Yang
14:15-14:30	Data preparation and analysis for landslide susceptibility identification utilizing U-Net algorithm Hyun-Jae Shin, Jun-Ho Oh, Seong-Wook Han
14:30-14:45	Enhancing landslide detection accuracy using mask R-CNN for rapid instance segmentation Honghui Jie, Yue Zhong, Hongpeng Hu, Zhong Yian
14:45-15:00	Probabilistic landslide instance detection from satellite images using U-Net Lin Tan, Leven Huang, Longfei Shi, Haolong Chen
15:00-15:15	A deep learning landslide identification method based on improved masked-attention mask transformer considering topographic features Taowen Nie, Mingfei Hu, Ming Yu, Kaiyuan Xue
15:15-15:30	Landslide instance segmentation method based on DeeplabV3+ Chengyong Fang, Yushuang Fu, Xiaoying Pu, Yiqian Gao
15:30-15:45	Landslide prediction based on random forest and mask R-CNN Yining Hu, Bowen Wang, Siyuan Gao, Bin Tong
15:45-16:00	Coffee Break
GeoTechathon: Potential of LLMs (all guests are welcomed) Chair: Stephen Wu, The Institute of Statistical Mathematics	
16:00-16:10	Special session for the 1st GeoTechathon: Exploring the potential of LLMs (Introduction on hackathon motivation) Stephen Wu, The Institute of Statistical Mathematics
16:10-16:20	A large language model empowered paradigm for site planning and geological modelling Chao Shi, Nanyang Technological University
16:20-16:30	Potentials of large language models in landslide investigation Andy Leung, The Hong Kong Polytechnic University
16:30-16:40	Challenges toward automated parameter setting for a liquefaction analysis using LLM with laboratory testing images Chisato Konishi, OYO Corporation
16:40-16:50	Constructing a domain-specific benchmark dataset for large language models: Insights from Tunnel and underground engineering Mingliang Zhou, Tongji University
16:50-17:00	Q&A for GeoTechathon
17:00-17:15	Open floor panel discussion
17:00-17:45	Introduction to LLM-related technologies Stephen Wu, The Institute of Statistical Mathematics
17:45-18:00	Demonstration of LLM technologies in geotechnics and technical discussion between hackathon members
18:00-18:15	Questions and comments from audiences
18:30-20:30	Banquet Dinner (Grand Ballroom 蜀风厅, 3rd Floor)
Oct. 13, Sunday Venue: Meeting Room 6-7 (宽客厅), 3rd Floor	
Time	Details
FOMLIG Young Forum (all guests are welcomed) Chair: Zheng Guan, University of Macau	
08:30-08:40	Special session for the 1st FOMLIG Young Forum: an introduction Zheng Guan, University of Macau
08:40-09:30	Group discussions Group 1: Characterization of spatially variable geotechnical and geological model Facilitator: Zheng Guan, University of Macau Group 2: Machine learning in tunnel and underground construction Facilitator: Jinchang Zhang, The Hong Kong University of Science and Technology Group 3: Risk assessment in geohazards using machine learning Facilitator: Kong Miao, City University of Hong Kong
09:30-10:00	Outcome presentation and discussions
10:00-10:15	Coffee Break
Oct. 13, Sunday Venue: Meeting Room 1-2 (综合报告厅), 3rd Floor	
Time	Details
Machine Learning in Geotechnics Dialogue (all guests are welcomed) Chair: Dongming Zhang, Tongji University	
08:30-08:35	Introduction on MLIGD: an overview Dongming Zhang, Tongji University
08:35-08:55	Web3.0: emerging infrastructure supporting new data governance model Xiaofeng Ma, Tongji University
08:55-09:10	Differential privacy in geotechnical engineering Stephen Wu, The Institute of Statistical Mathematics
09:10-09:25	Demand of AI empowerment for highway big data Yue Tong, Yunnan Xuanhui Expressway Co., Ltd.
09:25-10:00	Group discussions and summary Challenges in geo-data sharing Facilitator: Andy Leung, The Hong Kong Polytechnic University Venue: Meeting Room 1-2 (综合报告厅) Experience and practice in geo-data sharing Facilitator: Chong Tang, Dalian University of Technology Venue: Board Room (董事会议室)
10:00-10:15	Coffee Break
Oct. 13, Sunday Venue: Grand Ballroom 3 (蜀风3厅), 3rd Floor	
Time	Details
Keynote Lectures Chair: Kok-Kwang Phoon, Singapore University of Technology and Design Zhenyu Yin, The Hong Kong Polytechnic University	
10:15-10:50	ML-based decision on safety risk in tunnel driving Hongwei Huang, Tongji University
10:50-11:25	AI-based solutions for mitigating geological hazards: an overview Filippo Catani, University of Padova
11:25-12:00	Machine learning of limited site-specific borehole data and prior geological knowledge for 3D subsurface geological modeling Yu Wang, City University of Hong Kong
Closing Ceremony Chair: Zi-Jun Gao, Southwest Jiaotong University	
12:00-12:10	MLIGD summary report Dongming Zhang, Tongji University
12:10-12:20	Announcement of 3FOMLIG & closing remarks Kok-Kwang Phoon, Singapore University of Technology and Design
12:30-14:00	Lunch (1933 Café, 3rd Floor)