Asian University Alliance (AUA) Seminar

Smart and Low Carbon City

Handbook

Smart Building and Construction Lab
The Department of Civil and Environmental Engineering
The Hong Kong University of Science and Technology

30th May – 2nd June, 2024
Hong Kong SAR, China

Acknowledgement

Logistics

Time: 30th May – 2nd June, 2024

Location: Mr and Mrs Lee Siu Lun Lecture Theater (LT-K), HKUST, Clear Water Bay, Hong Kong

Online broadcast link[1]:

- Zoom
    - Day 2: https://hkust.zoom.us/j/3910207677?omn=99873359569
    - Day 3: https://hkust.zoom.us/j/3910207677?omn=95687847756
- Bilibili
    - Day 2: http://live.bilibili.com/27798577
    - Day 3: http://live.bilibili.com/27798577

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[1] Only Day 2 and Day 3 will be broadcasted. Day 1 is off the record.

Agenda

Day 1 (31st May, Friday)[2]

9:00-10:50	**Welcome and keynote speech**
Opening and Welcome Speech *Limin ZHANG, Chair Professor, Department Head, The Hong Kong University of Science and Technology*	
新型电力系统背景下跨行业源网荷储技术研究及应用探索 *Borong LIN, Professor, Associate Dean, Tsinghua University*	
分布式能源与电网互联测试标准路线图 *Shiming TIAN, Professorate Senior Engineer, Director, China Electric Power Research Institute* *Zihan GAO, Senior Engineer, China Electric Power Research Institute*	
浙江电网"一键响应"需求侧管理新模式 *Chaoliang WANG, Senior engineer, Deputy Director, State Grid Zhejiang Electric Power Company*	
10:50-12:00	**Session 1. Smart grid**
新型电力系统背景下电网应对复合链生灾害的挑战与思考 *Na LUO, Technical Specialist, State Grid Smart Grid Research Institute*	
双碳目标下算力-电力融合展望 *Xi ZHANG, Technical Specialist, State Grid Smart Grid Research Institute*	
建筑需求侧柔性潜力量化及影响因素分析 *Dan WANG, Postdoc, The Hong Kong University of Science and Technology*	
12:00-13:30	Lunch (Unibistro Restaurant)
13:30-14:40	**Keynote speech**
综合智慧能源关键技术探讨与实践 *Hao JIANG, Director, Smart Energy Research Institute, Shenzhen Energy Group*	
电力友好型空调系统技术路径探索与实践 *Rui YAN, Technical Lead, Intelligent building business group, Midea*	
14:40-15:20	**Session 2. Energy-efficient data center**
蒸发预冷技术在湿热地区数据中心的应用设计与协同控制 *Yundan LIAO, Associate Professor, Deputy Head, Guangzhou University*	
AlphaDataCenterCooling: A virtual testbed for optimizing data center cooling system *Si WU, Ph.D., The Hong Kong University of Science and Technology*	
15:20-15:40	Tea break
15:40-16:50	**Keynote speech**
智慧建造解决方案 *Wei NA, General Manager, Digitalization Center, Shenzhen Ridge Inc.*	
基于舒适性的多联机楼宇数字孪生管理平台构建探索 *Xiang ZHOU, Professor, Tongji University*	
16:50-18:00	**Session 3. High-performance low-carbon building**
Robotics for health monitoring of smart low-carbon infrastructure *Zeyu DUAN, Ph.D., The Hong Kong University of Science and Technology*	

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[2] Official language of Day 1 is Chinese.

	Developing an automatic approach to generate Brick model from Building Information Modelling *Mingchen LI, Ph.D., The Hong Kong University of Science and Technology*
	Optimal chiller sequencing for large-scale commercial buildings *Siqi LI, Ph.D., The Hong Kong University of Science and Technology*
18:00-19:30	Dinner (China Garden Restaurant)
19:30-22:00	Hong Kong night view (Peak Tram to Victoria Peak & Sky Terrace, 山顶缆车与凌霄阁游览)

Day 2 (1ˢᵗ June, Saturday)

9:00-10:20	**Welcome and keynote speech**
	Opening and Welcome Speech *Yike GUO, Chair Professor, Provost, The Hong Kong University of Science and Technology*
	SMART: God or Devil is in the DATA *Khee Poh LAM, Provost's Chair Professor, Former Dean, National University of Singapore*
	Indoor environment creation under the goal of carbon neutrality *Yingxin ZHU, Professor, Former Associate Dean, Tsinghua University*
10:20-12:00	**Session 4. Smart Building**
	Inside the feedback loop: bridging technology and human experience in buildings *Zhun Min Adrian CHONG, Assistant Professor, National University of Singapore*
	Modeling for control: challenges and practices of model based smart control of building energy systems *Zhi'ang ZHANG, Assistant Professor, University of Nottingham (Ningbo)*
	Comparing different parameter identification techniques for optimal control purpose *Parastoo MOHEBI, Ph.D., The Hong Kong University of Science and Technology*
	A knowledge-informed optimization framework for generative design of sustainable buildings *Zhaoji WU, Ph.D., The Hong Kong University of Science and Technology*
12:00-13:30	Lunch (China Garden Restaurant)
13:30-15:00	**Keynote speech**
	Overlooked aspects, hidden potentials and future challenges of AI for better building energy control *Cheol Soo PARK, Professor, Seoul National University*
	From Monitoring-based Problem Identification to Self-Correcting, Optimized Control Technology *Guanjing LIN, Associate Professor, Tsinghua University (Shenzhen)*
	Enhancing Security in Power Systems: A Safe Reinforcement Learning Approach *Liu LIU, Senior Researcher, Tencent AI lab*
15:00-16:00	**Session 5. Smart City**
	The governance impact of smart city initiatives in China: An analysis of 284 municipalities *Lun LIU, Assistant Professor, Peking University*
	Combining Geographic Information System and satellite image for urban-scale building energy modeling *Shihong ZHANG, Ph.D., The Hong Kong University of Science and Technology*
	Explore the potential of Photovoltaic facade on carbon emission reduction and urban heat island mitigation *Liutao CHEN, Postdoc, The Hong Kong University of Science and Technology*
16:00-16:30	**Site visit** HKUST Photovoltaic Integrated Green Roof (PVIGR) experiment platform
16:30-16:50	Tea break

16:50-18:20	**Session 6. RGC Young Collaborative Research Fund C6003-22Y Progress**
Investigating Photovoltaic Integrated Green Roof (PVIGR) Systems through experimental study *Qi ZHOU, Postdoc, The Hong Kong University of Science and Technology*	
Evaluation the solar potential in complex urban environment, a comparative study between Hong Kong and Guangzhou *Man-sing, Charles WONG, Professor, Associate Dean, The Hong Kong Polytechnic University*	
Deep-learning based solar resource assessment and forecasting *Mengying LI, Assistant Professor, The Hong Kong Polytechnic University*	
A Health Perspective to Achieving Carbon Neutrality *Linyan LI, Assistant Professor, City University of Hong Kong*	

Day 3 (2nd June, Sunday)

9:00-10:00	**Keynote speech**
Enhancing thermal management of Electric Vehicles with integrated smart driving components and a fully glass roof design *Ruobing ZHOU, Senior Engineering Manager, Bosch*	
Intelligent Environment Control and Passenger Thermal comfort Improvement for Vehicles *Maohui LUO, Associate Professor, Tongji University*	
10:00-12:00	**Session 7. Smart Vehicle Cabin**
AI-based thermal management in Electric Vehicles *Siliang LU, Senior AI Scientist, Bosch*	
Hazard perception in SAE level 2 vehicles: From mental model to driver training *Dengbo HE, Assistant Professor, HKUST (Guangzhou)*	
Non-invasive measurements of thermal discomfort for thermal preference prediction based on occupants' adaptive behavior recognition *Yanchen LIU, Associate Professor, Guangzhou University*	
Co-optimizing battery, motor, and cabin for Electric Vehicles *Lige ZHAO, Ph.D., The Hong Kong University of Science and Technology*	
12:00-13:30	Lunch (HKUST China Garden Restaurant)
13:30-15:00	**Session 8. User behaviors in electric vehicles**
Exploring Users' Trust in Fully Driverless Vehicles After Their First Ride: An on-road study with traffic variation considered *Zhenyu WANG, Ph.D., HKUST (Guangzhou)*	
Modeling Battery Electric Vehicle Users' Charging Decisions in Scenarios with Both Time-Related and Distance-Related Anxiety *Jiyao WANG, Ph.D., HKUST (Guangzhou)*	
Participants depart from Hong Kong	

Speaker bio

(Sorted by the presentation order)

林波荣，清华大学建筑学院副院长、长聘教授，教育部长江学者特聘教授、首批国家万人科技创新领军人才，2023 年中国工程院院士有效候选人。现任生态规划与绿色建筑教育部重点实验室主任，科技部国家碳中和专家委员会委员，住建部科技委委员兼建筑节能与绿色建筑专委会副秘书长，中国建筑物理分会副理事长，国际建筑性能仿真协会 Fellow。1999 年和 2004 年本科和博士分别毕业于清华大学，长期从事建筑环境营造与低碳节能基础理论和关键技术研究，发表 SCI 论文 150 余篇，H-index 47，Elsevier 中国高被引学者（连续 4 年），World's Top 2% Scientists。国家杰出青年基金暨首批杰青延续基金获得者，主持多项国家自然科学基金重点项目、国家重点研发计划项目。作为第一完成人获国家科技进步奖二等奖 1 项、省部级科技一等奖 4 项，获 2020 年腾讯科学探索奖。

田世明，教授级高工，中国电力科学研究院用电与能效所学术委员会主任，IEC TC8 分布式电源与电网互联标准工作组（JWG10）和全国电力需求侧管理标准化技术委员会（SAC/TC575）委员。长期从事需求响应、分布式能源相关的科研和标准化工作。获国家科技进步二等奖 1 项，省部级科技进步奖 6 项，国家电网公司科技进步一等奖 3 项，2023 年国家电网公司"劳动模范"。发表科技论文 60 余篇，其中全国百佳论文 1 篇，出版智能电网专著 1 部，完成分布式能源接入电网 IEC 国际标准 1 项。

王朝亮，高级工程师，国网浙江营销服务中心检定配送室副主任，获"浙江电力优秀青年工程师奖"，围绕电力装备智能感知与数字化前沿技术领域取得了系列原创技术成果并落地应用，落地立项国网公司首个电气与建筑交叉学科领域的国家重点研发计划项目，牵头建设浙江首个数智化台区，为台区可靠用电提供了一套系统高效的标准化解决方案；研发的"基于配电网的柔性开关"获得第 47 届日内瓦国家发明奖金奖和泰国国家研究委员会杰出发明奖，为破解配电网难题提供了浙江方案。撰写专著 4 部，参与制定国网公司及以上技术标准 24 项，发表学术论文 52 篇，授权发明专利 81 项，获省部级奖励 11 项。

LUO Na, Senior Research Expert at the Institute of Grid Digitalization Technology at State Grid Smart Grid Research Institute CO. LTD. She received the B.Eng. degree in Engineering Physics from Tsinghua University, Beijing, China, in 2013, and the Ph.D. degree in Safety Science and Technology from Tsinghua University, Beijing, China, in 2018. She worked with LBNL from 2018 to 2022 as a Scientist. She joint State Grid Smart Grid Research Institute in 2023. Dr. Luo served as a Technical Advisory Expert in 2022 Climate and Energy Technical Advisory Panel with Lacuna Fund. She has authored two monographs, two book chapters, and over 30 high-quality articles in prestigious international journals and peer-reviewed conference proceedings. Her current research interests include urban building energy resilience, grid emergency under extreme natural disaster, smart grid demand response modeling, energy data curation and analytics, as well as urban microclimate CFD modeling.

ZHANG Xi, Senior Research Expert, State Grid Smart Grid Research Institute Co., Ltd. He is also an honorary lecturer at Imperial College London. He obtained his bachelor's degree in the Department of Electrical Engineering at Tsinghua University and completed his doctoral studies in Electrical Engineering at Imperial College London. He has been extensively involved in research on comprehensive energy system modeling, intelligent control of virtual power plants, and smart building collaborative control. He participated in five UK national level scientific projects and is currently in charge of 5 China national or provincial level technology projects. He has published more than 50 academic papers.

WANG Dan, postdoctoral fellow at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. Prior to joining HKUST, he held a postdoctoral position at Beijing University of Technology. He received his Ph.D. from the Faculty of Architecture, Civil and Transportation Engineering at Beijing University of Technology, supervised by Prof. Wang Wei. His research focuses on smart buildings and model predictive control. He is proficient in EnergyPlus, jEPlus, GenOpt, Modelica, and related building simulations. He currently leads two research projects, including the Youth Funding of the National Natural Science Foundation of China, and has published over 10 SCI papers.

江浩，高级工程师，深能智慧能源科技有限公司研究院副院长。长期从电力能源行业产品研发与项目管理，获省部级科技进步奖二等奖 1 项，参与国家级标准制定 1 项，电力及能源行业标准 4 项，撰写电力专业著作 1 项，发表学术论文 10 余篇、专利 10 余项。主持研发了深圳能源集团综合智慧能源管理平台、虚拟电厂平台、区域集中供冷优化控制装置等能源数字化产品及系统，实现了园区级、区域级、城市级的冷热电碳氢等综合能源的集中管理和优化调度，为能源集团数智服务战略提供坚强支撑。

YAN Rui, the Head of control and analytics team at the advance research center of Midea Building Technologies (MBT). Dr, Yan graduated from Sustainable Building Research Center of University of Wollongong, Australia with focus on data-driven performance evaluation and control optimization for HVAC system. During the time at MBT, Dr. Yan successfully led several key projects including edge-computing based chiller health monitoring and diagnosis system, AI-driven control optimization system for chiller plant, demand response strategies for VRF system and advance control for home energy management system.

LIAO Yundan, Ph.D., associate professor, deputy department head, a high-level talent in Guangzhou, specializes in intelligent control of building energy, energy-saving technology in data centers, and intelligent control of photovoltaic-storage systems. She received her Ph.D. degree from the City University of Hong Kong. She has published over 30 academic papers, presided over 2 national science funds and 10 projects at the provincial, municipal, and university-enterprise cooperation levels. She has participated in more than 10 national and provincial projects, co-edited 2 industry standards. She has been awarded the China Patent Excellence Award, the Guangdong Provincial Science and Technology Progress Award, and the City University of Hong Kong Excellence in Academic Performance Award.

WU Si, Ph.D. candidate at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. I received my Master Degree from Shanghai Jiao Tong University and Bachelor Degree from Dalian University of Technology. My current research area focus on the modelling and optimizing the cooling system for data center. I have published 1 SCI paper.

那威，高级工程师，深圳瑞捷技术股份有限公司数据信息中心总经理，曾在埃森哲、IBM 等多家咨询公司任职高级经理，数字化转型专家，曾就职于某世界 500 强房企数字化管理中心，多次负责数字化转型项目的落地，主持研发了智能生产管理平台以及 LDA 生产风险预警平台。近几年致力于数字化风控研究，搭建首个房地产企业大数据风险控制平台。发表发明专利 5 项，软件著作 10 余项。

ZHOU Xiang, Professor, Vice Dean of School of Energy Engineering, and Deputy Director of HVAC Research Institute, Tongji University. He is also deputy secretary-general of the Shanghai Society of Refrigeration, and vice-director of Thermal Comfort Group, Indoor Environment and Health Branch, Chinese Society for Environmental Sciences. His research interests focus on human thermal comfort and behavior, radiant air-conditioning system, GSHP (Ground source heat pump) system. He is PI of several research projects, including National Natural Science Foundation of China (NSFC), the China National Key R&D Program during the 14th Five-year Plan Period, etc. He has cooperation projects with IVL (Sweden), VTT (Finland), UC Berkeley (U.S.), KIT (Germany) etc.

DUAN Zeyu, Ph.D. candidate at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. I received the bachelor's degree and master's degree in mechanical engineering from Tongji University, Shanghai, China. My current research interests include bio-inspired marine robotics, construction robotics, with applications in Civil and Mechanical Engineering. I have published 3 SCI papers and 5 patents.

LI Mingchen, Ph.D. candidate at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. Prior to joining HKUST, I worked at China Academy of Building Research. I received my Master Degree from Tianjin University. My current research area focus on the development and application of semantic model for smart energy-efficient buildings. I have published 4 SCI papers with Google Scholar Citation of 20.

LI Siqi, Ph.D. student at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. Prior to joining HKUST, I worked at Midea Building Technology Division as a research engineer. I received my master degree from the University of Tokyo. My current research area is optimal control and fault detection of chiller plants.

Khee Poh LAM, Provost's chair professor, former Dean, National University of Singapore. Prof. Lam is an architect, educator and researcher specialising in computational design support systems for total building performance analysis and building diagnostics. He heads Singapore's Centre for Liveable Cities and is an advisory board member of Delos. He has also consulted on building performance for major award-winning projects and certified green buildings in the private and public sectors in Singapore, China and USA. In 2013, Professor Lam was awarded the Alexander Schwarzkopf Prize for Technological Innovation from the US National Science Foundation "for exemplary research contribution to technology innovation and positive impact on technology, industry and the society as a whole". He was conferred the inaugural iBuildSG LEAD Distinguished Fellow by the Building and Construction Authority, Singapore in 2020.

ZHU Yingxin, Professor, former Deputy Dean at School of Architecture, Tsinghua University. She is presently the Vice Head of Key Lab of Ministry of Education on Eco-Urban Planning and Green Building Research, the Chair of National Steering Committee for Higher Education in HVAC, a fellow of ISIAQ Academy, and a fellow of IBPSA. She is the editorial board member of Building and Environment, Energy and Buildings, Building Simulation, Building Performance Simulation, JAABE, and an associated editor of Indoor Air. Prof. Zhu is the PI of a key NSFC project on fundamental research of dynamic thermal comfort, and 11th, 12th and 13th Five-year National Plan Research Projects. She led the IEA-EBC Annex 69 "Strategy and Practice of Adaptive Thermal Comfort in Low Energy Buildings". She have received a number of awards including the 2nd prize of National Science and Technology Progress, Asia-Pacific Heritage Award for Culture Heritage Conservation by UNESCO, "Uichi Inouye Asia International Award" from Japanese SHASE, "Wu Yuanwei HVAC Award" from Chinese Council of HVAC (CCHVAC), "National First-class Course" by Chinese Ministry of Education, etc.

Zhun Min Adrian CHONG, Assistant Professor in the Department of the Built Environment at the National University of Singapore (NUS) and a Fellow of the International Building Performance Simulation Association (IBPSA). His research interest is rooted in addressing the multi-faceted challenges of optimizing building energy efficiency and performance. At the core of this endeavor are his interest in model calibration, uncertainty quantification, and occupant-centric building controls. At NUS, he leads the Integrated Data, Energy Analysis + Simulation (IDEAS) lab, a multidisciplinary group researching the interaction between building performance simulation, measured data, and machine learning. Adrian also serves as a subject editor for the journal Building Simulation and holds the role of Early Career Board Member for the journal Building and Environment.

ZHANG Zhi'ang, Assistant Professor, Program Director, at the University of Nottingham Ningbo China (UNNC). Prior to this, he was a senior algorithm engineer at Alibaba Cloud, leading product development for smart urban energy systems. Dr. Zhang's research focuses on the fusion of artificial intelligence and integrated energy systems at the community and urban scale. He has been developing hybrid modeling and optimal control methods for urban energy systems, including reinforcement learning, machine learning, and Bayesian calibration, among others. Dr Zhang is the principal investigator for governmental and commercial projects worth more than 15 million RMB, working towards the large-scale implementation and commercialization of smart energy algorithms. His research has been implemented and validated in leading companies such as Schneider Electric, Schaeffler, CATL, Volkswagen, and Tongwei Solar, exhibiting significant energy-saving and carbon reduction performance. His research has received best/outstanding paper awards from Energy and Buildings, and the International Conference of Building Physics.

Parastoo MOHEBI, Ph.D. candidate at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. I received my Master's degree from Sharif University of Technology in Energy systems engineering and my Bachelor's degree at Amirkabir University of Technology in physics and Industrial engineering. My current research area is building energy efficiency and optimal control. I have published one SCI paper with Google Scholar Citation of 12.

WU Zhaoji, Ph.D. candidate at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe and Prof. Jack Cheng. I received my bachelor's and master's degree from South China University of Technology. My current research area focuses on performance-based generative design. I have published 5 SCI papers with Google Scholar Citation of 21.

Cheol Soo PARK, Professor of architectural engineering at Seoul National University (SNU). He received a B.S. degree and a M.S. degree from SNU. He earned a Ph.D. degree from Georgia Tech in 2003. Prof. Cheol Soo Park's research interests include advanced building simulation (uncertainty analysis, sensitivity analysis, Bayesian calibration), occupant modeling (Markov chain, agent, random walk), building performance assessment, machine learning, Building Information Model (BIM) to Building Energy Model (BEM), optimal design, and optimal operation of building systems.

LIN Guanjing, Associate Professor of the institute of Future Human Habitats at the Tsinghua Shenzhen International Graduate School, Tsinghua University. She was a researcher at Lawrence Berkeley National Laboratory, United States from 2013 to 2022. She received her Ph.D. in Mechanical Engineering from Texas A&M University, United States, and her MS and BS in Building Science from Tsinghua University, China. Guanjing Lin's research focus on smart building, building energy efficiency and decarbonatization, including building optimal control, fault detection and diagnostics, and building energy analysis.

LIU Liu, Senior Researcher at Tencent AI Lab in Shenzhen, China. He earned his Ph.D. in Electrical Computer Engineering from The University of Texas at Austin and holds a Bachelor of Engineering in Electronic Engineering from Tsinghua University, Beijing. At Tencent AI Lab, Liu leads projects that focus on the integration of decision intelligence and energy applications. Liu addresses critical issues in real-world decision intelligence problems, focusing on dynamics shift, robustness, and safety, etc.. Liu's scholarly work has been featured in top-tier academic forums, including NeurIPS and ICLR, and he continues to contribute to the advancement of machine learning and artificial intelligence through both research and practical application.
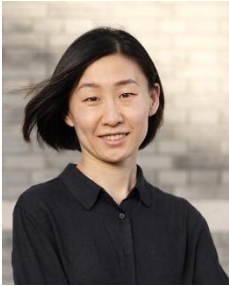
LIU Lun, Assistant Professor in the School of Government, Peking University. She holds a Ph.D. in Land Economy from University of Cambridge. Her research interest focuses on urban governance, smart city, digital governance, and AI & big data-based decision support models. She has published more than forty academic papers on related topics on both multi-disciplinary journals including npj Urban Sustainability and Nature Cities, and top urban studies journals including Cities, Computers Environment and Urban Systems and others. Her papers were listed as ESI highly-cited paper, journal's annual best paper (Regional Science Policy & Practice), and journals' most downloaded articles. She also acts as the Council Member of the Chinese Public Administration Society and the Chinese Regional Science Association, as well as an external expert for International Regional and Urban Cooperation supported by the European Union.

ZHANG Shihong, Ph.D. candidate at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. I received my Master Degree from the State Key Laboratory of Information Engineering in Surveying Mapping and Remote Sensing at Wuhan University. My current research area is GIS & Urban-scale building energy modeling.

CHEN Liutao, Postdoc researcher at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. I received my Ph.D. degree at the same University. My research focuses on developing a cross-scale urban climate-building simulation framework to assess the potential of various sustainable strategies. I have published 8 SCI papers, with Google Scholar citation of 200.

ZHOU Qi, Postdoc at the Hong Kong University of Science and Technology, supervised by Prof. Wang Zhe. I received my Ph.D. Degree from the University of Tokyo, Master Degree from Southeast University, and Bachelor Degree from Tongji University. My current research area focus on the application of machine learning and artificial intelligence to enhance building performance. I have published 18 papers with 187 Google Scholar Citation.

Man-sing, Charles WONG, Associate Dean (FCE) and Professor of the Land Surveying and Geographical Information Department at The Hong Kong Polytechnic University. Prof. Wong was a Fulbright scholar at the University of Maryland. He is leading a number of projects on the use of Remote Sensing in Urban Heat Island Effect, Vegetation and Ecosystems, Aerosol Retrieval, Water Quality Monitoring; GIS in Smart City Tree Management; and iBeacon technology for engaging Learning experiences. He received International Exhibition of Inventions of Geneva (Geneva Inventions Expo) Gold Medal 2021, and 2021 Smart 50 (Smart Cities Connect).

LI Mengying, Assistant Professor in the Department of Mechanical Engineering at The Hong Kong Polytechnic University. Prior to joining PolyU, I received my Ph.D. degree from University of California San Diego, advised by Prof. Carlos F. M. Coimbra. I have worked on various research projects such as high-fidelity solar irradiance forecasting using physical and machine learning models; spectral modeling of longwave and shortwave radiative transfer in the atmosphere; and physics-based estimation of cloud optical properties from cutting-edge remote sensing data (e.g., GOES satellite imaging). Currently, my research areas are expanded to poly-generation renewable power systems, energy storage (hydrogen), passive cooling and desalination.
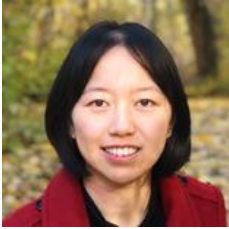
LI Linyan, Assistant Professor in the School of Data Science at The City University of Hong Kong. Prof. Li received her bachelor degree from the Department of Building Science at Tsinghua University, and her master and doctoral degree from the Department of Environmental Health at Harvard University. Her current research focuses on 1) environmental health (environmental epidemiology, spatial analysis, health impact assessment, etc.), 2) healthcare big data analytics (precision medicine, real world evidence, etc).

ZHOU Ruobing "Robin", Senior Engineering Manager at Robert Bosch GmbH, obtained both BEng Mechanical Engineering & M.Sc. Economics & Business from Tsinghua University. As the inaugural class of Schwarzman Scholars, he has spent more than 13 years in mechatronics product development, with full product life cycle management, experience in strategy, R&D, marketing, manufacturing, and sales. His recent focus is leading a team with 20 engineers on the mechanical engineering field of ADAS (Advanced Driving Assistant System) components, including sensors and vehicle computers, covering the design for reliability, simulation and industrialization. As the electrification is also booming in China, he and his team also spent significant effort on the thermal management of ADAS component in vehicles.

罗茂辉，同济大学副教授，博导，上海市领军人才，中国环境科学学会室内环境与健康分会青委会秘书，上海市制冷学会青委会委员，Building Simulation 编委，围绕复杂热暴露环境人体热舒适研究，主持国家自然科学青年基金、十四五重点研发项目子课题、工信部重大专项子课题等科研课题，发表 JRR Q1 论文 40 余篇、英文专著 2 部，谷歌学术被引 4300 余次。

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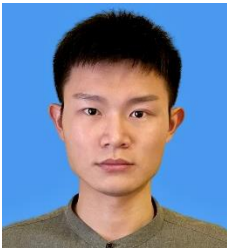
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