Wei Lin

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Biography

Wei Lin is a PhD researcher at Tongji University. His PhD thesis is aimed at the digital transformation of underground infrastructures.
In 2019, he earned his B.Eng. degree from Tongji University and was awarded Shanghai Outstanding Graduate. During 2023 and 2024, He worked as a visiting PhD researcher at the University of Cambridge for one year.

Experience

- PhD Researcher, Tongji University, 03/2021 – Present
- Laboratory Demonstrator, University of Cambridge, 10/2023 – 03/2024
- Visiting PhD Researcher, University of Cambridge, 04/2023 – 03/2024
- Research Intern, Zhejiang Scientific Research Institute of Transport, 08/2022
- Administrative Assistant, Tongji University, 09/2019 – 02/2021
- Graduate Student, Tongji University, 09/2019 – 02/2021
- Engineering Intern, Shanghai Tunnel Engineering Co., Ltd., 07/2018 – 08/2018

Education

- Tongji University, PhD in Engineering, 03/2021 – Present
  Supervisor: Xiongyao Xie
- University of Cambridge, PhD in Engineering, 04/2023 – 03/2024
  Supervisor: Brian Sheil
- Tongji University, Master of Engineering, 09/2019 – 02/2021
- Tongji University, Bachelor of Engineering, 09/2015 – 07/2019
- Putian No. 1 Middle School of Fujian Province, 09/2012 – 07/2015

Honors & Awards

- China Scholarship Council Scholarship, 07/2022
- Engineering Construction Science and Technology Progress Award, Second Prize, 12/2021
- Shanghai Outstanding Graduate, 05/2019
- China National Scholarship, 11/2017
- National Zhou Peiyuan Competition on Mechanics, Second Prize, 06/2017
- Fluor Scholarship, 12/2016
- Xu Aqiong Scholarship, 08/2015

Publications

Journal Papers

1. Lin, W., Sheil, B., Zhang, P., Zhou, B., Wang, C., & Xie, X. (2024). Seg2Tunnel: A hierarchical point cloud dataset and benchmarks for segmentation of segmental tunnel linings. Tunnelling and Underground Space Technology, 147, 105735. https://doi.org/10.1016/j.tust.2024.105735. (SCIE)
2. Li, K., Xie, X., Zhou, B., Huang, C., Lin, W., Zhou, Y., & Wang, C. (2024). Thickness regression for backfill grouting of shield tunnels based on GPR data and CatBoost & BO-TPE: A full-scale model test study. Underground Space, 17, 100–119. https://doi.org/10.1016/j.undsp.2023.10.003. (SCIE)
3. Lin, W., Li, P., Xie, X., Cao, Y., & Zhang, Y. (2023). A novel back-analysis approach for the external loads on shield tunnel lining in service based on monitored deformation. Structural Control and Health Monitoring, 2023, 8128701. https://doi.org/10.1155/2023/8128701. (SCIE)
4. Lin, W., Li, P., & Xie, X. (2022). A novel detection and assessment method for operational defects of pipe jacking tunnel based on 3D longitudinal deformation curve: A case study. Sensors, 22, 7648. https://doi.org/10.3390/s22197648 (SCIE)
5. 邹成路, 林威, 罗文静, 周彪, & 谢雄耀. (2022). 城市轨道交通车站半成岩深基坑围护结构变形特性研究. 城市轨道交通研究, 25(3), 150–155. https://doi.org/10.16037/j.1007-869x.2022.03.032. (PKU)
6. 谢雄耀, 林威, 周彪, & 邹成路. (2022). 半成岩超深基坑围护结构变形与受力特性研究. 结构工程师, 38(1), 164–172. https://doi.org/10.15935/j.cnki.jggcs.2022.01.019.
7. 梁小波, 林威, 徐金峰, 刘志义, & 赵刚. (2022). 滇中红层软岩填料高路堤稳定性分析. 建筑施工, 44(9), 2248–2251. https://doi.org/10.14144/j.cnki.jzsg.2022.09.068.

Conference Papers

1. Lin, W., Xie, X., Zhou, B., Li, P., & Wang, C. (2023). Refined perception and management of ring-wise deformation information for shield tunnels based on point cloud deep learning and BIM. Eighth International Symposium on Life-Cycle Civil Engineering (IALCCE 2023), 3991–3998. https://doi.org/10.1201/9781003323020-490. (EI)
2. Lin, W., Xie, X., Li, P., Xiao, B., Lu, X., Feng, B., Jin, P., & Hu, Y. (2022). Prediction of settlement induced by tidal fluctuation for underwater shield tunnel during service based on historical monitoring data. 2022 8th International Conference on Hydraulic and Civil Engineering: Deep Space Intelligent Development and Utilization Forum (ICHCE), 1042–1047. https://doi.org/10.1109/ICHCE57331.2022.10042697. (EI)

Patents

1. 周应新, 谢雄耀, 周彪, 林威, 张洋宾, 陈思晗, 徐泓睿, 钱正富, 曾维成, 杨俊宏, 唐能, 刘志义, 史明梅, 唐忠林, 胡兴云, 赵刚, & 叶朋果. (2022). 一种用于差异沉降控制的路堤水载预压反馈调节系统. (发明, 公开)
2. 鲁正, 常佳奇, 林威, & 宰秋锐. (2018). 可变阻尼铅芯橡胶阻尼器. (发明, 授

权)
3. 鲁正，林威，常佳奇, & 宰秋锐. (2018). 装配式建筑墙梁节点. (实用新型，授权)
4. 鲁正，宰秋锐，常佳奇, & 林威. (2018). 钢结构装配式建筑墙板节点. (实用新型，授权)

Software

1. 浙江省交通运输科学研究院. (2022). 山岭隧道横向变形点云处理系统 1.0.

Activities

Presentations

1. Computer vision for the segmentation of tunnel point clouds: Dataset and network, 2024 World Tunnel Congress (WTC2024), Shenzhen, 24/04/2024
2. Understanding tunnel point clouds using 3D deep learning, Norwegian Geotechnical Institute, online, 01/11/2023
3. Refined perception and management of ring-wise deformation for segmental linings using 3D deep learning and BIM, Eighth International Symposium on Life-Cycle Civil Engineering (IALCCE 2023), Milan, 04/07/2023
4. The digital twin of shield tunnels for structural analysis, hyperTunnel, online, 05/05/2023
5. The digital twin of shield tunnels for structural analysis, Mott MacDonald, online, 27/04/2023

Posters

1. Prediction of settlement induced by tidal fluctuation for underwater shield tunnel during service based on historical monitoring data, 2022 8th International Conference on Hydraulic and Civil Engineering: Deep Space Intelligent Development and Utilization Forum (ICHCE), Xi'an, 25–27/11/2022

Reviews

1. Underground Space, 3 reviews

Supervision

- Research on intelligent early warning technology for parametric construction of deep foundation pit in soft soil in Shanghai
  Zeyu Wu, Tongji University, Bachelor thesis, 2023
  Supervisor: Xiongyao Xie
  Co-supervisor: Wei Lin
- Ultra-long underground expressway air-ground fusion refinement intelligent measurement and control technology
  Meitao Zou, Tongji University, Bachelor thesis, 2022
  Supervisor: Xiongyao Xie
  Co-supervisor: Wei Lin

Grants

PI

1. China Scholarship Council [202206260174], 04/2023 – 03/2024

2. Shanghai Municipal Education Commission [201710247118], 01/2017 – 01/2018

Researcher

1. Ministry of Science and Technology of the People's Republic of China [2023YFC3806705]
2. Ministry of Science and Technology of the People's Republic of China [2023YFC3806702]
3. Ministry of Science and Technology of the People's Republic of China [2023YFC3806701]
4. Ministry of Science and Technology of the People's Republic of China [2019YFC0605103]
5. Ministry of Science and Technology of the People's Republic of China [2019YFC0605100]
6. National Natural Science Foundation of China [52378408]
7. National Natural Science Foundation of China [52038008]
8. National Natural Science Foundation of China [51978431]
9. Science and Technology Commission of Shanghai Municipality [22DZ1203004]
10. Science and Technology Commission of Shanghai Municipality [20DZ1202004]
11. Science and Technology Commission of Shanghai Municipality [2017SHZDZX02]
12. Department of Transport of Yunnan Province [2021-7]
13. State Grid Shanghai Municipal Electric Power Company [52090W23000B]
14. State Grid Shanghai Municipal Electric Power Company [52090W220001]
15. Guangzhou Metro Design & Research Institute Co., Ltd. [KY-B-2016-018]