

Ningyezi PENG

Tel: +852 67971644

Email: ningyezipepeng@hotmail.com / ningyezi.peng@connect.polyu.hk

Education

- Ph.D. in Urban Informatics, Department of Land Surveying and Geo-Informatics, **The Hong Kong Polytechnic University** (Sep. 2020-Feb. 2025).
Supervisor: Dr Xintao LIU
Dissertation: *Modelling Vulnerability and Resilience of Urban Complex Systems in Response to Recurring COVID-19 Waves*
- M.S. in Cartography and Geographic Information System, School of Resource and Environment Science, **Wuhan University** (Sep. 2017-Jun. 2020). **GPA 3.49/4**
- B.S. in Geographic Information Science, School of Resource and Environment Science, **Wuhan University** (Sep. 2013-Jun. 2017). **GPA 3.69/4.**

Research fields

Complexity Science	Urban Science
Human Mobility	Spatial Epidemiology
Geo-computation/Agent-based model	Geographic Information Science

Publications / research outcomes

- (1) **Ningyezi Peng**, Xintao Liu. The Impact of Urban Scaling Structure on the Local-Scale Transmission of COVID-19: A Case Study of the Omicron Wave in Hong Kong Using Agent-Based Modeling. *Annals of the American Association of Geographers* (2024): 1-19.
- (2) Chun Yin*, **Ningyezi Peng***, Yuchen Li*, Yuanyuan Shi, Shujuan Yang, and Peng Jia. 2023. A Review on Street View Observations in Support of the Sustainable Development Goals. *International Journal of Applied Earth Observation and Geoinformation* 117. Elsevier:103205. doi:10.1016/j.jag.2023.103205.
- (3) Yiming Zhang*, **Ningyezi Peng***, Shujuan Yang, and Peng Jia. 2022. Associations between Nighttime Light and COVID-19 Incidence and Mortality in the United States. *International Journal of Applied Earth Observation and Geoinformation* 112. Elsevier:102855. doi:10.1016/j.jag.2022.102855.
- (4) **Ningyezi Peng***, Yuliang Xi*, Jinmeng Rao, Xiangyuan Ma, and Fu Ren. 2021. Urban Multiple Route Planning Model Using Dynamic Programming in Reinforcement Learning. *IEEE Transactions on Intelligent Transportation Systems* 23 (7). IEEE:8037–8047. doi:10.1109/TITS.2021.3075221.
- (5) **Ningyezi Peng**, Xintao Liu. Path Dependency of Urban Resilience to Recurring COVID-19 Waves: The Role of Initial Invasion Contexts and Urban Scaling Structure. Submitted to *Cities*, under the second round revision.
- (6) **Ningyezi Peng**, Xintao Liu. Modelling Vulnerability and Resilience of Urban Complex Systems During COVID-19: A Case Study of Consecutive Omicron Waves in Hong Kong,

Submitted to *International Journal of Geographical Information Science*, preparing for Resubmission.

- (7) **Ningyezi Peng**, Xintao Liu. Improving health system resilience in response to disasters in Hong Kong. In preparation.

* The co-first authors

Awards / presentations

- presented at **PRSC 2024** (POLYU Research Student Conference) on 29-30 August 2024 in Hong Kong (Presentation title: *Improving health system resilience in response to disasters in Hong Kong*)
- presented at **2024 AAG** (American Association of Geographers) Annual Meeting on 16-20 April 2024 in Hawaii (Presentation title: *Modelling dynamic resilience of urban complex systems in response to disasters: a case study of Omicron waves in Hong Kong*).
- won the Best Presentation Award at **GSCS & ICUI 2023** (Global Smart Cities Summit cum the 3rd International Conference on Urban Informatics) on 20-23 August 2023 in Hong Kong (Presentation title: *Urban scaling structure and local-scale transmission of COVID-19*).
- presented at **CPGIS 2023** (The 30th International Conference on Geoinformatics in 2023) on 19-21 July 2023 in UCL, London. (Presentation title: *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*).

Teaching experience

- Teaching Assistant, The Hong Kong Polytechnic University, Spring 2021
LSGI 2B01: Map Reading and Interpretation
- Teaching Assistant, The Hong Kong Polytechnic University, Fall 2021
LSGI 1D03: Living on a Dynamic Earth

Services

- Member, Local Organizing Committee, AsiaCarto 2024 (ICA Regional Cartographic Conference in Asia), Hong Kong
- Volunteer, GSCS & ICUI 2023 (Global Smart Cities Summit cum the 3rd International Conference on Urban Informatics), Hong Kong

Skills

- proficient in R, Python, Java programming.
 - proficient in mapping design using Adobe Illustrator, CorelDRAW, ArcGIS, QGIS
 - fluent in English and Mandarin
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