ZONGRONG (JASPER). LI

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EDUCATION

University of Southern California   Los Angeles, CA
Master of Science, Spatial Data Science
GPA: 4/4   Expected May 2025
Advisor: Prof. Siqin Wang & Prof. Yi Qi, USC Spatial Sciences Institute

Nanjing Audit University   Nanjing, CN
Bachelor of Economics, Finance
GPA: 3.67/4   May 2022
Advisor: Prof. Chong Peng, Urban Economics Lab

PUBLICATION

[1] **Li, Z**., Xu, J., Wang, S*., Wu, Y., & Li, H. (2024). StreetViewLLM: Extracting Geospatial Information Using Multimodal Chain-of-Thought Large Language Models. *International Journal of Applied Earth Observation and Geoinformation*. (Ongoing)

[2] **Li, Z**., Su, Y., Zhu, C., & Zhao, W*. (2024). BuildingView: Constructing Urban Building Exteriors Databases with Street View Imagery and Multimodal Large Language Model. *7th ACM SIGSPATIAL GeoAI '24*. (Under Review)

[3] **Li, Z.**, Li, Q., Li, H., Wang, S*., & Qi, Y*. (2024). Multi-source Tri-environmental Conceptual Framework for Fire Impact Analysis. *Urban Informatics*. (Under Review)

RESEARCH EXPERIENCE

University of Southern California   Los Angeles, CA
Research Assistant – Mentors: Prof. Siqin Wang, Prof. Yi Qi   September 2023 to Present
- Develop a Multi-source Tri-environmental Conceptual Framework for Fire Impact Analysis, integrating optical, thermal, and demographic data to provide a comprehensive estimation of the 2023 Hawaii wildfire damages;
- Create the StreetViewLLM tool, utilizing multimodal Chain-of-Thought reasoning in large language models for efficient geospatial information extraction;
- Leverage large language models' generative capabilities to enhance the accuracy and speed of wildfire damage predictions through advanced geospatial computation techniques.

The Hong Kong University of Science and Technology (Guangzhou)   Remote
Research Assistant – Mentor: Prof. Wufan Zhao   Jun 2024 to Present
- Develop BuildingView: constructing urban building exterior databases with Street View Imagery and Multimodal Large Language Models, integrating OpenStreetMap, Google Street View, and remote sensing data to create databases for cities like New York, Amsterdam, and Singapore;
- Collect 5 years' worth of urban building exterior indicators from scholars' research to better understand fairness in the built environment across cities;
- Expand the database using multi-source data, including street view imagery and remote sensing, and validate findings with data from third-party real estate transaction platforms.

Corresponding author*, Co-first authors

The Hong Kong Polytechnic University   Remote

Research Assistant – Mentor: Prof. Zhiwei Li   September 2023 to August 2024

- Engaged in a comprehensive study evaluating the impact of floods on megacities globally, focusing on identifying affected regions and populations;
- Utilized Google Earth Engine (GEE) for data acquisition and analysis, leveraging tools such as VIIRS nighttime light data, and global flood databases;
- Analyzed recovery times post-flood events using changes in nighttime light data, assessing regional disparities in vulnerability and flood response.

Nanjing Audit University   Nanjing, CN

Research Assistant – Mentor: Prof. Chong Peng   September 2019 to May 2021

- Analyzed over 3 terabytes of urban data, covering aspects like traffic patterns, housing densities, and public amenities.
- Utilized GIS to map out inefficiencies in urban transportation networks, revealing areas with a 20% longer commute time than the city average.
- Assisted local governance bodies in setting up a geospatial data warehouse, streamlining the data collection and decision-making process.

INDUSTRY EXPERIENCE

City of Hope   Los Angeles, CA

Data Science Intern – Mentor: Dr. Jay Yang   Spring 2024 to September 2024

- Engaged in a pivotal role within a multidisciplinary team to evaluate deep learning models, such as Convolutional Neural Networks (CNNs) and Graph Neural Networks (GNNs), applied satellite imagery for urban health data assessment.;
- Focused on the intersection of urban form, structural racism, and environmental risks, contributing to the development of models that predict disparities in air pollution and urban heat islands;
- Validated methodologies through comprehensive demographic data analysis, with a record of achieving high accuracy in distinguishing socio-economic regions using unsupervised learning techniques.

NetEase Youdao   Beijing, CN

Data Analyst Intern – Business Analysis Department   January 2023 to April 2023

- Cleaned and standardized data from sales teams in more than 50 regions, education quality data from more than 2,000 colleges;
- Created a Tableau data map to help the sales team realize that localized and customized sales may significantly increase sales conversion by 30% within an acceptable cost range;
- Completed the Tiktok online education industry ecological report, and helped the product team enter the relevant market for preliminary research.

BDO   Shanghai, CN

Audit Intern – Energy Company Group   December 2022 to January 2022

- Engaged in annual audit of an energy company and 7 subsidiaries in real estate and textile industry;
- Audited accounts such as fixed assets, intangible assets, profits and account receivables, prepared 25 confirmation letters, conducted 7 fixed asset audits, and drafted 25 working papers;
- Interviewed financial executives about intern control and business process, spotted financial risks related to lack of management, examined statement of cash flow and financial indicators to support going concern assumptions.

TEACHING EXPERIENCE

University of Southern California   Los Angeles, CA

Teaching Assistant – Course: SSCI 581 Concepts for Spatial Thinking   January 2024 to Present

- Develop and grade exams, assignments, and projects, ensuring fair assessment and feedback to facilitate student growth.
- Collaborate with faculty members to enhance curriculum development and integrate innovative teaching methodologies.
- Manage and lead discussion sections, workshops, and lab sessions, encouraging active participation and fostering a collaborative learning atmosphere.

PROJECT

Integrating Urban-Environmental Characteristics with Social Determinants of Health (SDOH) Using Geometric Deep Learning

Mentor: Dr. Jay Yang, City of Hope   Spring 2024 to September 2024
- Integrated urban-environmental characteristics with social determinants of health (SDOH) to better understand cancer disparities at the neighborhood level;
- Developed S2CL, a superpixel simplicial contrastive learning model, which utilizes Geometric Deep Learning (GDL) to analyze satellite imagery and reveal latent urban features;
- Demonstrated that GDL-based models, including S2CL, outperform traditional CNNs in assessing the impact of urban forms on health disparities.

Global Assessment of Flood Resilience on Megacities Using VIIRS Nighttime Light Data

Mentor: Prof. Zhiwei Li, The Hong Kong Polytechnic University   September 2023 to August 2024
- Collaborated with a team to analyze flood risks in megacities, focusing on under-examined low-income regions;
- Utilized DMSP-OLS nighttime light data to create flood sensitivity maps, providing a comprehensive view of flood risks across cities at different developmental stages;
- Addressed the limitations of existing studies by integrating high-resolution data for continuous monitoring and more accurate flood impact assessments.

Cost-Effective Wildfire Assessment for Hawaii's 2023 Wildfires

Mentor: Prof. Yi Qi, University of Southern California   September 2023 to March 2024
- Developed a wildfire assessment model focusing on the 2023 Maui wildfires, integrating public and commercial satellite data for comprehensive analysis.
- Utilized a three-tiered approach combining high-frequency FIRMS data, high-resolution Sentinel 2, and Planet data to monitor and assess vegetation cover impacts using the NDVI index.
- Enhanced continuous wildfire monitoring and precise impact assessments through the integration of high-frequency and high-resolution satellite imagery.

HONOR AND CERTIFICATE

Bronze medal in Kaggle's Child Mind Institute - Detect Sleep States	January 2023
"Outstanding Graduates" (Top 5%)	May 2022
Nanjing Audit University Outstanding Student Comprehensive Scholarship (Top 5%)	October 2021
"Internet+" University Student Innovation and Entrepreneurship Competition Campus Selection (Second Prize)	
	June 2021
"Advanced Individual in Social Practice"(Top 10%)	May 2021
World Chinese Debating Championship Jiangsu Regional Champion	November 2019
Nanjing Audit University Debate Tournament Second Place	May 2019

ADDITIONAL INFORMATION

Applications: ArcGIS Pro, GEE, Python, JavaScript, Java   *Languages*:   Fluent in Mandarin, English