

Jiaxi YU

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EDUCATION

M.S. in Engineering | Sustainable Energy and Environmental Engineering

The University of Osaka

Osaka, Japan

Apr. 2023 – Mar. 2025

GPA: 3.73/4.0

Major Courses: Spatial Design for Symbiotic Environment (S)

Advanced Ecological Engineering of Natural and Social Systems (S)

Frontiers of Sustainability Science (A)

*GPA grading scale: S, A, B, C (4-point grading system)

Thesis: Benchmarking Attention Mechanisms and Consistency Regularization Semi-supervised Learning for Post-flood Building Damage Assessment

B.S. in Agriculture | Landscape Architecture

China Agricultural University

Beijing, China

Sep. 2017 – Jun. 2021

GPA: 3.48/4.0

Major Courses: Basis of Geology (A+)

Computer Aid Landscape Design (A)

Ecology for Landscape Architecture (A)

Introduction of Remote Sensing and GIS (A)

*GPA grading scale: from A+ to F

Thesis: Design of Commercial Renovation Project of Zhong guan cun Pedestrian Street

PUBLICATION

- Yu, J., Fukuda, T., & Yabuki, N. (2025). Benchmarking attention mechanisms and consistency regularization semi-supervised learning for post-flood building damage assessment. *International Journal of Disaster Risk Reduction*, 128, Article 105664. <https://doi.org/10.1016/j.ijdr.2025.105664>
- Yu, J., Fukuda, T., & Yabuki, N. (2024). Combining social media images and bitemporal satellite images for automated detection of damaged areas after flooding. In *Proceedings of the 29th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA 2024)* (Vol. 2, pp. 59–68).

RESEARCH PROJECTS

A Multi-modal Framework for Post-flood Building Damage Assessment Integrating Large Language Models and Semantic Segmentation (Ongoing)

Osaka, Japan

Contribution: Researcher & Author

Jul. 2024 – present

- Developing a novel multi-modal deep learning framework that synergistically integrates visual features from segmentation models with textual context processed by Large Language Models (LLMs).
- Currently in the experimental phase, with a manuscript in preparation for submission to a top-tier journal.

Master Thesis at The University of Osaka: Benchmarking Attention Mechanisms and Consistency Regularization Semi-supervised Learning for Post-flood Building Damage Assessment

Osaka, Japan

Contribution: Researcher & Author

Dec. 2023 – Oct. 2024

- Systematically benchmarked attention mechanisms and consistency regularization methods for post-flood Building Damage Assessment (BDA).
- Identified the potential superiority of prior attention over self-attention mechanisms for the BDA task through comparative analysis.
- Validated the efficacy of image-level consistency regularization for semi-supervised learning, demonstrating its capability to reduce annotation dependency.

Presented Paper (CAADRIA 2024): Combining Social Media Images and Bitemporal Satellite Images for Automated Detection of Damaged Areas After Flooding

Singapore

Contribution: Researcher, Author & Presenter

Apr. 2023 – Nov. 2023

- Capitalizing on low-cost social media data as supplementary information in scenarios where satellite images are sparse, enhances the model's performance.
- The model encoder has been refined to effectively utilize features from diverse data types, including disaster information.

Bachelor Thesis at China Agricultural University: Design of Commercial Renovation Project of Zhong Guan Cun Pedestrian Street

Beijing, China

Contribution: Researcher & Author

Mar. 2020 – Mar. 2021

- Selected as the design site, Haidian District, Beijing, renowned as a significant technology hub representing one of China's earliest developments in commercial information technology. Utilized analytical frameworks

including demographic composition, historical evolution, and locational characteristics to deconstruct the site. Incorporated existing conditions and developer requirements to establish design nodes.

The undergraduate research program of China Agricultural University: Zhejiang, China

Historical evolution of public art materials in Beijing

Contribution: Researcher & Team leader Apr. 2019 – Apr. 2020

- Conducted data compilation on public art pieces in Beijing's central urban area and established a database encompassing the characteristics of public art materials. Carried out correlation analysis based on creation years and materials, integrating public art material classifications with China's modern historical development. Preliminary findings indicate that the utilization of public art materials is constrained by the nation's industrial capacity and economic development status.

ACADEMIC & SOCIAL ACTIVITIES

Research on Mixed Reality for Remote Inspection Systems

Osaka, Japan

Contribution: Research Assistant

Mar. 2024

- Generated high-fidelity 3D models from 2D images using Structure-from-Motion (SfM) pipelines with COLMAP and MicMac to serve as the digital foundation for the MR environment.

Tutoring for new international students, Osaka University

Osaka, Japan

Contribution: Tutor

Oct. 2023 – Feb. 2024

- Provided one-on-one mentorship on navigating university administrative procedures and preparing for academic communication, such as weekly progress reports and seminar presentations.

Phase I project of the Golden Valley government resettlement housing in Jinan

Shandong, China

City, Shandong Province ---- Landscape Project

Contribution: Staff

Nov. 2021 – Feb. 2022

- Assisted in the project management of a residential area project with a total construction area of 650,000 m². Served as a team member with responsibilities including earthwork engineering and tree and shrub greening projects within the residential area.

Phase I Project of the Luoyang Olympic Center in Luoyang City, Henan Province

Henan, China

---- Decoration Project.

Contribution: Staff

Aug. 2021 – Oct. 2021

- Participated in the management of a project with a total area exceeding 45,000 m² and a total investment surpassing 4.6 billion RMB. Served as a team member responsible for the interior decoration construction of a mega sports stadium with a capacity of 60,000 seats, as well as model room construction.
- Provided technical support for construction processes, design milestones, and on-site measurements.

The Magazine *Landscape Architecture*, Stormwater Parametric Management

Beijing, China

Studio

Contribution: Member

Sep. 2019

- Mastered GIS site information analysis and extraction, and Grasshopper data visualization application, and was acquainted with the basic operation of processing.

Sports Department, Student Union, China Agricultural University

Beijing, China

Contribution: Student Cadre

Sep. 2018 – Sep. 2019

- Held college sporting events, including the School Sports Meetings, Freshmen Basketball Tournament, and other college events, such as athlete registration, field organization, and staff deployment.
- Provided behind-the-scenes services for cultural and artistic activities in the College of Horticulture.

Summer Social Practice of China Agricultural University: Poverty alleviation

Shandong, China

research and social practice in Linyi City, Shandong Province

Contribution: Member

Aug. 2018

- Visited poverty villages at the grassroots level in Linyi City, Shandong Province, filled out questionnaires, learned about the results of poverty alleviation work with the village cadres, understood the problems of poverty alleviation work, and applied professional skills to put forward solutions.

HONORS & AWARDS

- 2021 China Construction Eighth Engineering Bureau Second Construction Co. Outstanding Staff
- 2019 China Agriculture University Third Class Academic Excellence Scholarship
- 2019 China Agriculture University Academic Progress Scholarship

TECHNICAL SKILLS

- Language: Mandarin (Native), English (TOEIC:775), Japanese (N1 level)
- Programming Languages: Python, C++, HTML, CSS, Javascript, React
- Software: ArcGIS, ENVI, COLMAP, Unity, CAD, Lumion, Rhino, Sketchup, PS, Microsoft Office