Jinyuan Shao

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Education Background

Purdue University **West Lafayette, United States**
PhD in Forestry and Natural Resources; GPA: 3.6/4 *08/2021-06/2024*
Focus on: Multi-modal Remote Sensing; AI for Forest Inventory
Faculty Advisor: Prof. Songlin Fei

University of Chinese Academy of Sciences **Beijing, China**
M.Sc in Ecology; GPA: 3.5/4; National Scholarship for Graduate Students(top 0.2%) *09/2018-07/2021*
Focus on: Urban Remote Sensing; Earth Vision; Deep Learning

Huaqiao University **Xiamen, China**
B.Eng in Information Engineering *08/2014-07/2018*
Graduation project: Street Tree Extraction on mobile LiDAR Point Cloud

Awards

- Purdue Charles H. Michler Scholarships, 2022.(Award two students each year)
- IndianaView Student Scholarship, 2022.(Outstanding students in geospatial data among Universities in Indiana)
- Purdue Ross Fellowship,2021-2025.(top PhD applicants).
- National Scholarship for Graduate Students,2020.(top 0.2%)
- Merit Student, University of Chinese Academy of Sciences, 2019-2020.(top 5%)
- Level Scholarship, University of Chinese Academy of Sciences, 2019-2020.(top 10%)
- Level Scholarship, University of Chinese Academy of Sciences, 2020-2021.(top 10%)
- Academic Scholarship, University of Chinese Academy of Sciences.(each year)(top 10%)
- Zhongke Dingshi Scholarship, University of Chinese Academy of Sciences, 2021.(top 10%)

Publications

Published

1. Yi-Chun Lin, **Jinyuan Shao**, Sang-Yeop Shin, Zainab Saka, Mina Joseph, Raja Manish, Songlin Fei and Ayman Habib. "Comparative Analysis of Multi-Platform, Multi-Resolution, Multi-Temporal LiDAR Data for Forest Inventory". **Remote Sensing**, 2022, 14(3), 649. (JCR Q2, IF: 4.848)
2. **Jinyuan Shao**, Lina Tang, Ming Liu, Guofan Shao, Lang Sun, and Quanyi Qiu. "BDD-Net: A General Protocol for Mapping Buildings Damaged by a Wide Range of Disasters Based on Satellite Imagery". **Remote Sensing**, 2020, 12(10), 1670. (JCR Q2, IF: 4.848)
3. **Jinyuan Shao**, Quanyi Qiu, Yao Qian, and Lina Tang. "Optimal visual perception in land-use planning and design based on landsenses ecology". **International Journal of Sustainable Development & World Ecology**, 2020, 27(3): 233-239. (JCR Q2, IF: 3.716)
4. Sheng Fang, Kaiyu Li, **Jinyuan Shao**, Zhe Li. "SNUNet-CD: A Densely Connected Siamese Network for Change Detection of VHR Images". **IEEE Geoscience and Remote Sensing Letters**, 2021, Early Access. (JCR Q2, IF: 3.833)
5. Qiang Zhou, Yuanmao Zheng, **Jinyuan Shao**, Yinglun Lin, and Haowei Wang. "An Improved Method of Determining Human Population Distribution Based on Luojia 1-01 Nighttime Light Imagery and Road Network Data—A Case Study of the City of Shenzhen". **Sensors**, 2020, 20(18), 5032.. (JCR Q2, IF: 3.966)
6. Lang Sun, Lina Tang, Guofan Shao, Quanyi Qiu, Ting Lan, and **Jinyuan Shao**. "A Machine Learning-Based Classification System for Urban Built-Up Areas Using Multiple Classifiers and Data Sources". **Remote Sensing**, 2020, 12(1), 91. (JCR Q2, IF: 4.848)

Research Experiences

Platform for urban ecological risk prediction **National Key R&D Program of China**
Sub-topic: Quick response to urban natural disasters *Program participant*

- Designed a model to recognize damaged buildings after natural disasters with CNNs and dual temporal images.
- The model was applied to disaster response in Guangdong Province.
- Published one paper as the first author.

The compactness of Chinese urban spatial form **National Natural Science Foundation of China**
Sub-topic: Principles of urban landscape design *Program participant*

- Proposed an optimal visual perception strategy for urban designers.
- Published one paper as the first author.

Urban intelligent management system based on IoT **Strategic Priority Research Program**
Sub-topic: Machine learning-based classification system for urban built-up areas *Program participant*

- Kernel density estimation for urban point data(such as POI).
- Ensemble learning for urban-built area recognition using multi-source data.
- Published one paper as a co-author.
- Cloud removal for remote sensing imagery via generative adversarial network.

Extracting Trees From Urban Point Cloud **Bachelor Thesis**
Fujian Key Lab of Sensing and Computing for Smart City(SCSC), Xiamen University *02/2018-06/2018*
Supervisor: Prof. Cheng Wang

- Learned about the fundamental principles of deep learning and point cloud.
- Made labels of tree from point cloud for deep learning.
- Developed a model for recognizing trees from urban point cloud based on Pointnet.

Journal Reviewer

- Journal of Forestry Research.
- International Journal of Disaster Risk Reduction

Work Experiences

Internships

Zhongke Chengxin Satellite Technology Co., Ltd **Shanghai, China**
Research Intern: Object Detection in Satellite Images *09/2019-12/2019*

- Developed an object detection algorithm for satellite images based on YOLT.
- Worked on Archaeological-prospection with object detection.

China Academy of Urban Planning & Design **Beijing, China**
Research Intern: Urban Planning with Artificial Intelligence *03/2019-06/2019*

- Analyzed features of the population of Heilongjiang province based on geospatial data.
- Developed a tourist counting system from the camera of attractions based on YOLOv3.

Teaching Experiences

FNR 210 - Natural Resource Information Management **Purdue University**
Leading TA *2022 Spring*

- ArcGIS Pro teaching

Skills

(Deep)Machine Learning	Image Segmentation and Object Detection; Point Cloud Segmentation; Remote Sensing Change Detection; Support Vector Machines and Random Forest.
Mathematics	Probability theory, Statistics, Linear algebra, Calculus
Programming	Python, C++, R, Bash, JavaScript
Geospatial Tools	ArcGIS Pro, QGIS, Google Earth Engine
Point Cloud Tools	Cloud Compare, LASTools
Tools	Git/Github, Jupyter, LaTeX, Matlab
Language Skills	English(Fluent), Chinese(Native)