



Kai Ren

GIS & RS · AGRICULTURE · CLIMATE CHANGE · GEOSPATIAL INTELLIGENCE · SOFTWARE DEVELOPMENT

Curtin University, Perth, Australia

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“You have to believe in yourself. That’s the secret of success.”

Summary

Kai Ren is a Visiting Research Associate at Curtin University and a Ph.D. Candidate at Northwest A&F University. Dedicated to advancing knowledge in GIS and Agriculture through rigorous research and academic inquiry. Passionate about GIS · RS · Agriculture · Climate Change · Geospatial Intelligence and wanna to be an academic excellence.

Education

Curtin University

RESEARCH ASSOCIATE IN GEOSPATIAL ANALYSIS AND SUSTAINABILITY

• School of Design and the Built Environment · Curtin Geospatial Intelligence Lab

Perth, Australia

Mar. 2023 - Dec. 2024

Northwest A&F University

PH.D. STUDENT IN LAND RESOURCES AND SPATIAL INFORMATION TECHNOLOGY

• College of Natural Resources and Environment · State Key Laboratory of Soil Erosion and Dryland Farming on the Loess Plateau, Institute of Water and Soil Conservation

Yangling, China

Sep. 2020 - Dec. 2024

Nanjing Normal University

M.S. IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEM (GIS)

• College of Geographic Sciences · Key Laboratory of Virtual Geographic Environment Ministry of Education (VGE)

Nanjing, China

Sep. 2016 - Jun. 2019

Northwest A&F University

B.S. IN GEOGRAPHIC INFORMATION SYSTEM (GIS)

• College of Natural Resources and Environment

Yangling, China

Sep. 2012 - Jun. 2016

Skills

| | |
|--------------------|--|
| Programming | R, Python, Java, LaTeX, C, C#, C++, SQL, and Machine Learning (Random Forest, Decision Tree, Neural Networks etc.) |
| Software | Google Earth Engine (GEE), ArcGIS Pro, Erdas, ENVI, Illustrator, Eclipse, IntelliJ IDEA, Pycharm, Photoshop |
| Back-end | Java, Spring Boot, Struts - Spring - Hibernate, Flask |
| Front-end | HTML - CSS - JS, Vue |
| Languages | English, Mandarin |

Presentations

GIS Workshop

GAVE A PRESENTATION <SHARING TOOLS AND TECHNIQUES IN DATA VISUALIZATION>

• Introduce and teach the scientific drawing tool Adobe Illustrator and the use of LaTeX tools, and introduce how to build social media matrix.

Perth, Australia

Dec. 2023

6th City+ International Conference (City+@Perth)

PRESENTATION ON THE CONFERENCE DURING SESSION 5 WITH THE THEME OF SPATIAL METHODS.

• Using an integration of machine learning and spatial stratified heterogeneity methods to investigate the spatial disparities and determinants of wheat production in Australia.

Perth, Australia

Sep. 2023

Publications

- **Author:** Identifying Climate and Environmental Determinants of Spatial Disparities in Wheat Production Using a Geospatial Machine Learning Model. *Computers and Electronics in Agriculture*. (Under review)
- **Co-author:** Yang, L., Luo, P., Zhang, Z., Song, Y., **Ren, K.**, Zhang, C., Awange, J., Atkinson, P.M. and Meng, L., 2024. A spatio-temporal unmixing with heterogeneity model for the identification of remotely sensed MODIS aerosols: Exemplified by the case of Africa. *International Journal of Applied Earth Observation and Geoinformation*, 132, p.104068. [url](#)
- Zhang, X., Song, Y., Dewan, A., Guo, Z., Cao, X., Bie, Q., Xie, Y., Ma, X., **Ren, K.**, Zhang, H. and Xi, G., 2024. Ecological influence of oasisation on peripheral regions. *International Journal of Applied Earth Observation and Geoinformation*, 132, p.104004. [url](#)
- **Conference:** **Ren, K.** & Song, Y. (2023). Local spatial heterogeneity of Wheat Yields in Western Australia. In *Proceedings of City+2023@Perth International Conference on Geospatial Big Data and Artificial Intelligence for Cities*. Perth, Curtin University.
- **Software Copyright:** Structural Surface Recognition and Intelligent Analysis System of Layered Geological Body. (No. 2019SR0706808)
- **Software Copyright:** Dianchi Lake Water Body Cyanobacteria Bloom Drift Simulation System. (No. 2018SR955442)

- **Software Copyright:** Simulation System of Total Suspended Solids in Large Water Bodies. (No. 2018SR798096)
- **Software Copyright:** Hydrogeological Modeling and Simulation System. (No. 2017SR427979)
- **Software Copyright:** 3D Modeling and Analysis System of Underground Space. (No. 2017SR431955)
- **Software Copyright:** Multi-Dimensional Grid Adaptive Generation System For Geoscience Simulation. (No. 2017SR374939)
- **Software Copyright:** Dynamic Visualization System For Geoscience Model Simulation. (No. 2017SR374929)

Peer Review

- Resources, Conservation and Recycling (IF 11.2)
- International Journal of Applied Earth Observation and Geoinformation (IF 7.6)
- Journal of Spatial Science (IF 1.0)
- GIScience & Remote Sensing (IF 6.0)
- Geoscientific Model Development (IF 4.0)

Experience

ISPRS Technical Commission IV Symposium 2024

CONFERENCE STAFF

- Assist in the management and organization of the Conference.

Perth, Australia

22 -25 Oct. 2024

The 10th International Conference on Innovative Production and Construction (IPC 2024)

COMMITTEE AND CONFERENCE STAFF

- Participate in organizing conferences and manage the official website.

Perth, Australia

11 & 12 Jul. 2024

City+2023@Perth International Conference

ORGANIZER AND CONFERENCE STAFF

- Participate in organizing the conference and conducting all of the work during the conference.

Perth, Australia

8 - 10 Sep. 2023

GISphere

COMMUNITY VOLUNTEER

- Organize and edit GISInfo Study Abroad Guide, operate the official Wechat account and study abroad Wechat group for study abroad infos.

Perth, Australia

Dec. 2022 - Present

Activities

Visited Rio Tinto (the world's Top 2 largest metals and mining corporation)

Feb. 2024, Perth, Australia

Australian-French Association for Research and Innovation (AFRAN) Forum

26 Oct. 2023, Perth, Australia

Vicarious calibration of the NASA PACE mission: deployment of the MarONet (Marine Optical Network) off Perth

20 Oct. 2023, Perth, Australia

Precision Agriculture meeting at Centre for Crop and Disease Management, Curtin University

6 Sep. 2023, Perth, Australia

Project exchange meeting at Main Roads Western Australia

Mar. 2023, Perth, Australia

Honors & Awards

2024 **International Conference Committee**, One of the Committees of an the 10th International Conference on Innovative Production and Construction (IPC 2024)

Perth, Australia

2023 **International Conference Committee**, One of the Organizers of an International Academic Conference, City+2023@Perth, with the theme of Geospatial Big Data and Artificial Intelligence for Cities

Perth, Australia

2022 **Bronze Award (Provincial Level)**, in the 11st Challenger Cup Shaanxi University Student Entrepreneurship Plan Competition

Xi'an, China

2022 **Silver Award**, in the 10th Challenge Cup College Student Entrepreneurship Plan Competition of Northwest A&F University

Yangling, China

2019 **Outstanding Graduate**, Nanjing Normal University

Nanjing, China

2018 **Excellent Postgraduate (Four times)**, Nanjing Normal University

Nanjing, China

2017 **First-class scholarship (Two times)**, Nanjing Normal University

Nanjing, China

2015 **Excellence Award**, Organize the pastoral envoy team of Northwest A&F University and won the "Excellent Award" at the university level

Yangling, China

2015 **Excellence Award**, The National Science and Technology Innovation Project Numerical Simulation and Mechanism Research of Loess Slope Cultivated Land Microtopography

Yangling, China

2014 **Excellent Award**, Organize the activity of Three Visits to the Countryside, Investigation Service in Ansai Comprehensive Test Station of Soil and Water Conservation, and won the Excellent Award at the school level

Yangling, China