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   *Perth, Australia*

RESEARCH ASSOCIATE IN GEOSPATIAL ANALYSIS AND SUSTAINABILITY   *Mar. 2023 - Dec. 2024*

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

Northwest A&F University   *Yangling, China*

PH.D. STUDENT IN LAND RESOURCES AND SPATIAL INFORMATION TECHNOLOGY   *Sep. 2020 - Dec. 2024*

- 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

Nanjing Normal University   *Nanjing, China*

M.S. IN CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEM (GIS)   *Sep. 2016 - Jun. 2019*

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

Northwest A&F University   *Yangling, China*

B.S. IN GEOGRAPHIC INFORMATION SYSTEM (GIS)   *Sep. 2012 - Jun. 2016*

- College of Natural Resources and Environment

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   *Perth, Australia*

GAVE A PRESENTATION <SHARING TOOLS AND TECHNIQUES IN DATA VISUALIZATION>   *Dec. 2023*

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

6th City+ International Conference (City+@Perth)   *Perth, Australia*

PRESENTATION ON THE CONFERENCE DURING SESSION 5 WITH THE THEME OF SPATIAL METHODS.   *Sep. 2023*

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

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

- International Journal of Applied Earth Observation and Geoinformation (IF 7.5)
- Resources, Conservation and Recycling (IF 13.2)
- Journal of Spatial Science (IF 1.9)

Experience

ISPRS Technical Commission IV Symposium 2024
CONFERENCE STAFF

Perth, Australia
22 -25 Oct. 2024

- Assist in the management and organization of the Conference.

The 10th International Conference on Innovative Production and Construction (IPC 2024)
COMMITTEE AND CONFERENCE STAFF

Perth, Australia
11 & 12 Jul. 2024

- Participate in organizing conferences and manage the official website.

City+2023@Perth International Conference
ORGANIZER AND CONFERENCE STAFF

Perth, Australia
8 - 10 Sep. 2023

- Participate in organizing the conference, conducting media publicity work for the conference, managing submissions, taking photos during the conference, and issuing conference certificates.

GISphere
COMMUNITY VOLUNTEER

Perth, Australia
Dec. 2022 - Present

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

Activities

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

Perth, Australia
Feb. 2024

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

Perth, Australia
26 & 27 Oct. 2023

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

Perth, Australia
20 Oct. 2023

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

Perth, Australia
6 Sep. 2023

Project exchange meeting at Main Roads Western Australia
ATTENDEE

Perth, Australia
Mar. 2023

Honors & Awards

Year		Location
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 11th 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*
2016	**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*
2016	**Deputy League Secretary,** Served as the Deputy League Secretary of the Class	*Nanjing, China*
2016	**Outstanding Undergraduate Thesis,** Northwest A&F University	*Yangling, 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 League Member,** Northwest A&F University *Yangling, China*

2014 **Social Practice Model,** Northwest A&F University *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*