

Kangning (Ken) Huang

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EDUCATION

Yale University, New Haven, CT, USA

Doctoral Student, School of Forestry and Environmental Studies (Advisor: Prof. Karen C. Seto)

Sun Yat-sen University, Guangzhou, P. R. China

2014, M.S., Cartography and Geographic Information System (Advisor: Prof. Xia Li)

Sun Yat-sen University, Guangzhou, P. R. China

2011, B.S. (honor), Geographic Information System

RESEARCH INTERESTS

Land Use/Cover Dynamics Modeling; Hydrological Modeling; Spatial Multi-objective Optimization; Data Assimilation; Remote Sensing Image Processing.

PEER-REVIEWED JOURNAL PUBLICATIONS

ResearcherID: [H-3905-2013](https://orcid.org/0000-0001-9000-0001); Sum of citations: 17; h-index = 2.

Jiayong Liang, Xiaoping Liu, **Kangning Huang**, Xia Li, Xun Shi, and Yaning Chen. Improved snow depth retrieval by integrating microwave brightness temperature and visible/infrared reflectance. *Remote Sensing of Environment*. 156: 500-509. (IF: 4.769)

Jiayong Liang, Xiaoping Liu, **Kangning Huang**, Xia Li, Dagang Wang, and Xianwei Wang. 2013. Automatic registration of multi-sensor images using an integrated spatial and mutual information (SMI) metric. *IEEE Transaction on Geoscience and Remote Sensing*, 52(1): 603-615. (IF: 3.467)

Kangning Huang, Xiaoping Liu, Xia Li, Jiayong Liang, and Shenjing He. 2012. An improved artificial immune system for seeking the Pareto front of land-use allocation problem in large areas. *International Journal of Geographical Information Science*, 27(5): 922-946. (IF: 1.613, Citations: 6)

Xiaoping Liu, Xia Li, Xun Shi, **Kangning Huang**, and Yilun Liu. 2012. A multi-type ant colony optimization (MACO) method for optimal land use allocation in large areas. *International Journal of Geographical Information Science*, 26(7): 1325-1343. (IF: 1.613, Citations: 9)

PAPERS IN REVIEW AND IN PREPARATION

Kangning Huang, Jiayong Liang, Xia Li, Xiaoping Liu. The effects of scale on the assimilation of GRACE water storage data. (in preparation)

Shuli Chen, **Kangning Huang**, Jiayong Liang, Xiaoping Liu, and Li Zhuo. Robust multi-sensor images registration by combining local self-similarity (LSS) matching and mutual information (MI). *IEEE Transaction on Geoscience and Remote Sensing*. (under review)

CONFERENCE PRESENTATIONS

Kangning Huang, Xia Li, Jiayong Liang and Xiaoping Liu. Improving un-gauged hydrological modeling by assimilating GRACE Terrestrial Water Storage data. Presented at the 2013 AGU Fall Meeting, San Francisco, CA, USA, December 2013.

Kangning Huang, Xiaoping Liu, Xia Li, and Jiayong Liang. An Artificial Immune System for Multi-objective Land-use Allocation (AIS-MOLA). Presented at the 20th International Conference on GeoInformatics, Hong Kong SAR, China, June 2012.

PROJECT EXPERIENCE

2011 - 2014 — **Research assistant, in the project “Theory And Methodology Of Space-Air-Ground Integrated Earth Observation Network”, funded by the National Program on Key Basic Research Project of China (973 Program), Grant No. 400830532**

- Designed an efficient auto-registration algorithm for multi-source images.
- Improved the un-gauged SWAT model by assimilating GRACE data.

2010 - 2012 — **Research assistant, in the project “Spatial-Temporal Land-Use Resources Allocation Based On Decision Agents And Dynamic Multi-Objective Optimization”, funded by the National Natural Science Foundation of China, Grand No. 40901187**

- Programmed and tested the multi-type ACO algorithm for land use allocation.
- Proposed an improved AIS algorithm for multi-objective land use allocation in large areas.

2010 - 2011 — **Co-Investigator, in the project “Algorithms Of Automatic Multi-Model Remote Sensing Image Registration Based On Mutual Information And Swarm Intelligence”, an undergraduate research project funded by Sun Yat-sen University**

- Proposed a new similarity metric for auto-registering multi-model images.

2010 - 2011 — **Research assistant, in the project “Study Of The Scale And Spatial Patterns Of Construction Land Use In Baiyun District, Guangzhou”, funded by local government**

- Simulated future urban expansion using Cellular Automata.

2009 - 2010 — **Programmer, in the development of Geographical Simulation and Optimization System (GeoSOS), led by Professor Xia Li.**

- Programmed the module of ANN-CA based land use change simulation.

JOURNAL REVIEWER

Frontiers of Earth Science

International Journal of Geographical Information Science

ADWORDS & HONORS

2012 — **National Scholarship** of R. P. China for Graduate Student (7/98)

2010 — **2nd Prize** of ‘ESRI-Cup Contest of GIS Software Development for Chinese College Students’ (top 4 out of 88 teams)

2010 & 2009 — two consecutive times of **National Scholarship** of R. P. China for Undergraduate Student (7/400)

2010 & 2009 — two consecutive times of **1st-Class Scholarship** of Sun Yat-sen University for Excellent Undergraduate Student (3/55)

SKILLS & CERTIFICATES

Proficient with Matlab and Mathematica programming, and familiar with C#, Java, Fortran language.

Proficient with mainstream GIS and RS softwares, such as ArcGIS, ENVI, eCognition, and etc.

Familiar with optimization and modeling techniques, such as Cellular Automata, Artificial Immune System, Ant Colony Optimization, Multi-objective Optimization, Kalman Filter, and etc.

Accomplished the graduate-level Coursera Online course—‘*Probabilistic Graphical Models*’ provided by Stanford University, with distinction (earned 88.1% score).