Rendsburger Landstraße 367a
24111 Kiel
Germany
+49-155-607-95115
songwang.us@gmail.com
sungwongca.github.io
sungwongca
0009-0008-1940-8088
Song-Wang-91
dDJqip4AAAAJ

Song Wang

Education and experience

2022–2024 **Academic Affairs Office Staff**, *Guangzhou College of Technology and Business*
Research Management

2017–2022 **Police Technician**, *** Public Security Bureau*
Crime prevention and big data integration

2015–2017 **IT Director**, *Guangdong Yueyun Traffic Rescue Co., Ltd.*
Traffice big data project: One-click Rescue Platform for Guangdong Province's highways LBS

2014–2015 **Police Technician**, *** Public Security Bureau*
Crime prevention and telecom big data

2011–2014 **Master of Science**, *Shanghai Ocean University*, China,
Environmental Science (Ocean remote sensing and GIS)

2010–2011 **Laboratory Technician**, *Henan Agricultural University, China*
Management of the Information Security Laboratory

2006–2010 **Bachelor of Science**, *Henan Agricultural University*, China,
Electronic Information Science and Technology (Information Security)

Bachelor's Thesis: Design and Application of an Automatic License Plate Recognition System

Publications

1 Z. Han, W. Huo and **S. Wang**, "Retrieval of Sea Surface Temperature from AMSR-E and MODIS in the Northern Indian Ocean," 2012 2nd International Conference on Remote Sensing, Environment and Transportation Engineering, Nanjing, China, 2012, pp. 1-4, doi: 10.1109/RSETE.2012.6260714. (2012)

2 Zhao Ning,Han Zhen,**Wang Song**.A Segment-Based Seawater Temperature Model by Using the Relative Gradient Method[J].Periodical of Ocean University of China,2014,44(09):25-29+52.DOI:10.16441/j.cnki.hdxb.2014.09.003. (2014)

3 **Wang Song**,Han Zhen.Design and implementation of Arctic Ocean sea ice satellite remote sensing information system based on Flex Viewer[J].Journal of Shanghai Ocean University,2014,23(04):623-628. (2014)

Software copyright

1. Sea ice dataset downloader. (Han Zhen, **Wang Song**, Liu Xianbo, Zhou Weichen, **2013SR053169**)
2. Remote sensing data downloader. (Han Zhen, **Wang Song**, Huo Wenjuan, Zhao Ning, **2013SR053162**)

China patents

1. Wang Congjun.Chen Xinjun.Yang Mingxia.Guo Xiaoxia.Fang Zhou.Li Jianhua.**Wang Song**.Song Linan.Geng Long.Fan Zuqin.Zhang Xiang.Shen Tuao.Jia Wuju.Yu Wei.Yi Qian. Squid Dissection Knife[P]. Shanghai CN302432226S,2013-05-08. (2013)
2. Wang Congjun.Chen Xinjun.Yang Mingxia.Yu Wei.Jia Wuju.Guo Xiaolei.Song Linan.**Wang Song**.Xu Jie.Ding Qi.Jin Yue.Fang Zhou. Squid Tentacle Knife[P]. Shanghai CN203401497U,2014-01-22. (2014)

Research projects and experiments

2011-2014	National Development and Reform Commission Satellite High-Tech Industrialization Demonstration Project (Investigator)
2012-2013	Squid Dissection Experiment (Investigator)
2012-2013	Arctic Ocean Sea Ice Satellite Remote Sensing Information System (Leading)
2015-2018	Guangdong Province Road Rescue Information System (Co-leading)

Interests

1. Remote sensing and GIS: signal processing and digital image processing
2. Complex problems in human society and the environment: data and modeling
3. Sea ice: anomalous and extreme events/driving factors and future change
4. Digital music streaming: encryption, decryption, and protection

Skills

Computer	Python/GIS/Hardware
Language	Chinese/Intermediate English/Elementary German/Elementary Cantonese

Master thesis

Title **Arctic Sea Ice Satellite Remote Sensing Information System**

Supervisor Prof. Dr. **Zhen Han**

Abstract The formation of sea ice results from the freezing of seawater at low temperatures, and sea ice is the most significant surface feature in the Arctic Ocean. As one of the largest cold sources on Earth, it influences climate change, ecosystems, and human living environments on various temporal and spatial scales. Over the past forty years, satellite remote sensing data have shown a continuous reduction in Arctic sea ice, driven by climate change and intensified human activities. Specifically, summer sea ice extent and concentration have decreased sharply, and the proportion of multi-year ice has declined. Under the impact of the albedo feedback mechanism, sea ice melting is accelerating, further amplifying its effects on climate change. With the expansion of sea ice melting, more open water areas have emerged in the Arctic Ocean, presenting significant opportunities for the shipping industry. Satellite remote sensing is one of the most effective methods for monitoring Arctic sea ice. Over more than 40 years of satellite monitoring, a vast amount of data on Arctic sea ice has been collected. Developing an Arctic sea ice satellite remote sensing information system that integrates data sharing, visualization, and statistical analysis functions is crucial for the effective utilization of these valuable data resources. This study designs and preliminarily implements an Arctic sea ice satellite remote sensing information system based on an open-source Web GIS (Web Geographic Information System) framework. Using this system, a brief analysis of the spatiotemporal distribution characteristics of Arctic sea ice was conducted. The research yields the following findings and conclusions: 1. Under the open-source Flex Viewer (ArcGIS Viewer for Flex) framework, the system was developed using Rich Internet Applications (RIA) technology and Web GIS technology. The system is characterized by powerful GIS functionalities, user-friendly interfaces, platform independence, high development efficiency, low costs, and short development cycles. It provides an effective solution for the web application of Arctic sea ice remote sensing data collection, query, spatial analysis, and real-time data services. 2. Some critical issues encountered during the system development were preliminarily addressed, such as remote satellite remote sensing data downloading and local classification storage, custom widget development, and real-time updates of maps and data. 3. Based on the Arctic sea ice satellite remote sensing information system, statistical analyses of the extent and area of Arctic sea ice since 1979 were conducted. Trend lines for annual averages, September averages, March averages, and seasonal averages were fitted, and their expressions were derived. Additionally, using the Mann-Kendall non-parametric test, the spatiotemporal distribution and trends of Arctic sea ice were analyzed.