

KEXIN SONG

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RESEARCH INTEREST

Data fusion, land change detection, time series analysis, artificial intelligence, and risk assessment.

EDUCATION

University of Connecticut 2020 – 2024 (expected)

Ph.D. candidate in Natural Resources and the Environment

Relevant Courses: Remote Sensing Image Process, Python Scripting for Geospatial Analysis, Landscape Ecology, Population & Community Ecology

University of Miami 2018 – 2020

M.S. in Meteorology and Physical Oceanography

Relevant Courses: Passive Remote Sensing, Active Remote Sensing, Introduction to Atmospheric Dynamics, Geophysical Fluid Dynamics, Statistics for Environmental Management

Ocean University of China 2014 – 2018

B.S. in Marine Technology

RESEARCH EXPERIENCE

Graduate Research Assistant 2020 – 2023

Neal Real-time Assessment of Forest Risk to Infrastructure Using Satellite Time Series (Advisor: Prof. Zhe Zhu)

- Developed a new algorithm for satellite image fusion – the first operational approach for global applications.
- Performed forest disturbance detection and disturbance agent classification and delivered improved forest health maps for Connecticut roadside and right-of-way areas.
- Conducted tree failure risk assessment using remote sensing and environmental data to help the utility mitigate tree-caused power outages.

Master Thesis 2018 – 2020

Accuracy Assessment of Summertime Reanalysis and Passive Microwave Sea-ice Concentration (SIC) Products in The Central Arctic (Advisor: Prof. Peter J. Minnett)

- Analyzed the time series of summertime Arctic sea ice concentration (SIC) products from passive microwave and reanalysis.
- Conducted accuracy assessment of SIC products using MODIS imagery and multi-product ensemble SIC fields.

TEACHING EXPERIENCE

Teaching Assistant for NRE 3535 Remote Sensing of Environment Fall 2023

CONFERENCE PRESENTATIONS

AGU Fall Meeting 2022 (Talk)

Title: *Improved Subtle Change Detection Using Landsat and Sentinel-2 Data Fusion: A Study of Spongy Moth Outbreaks in New England Forests.*

AGU Fall Meeting 2021 (Poster)

Title: *Forest Disturbance Monitoring at 10 m Spatial Resolution Using Sentinel-2 Time Series.*

OTHER EXPERIENCE

2020.03	Unidata Users Workshop, University of North Carolina
2019.08	Oceanhackweek, University of Washington
2019.08	NASA JPL Summer School on Satellite Observations and Climate Models
2019.05	Volunteer at Hempel World Cup Series for sailing, Miami
2018	Graduate Student Representative, University of Miami

SKILLS

Python: Satellite data acquisition, image processing with *GDAL*, deep learning with *PyTorch*, statistical analysis with *Numpy*, *Pandas*, and *Seaborn*, data visualization with *Matplotlib* and *Cartopy*, and geospatial analysis with *Arcpy* and *Xarray*.

Matlab: Time series analysis, regression, and machine learning.

R: Statistical analysis such as T-test, ANOVA.

Linux: Knowledge of system operation commands; Scripting and automation such as data acquisition with bash scripts.

HPC: 3-year experience in parallel computing using UConn HPC and distributed High Throughput Computing (dHTC).

Other skills: SQL, ArcGIS, ENVI, VScode, Google Earth Engine