LUO Junshen

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SUMMARY

Research Interest: My research is primarily focused on remote sensing images interpretations and applications, especially in very high resolution (VHR) mapping, multi-source remote sensing images fusion, coastal ecological remote sensing analysis and global change. Currently, I am engaged in research with remote sensing images interpretations with deep learning and geospatial big data analysis in global change.

Highlight: Four years of **GIS**, **RS** and **statistic** experience with a solid theoretical and practical background.

Core Courses:
Mathematics: Calculus: Part A (**98**), Part B (**92**); Linear Algebra (**100**); Probability and Statistic (**99**).
Major: Principles and Application of Remote Sensing (**95**); Remote Sensing Image Processing (**97**); Quantitative Remote Sensing (**92**); Hyperspectral Analysis (**96**); Photogrammetry (**93**); Mathematical Geography (**94**); Spatial Analysis and Application (**90**); Urban GIS (**93**); Machine Learning (**95**); Global Change (**96**); Literature Retrieval and Academic Writing (**96**); Special English (**94**).
Minor: Mathematical Analysis: Part A (**92**), Part B (**87**); Geometry and Algebra: Part A (**90**), Part B (**88**); College Physics (**86**); Nonparametric Statistic (**86**); Biostatistic (**86**); Applied Regression Analysis (**85**).

Language Proficiency: English (CET-4 **600**; CET-6 **523**)

EDUCATION

Sun Yat-sen University, School of Geography and Planning **Guangzhou, China**
Bachelor of Science in Geographic Information Science / Major Sep. 2020 – Jun. 2024
- **GPA :** 92 / 100 (1/29)**,** 4.0 / 4.0 (1/29)

Sun Yat-sen University, School of Mathematics **Guangzhou, China**
Bachelor of Science in Statistics / Minor Sep. 2021 – Jun. 2024
- **GPA :** 87 / 100 (1/29), 3.9 / 4.0 (1/29)

Sun Yat-sen University, School of Geography and Planning **Guangzhou, China**
Ph.D. Candidate in Cartography and Geographical Information System Sep. 2024 – Present

PUBLICATIONS

- **Research on Hyperspectral Coastal Wetlands Classification | Team leader** Feb. 2023 – Jan. 2024
  Pub: Luo J, He Z, Lin H, et al. Biscale Convolutional Self-Attention Network for Hyperspectral Coastal Wetlands Classification[J]. IEEE Geoscience and Remote Sensing Letters, 2024, 21: 1-5.
  Methods: *mixture of self-attention and convolution, multi-scale remote sensing image classification*

- **Research on Hyperspectral Mangroves Change Detection | Team leader** Oct. 2024 – Present
  Pub: Luo J, Li J, Chu X, et al. BTCDNet: Bayesian Tile Attention Network for Hyperspectral Image Change Detection [J]. IEEE Geoscience and Remote Sensing Letters (Under Review)
  Methods: *Bayesian prior knowledge, tile attention, ecology analysis*

- **Research on Abandoned Cropland Extraction | Team member** Nov. 2022 – Dec. 2023
  Pub: Li H, Lin H, **Luo J**, et al. Fine-grained abandoned cropland mapping in southern china using pixel attention contrastive learning[J]. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2023, 17: 2283-2295.
  Methods: *abandoned farmland extraction, VHR mapping, Contrastive Learning*

RESEARCH EXPERIENCE

- **National Innovative Training Project for College Students | Team leader** Dec. 2021 – Dec. 2022
  Topic: Rural Space Shrinkage and its Transformation and Reconstruction Mechanism in Outflow Areas: Taking Shaoguan City as an Example
  Methods: *abandoned cropland extraction, spatial analysis, field interview, push-pull theory*

- **Project on Geospatial Segment Anything App Development | Team leader** Mar. 2023 – Jun. 2023
  Topic: The Development of a Geospatial App to Segment and Classify RS Images by Segment Anything
  Methods: *tkinter development by Python, Segment Anything model, multi-scale segmentation*

- **Project on Heatwaves Exposure in China | Team leader** Mar. 2023 – May. 2023
  Topic: A Long Time Series Analysis of Heatwaves Exposure in China by multi-source GIS data
  Methods: *multi-source GIS data fusion, urban and rural cities clustering*

- **Undergraduate Thesis of Science in Geographic Information Science** Sep. 2023 – Jun. 2024
  Topic: Mapping 1m Land Cover in Pearl River Delta Based on Remote Sensing Large Model and Multi-source Remote Sensing Data
  Methods: *remote sensing large model, VHR mapping, multi-source remote sensing data fusion*

HONORS

- Sun Yat-sen University Third Prize Scholarship during 2020-2021 academic year
- Sun Yat-sen University Third Prize Scholarship during 2021-2022 academic year
- Sun Yat-sen University First Prize Scholarship during 2022-2023 academic year
- **National Scholarship during 2022-2023 academic year**
- Sun Yat-sen University First Prize Scholarship during 2024-2025 academic year
- Second prize in the Guangdong Provincial Mathematics Contest in Modeling, 2022
- Second prize in the 4th National Undergraduate Land Survey Competition, 2022
- Second prize in the 11th National Undergraduate GIS Application Skills Competition, 2022
- Third prize in the Guangdong Provincial 9th Statistic Modeling Competition, 2023

SKILLS

- **Academic Writing Skills:** Familiar with **LATEX** and **Git**
- **Programming Language:** Familiar with **C/C++**, **Python**, **MATLAB** and **SQL**
- **Software Skills:** Familiar with **ArcGIS, ENVI, Google Earth Engine, SPSS** and **VSCode SSH**
- **GIS & RS Programming Skills:** Familiar with **Python GDAL**, **ArcGIS ArcPy**, **GEE Javascript**
- **Deep Learning Skills:** Familiar with **Pytorch** framework and **Hugging face**