
# Shun **Bi**

PH.D. STUDENT

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## Research Interests

My current interest is to build an algorithm blending framework for estimating optical active constitutes, such as Chlorophyll-a concentration, across Case I and II waters from remote sensing data.

My other interests include building Chla algorithms for specific water types (e.g., turbid Case II waters), column-integrated algal biomass for inland lakes, atmospheric correction, and data gap-filling for satellite imagery.

## Education

**School of Geography, Geomatics and Planning, Jiangsu Normal University** — *Jiangsu, Xuzhou*

BSc — *2012 - 2016*

**School of Geography, Nanjing Normal University** — *Jiangsu, Nanjing*

Ms — *2016 - 2018*

**School of Geography, Nanjing Normal University** — *Jiangsu, Nanjing*

PH.D. — *2018 - Now*

## Awards and Honors

| | | |
|---|---|---|
| Jun-2017 | the Third Prize of 2017 NNU Graduate Mathematical Modeling Competition | *China* |
| Dec-2017 | the Second Prize of 2017 National Graduate Mathematical Modeling Competition | *China* |
| Nov-2018 | ESA-MOST China Dragon 4 Cooperation: BEST POSTER AWARD | *China* |
| Apr-2019 | the Third Prize of the 6th Sharing Cup College Student Science and Technology Resources sharing serveice innovation competition | *China* |
| Oct-2019 | the First Prize of the 1st Hyerspectral Imagery Processing Competition - Orbit Cup | *China* |

## Grants and Fellowships

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| Dec-2018 | the Postgraduate Research & Practice Innovation Program of Jiangsu province, China | *Grant: KYCX18-1205* |
| Sep-2017 | the Second Prize Scholarship of 2016 | *China* |
| Sep-2018 | the First Prize Scholarship of 2017 | *China* |
| Sep-2019 | the First Prize Scholarship of 2018 | *China* |
| Nov-2019 | the Scholarship of Saiteng Fenghui of 2019 | *China* |
| Sep-2020 | the First Prize Scholarship of 2019 | *China* |
| Nov-2020 | the National Scholarship of 2020 | *China* |

## Publications

### Peer-reviewed journal articles

1. Bi, S., Li, Y., Liu, G., Song, K., Xu, J., Dong, X., Cai, X., Mu, M., Miao, S., & Lyu, H. (2021). Assessment of algorithms for estimating chlorophyll-a concentration in inland waters: A round-robin scoring method based on the optically fuzzy clustering. *IEEE Transactions on Geoscience and Remote Sensing*, (press).

2. Bi, S., Li, Y., Xu, J., Liu, G., Song, K., Mu, M., Lyu, H., Miao, S., & Xu, J. (2019). Optical classification of inland waters based on an improved fuzzy c-means method. *Optics Express*, *27*(24), 34838–34856.

3. Bi, S., Li, Y., Lyu, H., Mu, M., Xu, J., Lei, S., Miao, S., Hong, T., & Zhou, L. (2019). Quantifying spatiotemporal dynamics of the column-integrated algal biomass in nonbloom conditions based on olci data: A case study of lake dianchi, china. *IEEE Transactions on Geoscience and Remote Sensing*, *57*(10), 7447–7459.

4. Bi, S., Li, Y., Wang, Q., Lyu, H., Liu, G., Zheng, Z., Du, C., Mu, M., Xu, J., Lei, S., & others. (2018). Inland water atmospheric correction based on turbidity classification using olci and slstr synergistic observations. *Remote Sensing*, *10*(7), 1002.

5. Bi, S., Li, Y., Lu, H., Zhu, L., Mu, M., Lei, S., Wen, S., & Ding, X. (2018). Estimation of chlorophyll-a concentration in lake erhai based on olci data. *J. Lake Sci.*, *30*(3), 701–712 (in Chineses).

6. Xu, J., Lei, S., Bi, S., Li, Y., Lyu, H., Xu, J., Xu, X., Mu, M., Miao, S., Zeng, S., & others. (2020). Tracking spatio-temporal dynamics of poc sources in eutrophic lakes by remote sensing. *Water Research*, *168*, 115162.

7. Liu, G., Li, L., Song, K., Li, Y., Lyu, H., Wen, Z., Fang, C., Bi, S., Sun, X., Wang, Z., & others. (2020). An olci-based algorithm for semi-empirically partitioning absorption coefficient and estimating chlorophyll a concentration in various turbid case-2 waters. *Remote Sensing of Environment*, *239*, 111648.

8. Xu, J., Li, Y., Lyu, H., Lei, S., Mu, M., Bi, S., Xu, J., Xu, X., Miao, S., Li, L., & others. (2021). Simultaneous inversion of concentrations of poc and its endmembers in lakes: A novel remote sensing strategy. *Science of the Total Environment*, 145249.

9. Miao, S., Lyu, H., Xu, J., Bi, S., Guo, H., Mu, M., Lei, S., Zeng, S., & Liu, H. (2021). Characteristics of the chromophoric dissolved organic matter of urban black-odor rivers using fluorescence and uv–visible spectroscopy. *Environmental Pollution*, *268*, 115763.

10. Lyu, H., Yang, Z., Shi, L., Li, Y., Guo, H., Zhong, S., Miao, S., Bi, S., & Li, Y. (2020). A novel algorithm to estimate phytoplankton carbon concentration in inland lakes using sentinel-3 olci images. *IEEE Transactions on Geoscience and Remote Sensing*, *58*(9), 6512–6523.

11. Miao, S., Li, Y., Wu, Z., Lyu, H., Li, Y., Bi, S., Xu, J., Lei, S., Mu, M., & Wang, Q. (2020). A semianalytical algorithm for mapping proportion of cyanobacterial biomass in eutrophic inland lakes based on olci data. *IEEE Transactions on Geoscience and Remote Sensing*, *58*(7), 5148–5161.

12. Miao, S., Lyu, H., Wang, Q., Li, Y., Wu, Z., Du, C., Bi, S., Mu, M., Lei, S., & others. (2019). Estimation of terrestrial humic-like substances in inland lakes based on the optical and fluorescence characteristics of chromophoric dissolved organic matter (cdom) using olci images. *Ecological Indicators*, *101*, 399–409.

13. Mu, M., Wu, C., Li, Y., Lyu, H., Fang, S., Yan, X., Liu, G., Zheng, Z., Du, C., & Bi, S. (2019). Long-term observation of cyanobacteria blooms using multi-source satellite images: A case study on a cloudy and rainy lake. *Environmental Science and Pollution Research*, *26*(11), 11012–11028.

### R Packages

1. Shun Bi, Y. L., & Liu, G. (2020). *FCMm: Water spectra fuzzy-clustering, algorithm assessment, and blending*. `https://github.com/bishun945/FCMm`

2. Shun Bi, Y. L., & Cheng, X. (2019). *DAMATO: Data management toolbox*. `https://github.com/bishun945/DAMATO`

3. Shun Bi, G. L., & Li, Y. (2020). *Seadasr (private): Running seadas with r*. `https://github.com/bishun945/seadasr`

4. Bi, S., & Li, Y. (2019). *TSSIM (private): Time-series-based spatial interpolation method*. `https://github.com/bishun945/TSSIM`

## Conferences

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| May-2017 | Jiangsu University Geography Postgradutae Forum (2017) | *Jiangsu, Nanjing* |
| Sep-2017 | the 5th Graduate Forum of Jiangsu Society of Oceanology and Lomnology | *Jiangsu, Nanjing* |
| Oct-2017 | the 1st China Plateau Lake Forum | *Yunnan, Kunming* |
| Apr-2018 | Jiangsu University Geography Postgradutae Forum (2018) | *Jiangsu, Nanjing* |
| Nov-2018 | ESA-MOST DRAGON 4 PROGRAMME - Advanced Training Course in Ocean & Coastal Remote Sensing | *Guangdong, Shenzhen* |
| Nov-2018 | National Forum for Doctoral Students in Geographic Information Science (2018) | *Jiangsu, Nanjing* |
| Nov-2018 | the 18th Water Color Remote Sensing Conference in China | *Guangdong, Zhanjiang* |
| Aug-2019 | the 1st Wetland Remote Sensing Conference in China | *Jilin, Changchung* |
| Nov-2019 | the 19th Water Color Remote Sensing Conference in China | *Hainan, Sanya* |
| Aug-2020 | the 2nd Wetland Remote Sensing Conference in China | *Online* |
| Dec-2020 | National Forum for Doctoral Students in Geographic Information Science (2020) | *Online* |

## Languages

Mandarin (native), English (written and oral)

## Skills

**Programming skills** R, Python, IDL, MATLAB

**Operating systems** Windows, Linux (Ubuntu), macOS

**Remote sensing processing tools** SeaDAS, SNAP, QGIS, POLYMER, ACOLITE, ENVI, GEE, Hydro/EcoLight

**Experiment skills** Apparent optical properties collection: ASD HH2, TriOS RAMSES; Inherent optical properties collection: HydroScat-6, LISST-100X; Quantitative filter technique.

## References

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