

CV - Xiaoteng Zhou

PERSONAL INFORMATION

Name: Xiaoteng Zhou
Gender: Male
E-Mail: xiaoteng.zhou@cmcc.it

EDUCATION

Sep. 2023 – Aug. 2024 Visiting Ph.D. student, Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy
Research Topic: Urban river water quality monitoring using multispectral remote sensing
Supervisor: Prof. (Assistant) Daniela Carrion

Sep. 2018 – Jul. 2023 Ph.D., College of Surveying and Geo-informatics, Tongji University, Shanghai, China
Major: Surveying and Mapping Engineering
Ph.D. Thesis: Quantitative inversion and evolutionary analysis of water quality in urban river network using low-altitude multispectral remote sensing
Supervisor: Prof. Chun Liu

Sep. 2014 – Jul. 2018 B.S., College of Surveying and Geo-informatics, Tongji University, Shanghai, China
Major: Surveying and Mapping Engineering

WORK EXPERIENCE

Nov. 2024 – Current Position: Post-Doc
Project: AdriaClimPlus Project
Institution: CMCC (Centro Euro-Mediterraneo sui Cambiamenti Climatici), Lecce, Italy
Tutor: Giorgia Verri

TEACHING EXPERIENCE

Mar. 2024 – Jun. 2024 Position: Teaching assistant
Course Title: Fundamentals of computer science and technical drawing, training
Institution: Politecnico di Milano
Language: English

Sep. 2018 – Jun. 2021 Position: Part-time teacher
Course Title: Principles and application practices of low-altitude small UAV monitoring

Institution: Shanghai Kongjiang Senior High School

Language: Chinese

RESEARCH INTERESTS

- Multispectral remote sensing
- Satellite monitoring of the estuaries
- Water quality inversion
- Multispectral camera calibration
- Machine learning modeling

RESEARCH EXPERIENCES

- Nov. 2024 – Current **Project:** AdriaClimPlus: Adriatic coastal areas science-based solutions for climate adaptation, Interreg Italy-Croatia.
Personal work: Building machine learning models for satellite remote sensing monitoring and prediction of salinity and temperature in estuary area.
- Jul. 2020 – Jun. 2022 **Project:** Major project of high-resolution earth observation system (Civilian project): Typical application demonstration of natural resource survey using high-resolution aerial sensors.
Personal work: Established the spectral database of rivers in Nanning, China. Constructed water quality inversion model for urban rivers in Nanning. Produced thematic map of aerial hyperspectral water quality monitoring in Nanning.
- Jun. 2019 – Sep. 2022 **Project:** “Science and Technology Innovation Action Plan” project of the Science and Technology Commission of Shanghai Municipality: Construction of international standard for low altitude multispectral remote sensing sensors calibration.
Personal work: Drew up the calibration process. Be responsible for the affairs related to the research project conclusion.
- Sep. 2018 – Jun. 2021 **Project:** National Key Research and Development Program of China: Calibration and verification technology of airborne narrow bandwidth multispectral camera array.
Personal work: Proposed indoor and outdoor integrated radiometric calibration method for the airborne narrowband multispectral camera. Constructed the outdoor movable standard calibration field for low altitude airborne multispectral camera. Completed the radiometric calibration and correction program. Be responsible for the affairs related to the research project conclusion.
- Sep. 2018 – Dec. 2019 **Project:** Research Project of Shanghai Economic and Information Technology Commission: Application of water information monitoring technology based on UAV-borne low altitude remote sensing.

Personal work: Proposed band group matching method of the multispectral camera for urban river network water quality remote sensing. Constructed water quality inversion machine learning model for urban complex river network. Realized the water quality monitoring application of UAV-borne remote sensing. Participated in the research project application. Be responsible for the affairs related to the research project conclusion.

Jun. 2016 – Dec. 2019

Project: National Key Research and Development Program of China: Development of technical methods and standards for spatiotemporal information acquisition and processing.

Personal work: Participated in the drafting of a national standard.

PUBLICATIONS

SCI

1. **Zhou X**, Liu C*, Carrion D, et al. Spectro-environmental factors integrated ensemble learning for urban river network water quality remote sensing[J]. Water Research, 2024: 122544. (IF:11.5)
2. **Zhou X**, Liu C*, Xue Y, et al. Radiometric calibration of a large-array commodity CMOS multispectral camera for UAV-borne remote sensing[J]. International Journal of Applied Earth Observation and Geoinformation, 2022, 112: 102968. (IF: 7.6)
3. **Zhou X**, Liu C*, Akbar A, et al. Spectral and Spatial Feature Integrated Ensemble Learning Method for Grading Urban River Network Water Quality[J]. Remote Sensing,2021,13(22):4591. (IF: 4.2)
4. Wang H, Liu C*, **Zhou X**, et al. Spectral Band Design for Urban Forest Remote Sensing Based on Low-Altitude UAV[J]. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2023, 3341339. (IF: 4.7)
5. Wang H, Liu C*, Li L, Kong Y, Akbar A, **Zhou X**. High-precision inversion of urban river water quality via integration of riparian spatial structures and river spectral signatures[J]. Water Research, 2025, 278: 123378. (IF:11.5)

Conference

1. Liu C, **Zhou X***, Zhou Y, et al. MULTI-TEMPORAL MONITORING OF URBAN RIVER WATER QUALITY USING UAV-BORNE MULTI-SPECTRAL REMOTE SENSING[C]. ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences,2020,1469-1475.

Chinese Journals

1. Liu C, **Zhou X***, Akbar A, et al. Band group matching method for ecological observation targets multispectral remote sensing[J]. Journal of Shandong University of Science and Technology

(Natural Science),2021,40(05):43-51.

2. **Zhou X***, Zhou Z, Zhang S, et al. 3D route planning of UAV for fine single building modeling[J]. Surveying and Mapping of Geology and Mineral Resources,2017,33(02):24-27.
3. Gu J, Liu C*, **Zhou X**, et al. A vision - based high - accuracy 3D - reconstruction method for digital cultural archives of Ming and Qing furniture[J]. SCIENCES OF CONSERVATION AND ARCHAEOLOGY,2022,34(02):22-30.
4. Cai T, Liu C*, **Zhou X**, et al. Detection of cracks in building facade based on UAV[J]. Geotechnical Investigation & Surveying,2022,50(04):45-51.
5. Liu C, Xue Y*, Akbar A, **Zhou X**. Evaluation methods on performance of airborne low altitude multispectral sensors[J]. Geotechnical Investigation & Surveying,2021,49(05):34-39.
6. Xue Y, Liu C*, Akbar A, **Zhou X**. Development of International Standard of Sensor Calibration Technology for New Surveying and Mapping[J]. Standardization of Surveying and Mapping, 2021,37(01):1-7.
7. Liu C, Yang Y*, Zhou Y, **Zhou X**. Water Quality Classification of Low altitude Remote Sensing Image of Urban River Network Based on Fully Convolutional Neural Network[J]. JOURNAL OF TONGJI UNIVERSITY (NATURAL SCIENCE),2020,48(03):456-462.

CHINESE PATENTS

1. **Zhou X**, Zhou Y, Liu C, et al. Multispectral image fusion method for low altitude remote sensing urban target monitoring. 2022.1.17, CN202210048914.X. Authorized.
2. Liu C, **Zhou X**, Akbar A, et al. Filter component customizing method, a filter module, a matching method, equipment, and a medium, 2021.8.27, CN202110995826.6. Authorized.
3. Liu C, **Zhou X**, Zhou Z, et al. Collecting method and system for single building modeling based on UAV, 2017.9.25, CN201710876620.5. Authorized.
4. Liu C, **Zhou X**, Xue Y, et al. Indoor and outdoor integrated calibration methods, systems, electronic devices, and storage media, 2022.7.18, CN202210843476.6. Under review.
5. **Zhou X**, Zhou Y, Liu C, et al. A low altitude multispectral remote sensing water quality monitoring method for surface water, 2022.1.17, CN202210048151.9. Under review.

NATIONAL STANDARD

1. **Zhou X** (drafter ranking: 6/20), Technical specification for multi-sensor monitoring and consistency calibration of UAV-borne low altitude remote sensing, GB/T 41450-2022. Issued

and implemented.

AWARDS

1. **Zhou X**, Excellent graduate of Shanghai, Shanghai Municipal Education Commission, 2023.
2. **Zhou X** (ranking: 6/12), The 7th China International "Internet +" University Student Innovation and Entrepreneurship Competition, Tongji Campus Competition, Gold award, 2021.
3. **Zhou X** (ranking: 14/15), Key technologies and applications of ecological monitoring using the airborne customizable multispectral camera. Scientific and Technological Progress Award, First prize, Chinese Society for Geodesy Photogrammetry and Cartography, 2019.
4. **Zhou X**, The 16th China Post-Graduate Mathematical Contest in Modeling, Third prize, China Association for Science and Technology (Youth Science and Technology Center), 2018.
5. **Zhou X**, Excellent graduate of Tongji University, Tongji University, 2018.
6. **Zhou X**, Transportation Competition of ASCE Mid-Pacific Student Conference, Second prize, The American Society of Civil Engineers, 2017.

PERSONAL SKILLS

Language: English (fluent), Japanese (fluent), Chinese (native)
Programming: Python, C#, MATLAB
Professional Software: ArcGIS, QGIS, ENVI, SNAP, Pix4D, Auto CAD, Agisoft Metashape, Cloud Compare, MissionPlanner, Adobe Pr