

# Zhang Boxuan

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## RESEARCH INTEREST

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**Computer Vision**      Vision-Language Model, Object Detection, Remote Sensing Image Interpretation  
**Machine Learning**    Trustworthy Machine Learning, Active Learning

## EDUCATION

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**Wuhan University** **Wuhan, CHN**  
*M.E. in Artificial Intelligence* *Sept. 2022 - June 2024 (expected)*

– Overall GPA: 92.08/100 (**Top 10%**)

**Wuhan University** **Wuhan, CHN**  
*B.E. in Computer Science and Technology* *Sept. 2018 - June 2022*

– Overall GPA: 3.6/4.0

## RESEARCH EXPERIENCE

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**Department of Civil Engineering, Wuhan University** **Wuhan, CHN**  
*Research Intern, Advisor: Prof. Xiaoping Zhang* *Aug. 2023 - Oct. 2023*

- Research on *Machine Learning for Tunnel Boring Machines (TBMs) Excavation*.
- Work on rock mass accurate classification based on multi-algorithm cross multi-feature optimization selection and TBM parameter efficient prediction using low-dimensional inputs. This helps TBMs to perceive geological conditions in advance and study the optimal operational parameters under geological variations.
- Win the third place in The Second China TBM Excavation Parameter Data Sharing and Machine Learning Competition.
- The code is publicly available at: [github.com/ZBox1005/TBM-Competition](https://github.com/ZBox1005/TBM-Competition)

**Sensing IntelliGence and MACHine learning (SIGMA) Lab, Wuhan University** **Wuhan, CHN**  
*Research Assistant, Advisor: Prof. Zengmao Wang and Prof. Bo Du* *Nov. 2022 - Aug. 2023*

- Research on *Active Learning for Semi-Supervised Object Detection in Remote Sensing Images*.
- Propose to boost semi-supervised object detection with active teaching (SSOD-AT) in remote sensing images. SSOD-AT can achieve high detection accuracy only with limited labeled samples, which helps to alleviate the dependency on limited labeled images in remote sensing scenarios.
- Submit one paper to IEEE Geoscience and Remote Sensing Letters (GRSL) and get accepted.
- The code is publicly available at: [github.com/ZBox1005/SSOD-AT](https://github.com/ZBox1005/SSOD-AT)

**Sensing IntelliGence and MACHine learning (SIGMA) Lab, Wuhan University** **Wuhan, CHN**  
*Research Assistant, Advisor: Prof. Zengmao Wang* *Feb. 2023 - April 2023*

- Research on *Self-Supervised Techniques for Intelligent Image Annotation*.
- Propose a self-supervised pre-training method assisted by image and object collaboration to address the low discriminative ability of self-supervised models to extract features.
- Help apply for the Hubei Provincial Technology Innovation Program aimed at “smart city” and “smart healthcare”, collaborating with Hubei People’s Hospital and Wuhan Zhongzhi Digital Technology Company.

- Research on *Semantic Segmentation for Open Set Domain Adaptation* (Undergraduate Thesis)
- Propose a feature alignment method using a cross bilateral filter and depth-based warping to help the segmentation model better migrate between open domains (e.g. daytime scene to nighttime scene).
- Defend the undergraduate thesis and get excellent rating.

## PUBLICATIONS

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- **Boosting Semi-Supervised Object Detection in Remote Sensing Images with Active Teaching**  
**Boxuan, Zhang** and Zengmao, Wang and Bo, Du  
*IEEE Geoscience and Remote Sensing Letters*, 2024.

## AWARDS

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- The third place in The Second TBM Excavation Parameter Data Sharing and Machine Learning Competition.

## SELECTED COURSES

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- **Postgraduate**  
Machine Learning in Computer Vision (96), Machine Learning (92), Advanced Algorithm Design and Analysis (90), Mathematical Models and Optimization (93)
- **Undergraduate**  
Multimedia Technology (95), Advanced Mathematics(92), Computer Graphics(87), Principles of Compiler(95), Computer Networks(91), Embedded System (91), Database Systems(93)

## KEY SKILLS

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**Programming**      Python, Pytorch, LaTeX, JavaScript  
**Languages**      Chinese, English (IELTS: 7.0)

## REFERENCES

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- **Prof. Zengmao Wang**  
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Wuhan University, Wuhan, CHN  
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- **Prof. Bo Du**  
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