

# Wangbing Li (厉望秉)

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## EDUCATION BACKGROUND

Master of Science (M.S.) in Civil Engineering (Direction: Smart Construction) July 2025 (Expected)  
*Beijing University of Technology* Beijing, China

- **GPA: 3.76/4.0**
- Advisor: Assoc. Prof. Xuefeng Zhao
- Research Interests: Mixed Reality, BIM, Construction Informatics and Ontology

Bachelor of Engineering (B.E.) in Civil Engineering July 2022  
*Beijing University of Technology* Beijing, China

- **Graduated with Honors**
- Advisor: Assoc. Prof. Xuefeng Zhao and Assoc. Prof. Zhe Sun
- **GPA: 3.92/4.0** (Rank: 3/155, Top 2%)

## ACADEMIC SERVICES

- [1] Student Member of American Society of Civil Engineers (ASCE)
- [2] Student Member of China Civil Engineering Society (CCES)
- [3] Student Volunteer for the 1<sup>st</sup> International Conference on Smart Construction (ICSC2024)
- [4] Student Volunteer for the 3<sup>rd</sup> China Conference on Smart Construction, Operation and Maintenance
- [5] Student Volunteer for the 1<sup>st</sup> China Forum on Discipline Development in Smart Construction

## PUBLICATIONS

- [1] Xuefeng Zhao, **Wangbing Li**, et al. (2024). In-situ Observation and Calibration for Structure Safety Diagnosis Through Finite Element Analysis and Mixed Reality. *Advanced Engineering Informatics*, 60, 102415. <http://doi.org/10.1016/j.aei.2024.102415>
- [2] Xuefeng Zhao, **Wangbing Li**, et al. (2023). Closed-Loop Management System for Design of a Building Information Modeling Curriculum to Meet Industry Requirements. *International Journal of Engineering Education*, 39(6), 1386-1399.
- [3] **(To be Submitted) Wangbing Li**, Xuefeng Zhao, et al. Situational-Awareness Enriched In-Situ Structural Construction Monitoring Using Mixed Reality and Ontology. *Advanced Engineering Informatics*.

## PATENTS (CHINESE INVENTION PATENT)

- [1] Xuefeng Zhao, **Wangbing Li**. (2024). A Method for In-situ Finite Element Simulation of Stress States in a Fixed-fixed Beam Based on Mixed Reality. ZL202211218759.8.
- [2] Xuefeng Zhao, **Wangbing Li**. (2023). A Method for In-situ Real-time Stress Simulation of a Fixed-fixed Beam Based on FEA-MR. ZL202211218753.0.
- [3] **(Under Review)** Xuefeng Zhao, **Wangbing Li**, et al. A Method for Controlling the Position and Pose of Virtual Objects in a Mixed Reality Environment. CN202410839877.3.

## RESEARCH EXPERIENCES

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### Project 1: Undergraduate Thesis 12/2021 – 07/2023

- ✧ **Topic:** In-situ Observation and Calibration for Structure Safety Diagnosis through FEA and MR
- ✧ **Advisor:** Assoc. Prof. Xuefeng Zhao and Assoc. Prof. Zhe Sun
- ✧ **Techniques:** Abaqus, VTK based on Python, ParaView, Unity, and MRTK
- ✧ **Achievements:** Established a standalone stress calculation and visualization method based on Mixed Reality and finite element analysis for achieving in-situ observation and calibration for structure safety diagnosis.

### Project 2: Industry Collaboration with China National Nuclear Corporation 05/2023 – 01/2024

- ✧ **Topic:** Holographic Interactive Assembly Simulation for Hualong One using Mixed Reality
- ✧ **Advisor:** Assoc. Prof. Xuefeng Zhao | Project Manager: Liguoxi
- ✧ **Techniques:** Revit, Navisworks, PiXYZStudio, Unity, and MRTK
- ✧ **Achievements:** Developed a novel virtual object control method based on MRTK and gesture algorithms, enabling independent control of degrees of freedom and gesture sensitivity.

### Project 3: Industry Collaboration with Beijing Construction Engineering Group 05/2023 – Present

- ✧ **Topic:** In-Situ Structural Construction Monitoring Using Mixed Reality and Ontology
- ✧ **Advisor:** Assoc. Prof. Xuefeng Zhao | Project Manager: Liang Fu and Zhenqing Yang
- ✧ **Techniques:** Midas, MySQL, IfcOpenShell, Protégé, Apache Jena, Unity, and MRTK
- ✧ **Achievements:** Developed a knowledge-driven, multi-source heterogeneous data fusion and inference method based on Mixed Reality and Ontology technologies to achieve in-situ structural monitoring with low cognitive load, high situational awareness, and improved efficiency.

## AWARDS AND HONORS

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[1] China National Scholarship (Top 1%)	2024.10
[2] 1 <sup>st</sup> Prize Academic Scholarship of Beijing University of Technology (Top 5%)	2024.10
[3] 2 <sup>nd</sup> Prize Academic Scholarship of Beijing University of Technology (Top 10%)	2023.11
[4] 1 <sup>st</sup> Prize Academic Scholarship of Beijing University of Technology (Top 5%)	2022.11
[5] Excellent Graduate Student Award of Beijing (Top 5%)	2022.07
[6] Top 100 Graduates Award of Beijing University of Technology (Top 1.5%)	2022.07
[7] China National Scholarship (Top 0.65%)	2021.12
[8] Grand Prize in the National Structural Design Information Technology Competition	2021.05

## SKILLS

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**Language:** Chinese (Native) and English

**Software:** Revit, Navisworks, Abaqus, VOSviewer, Visio, Unity, MRTK, Apache Jena and Protégé

**Programming:** C#, Python, Java