

Biaoli Gao

Email: gaobiaoli@tongji.edu.cn | Contact: +86 13296379166

EDUCATION

Tongji University

Shanghai, China

Master of Civil Engineering

Sept. 2022--present

Supervisor: Prof. Bin Yang

Score: 86.07/100

Main Courses: Matrix Analysis, Applied Statistics, Object-Oriented Program Design, Artificial Intelligence.

Xiamen University

Xiamen, China

Bachelor of Civil Engineering (**Honored Graduate**)

Sept. 2018--Jun. 2022

GPA: 3.66/4.0 (1/37, Top 5%)

Main Courses: Probability and Statistics, Linear Algebra, Numerical Analysis, Construction of Project Management, Engineering Economics.

RESEARCH EXPERIENCE

National Key R&D Program Sub-topics, China

Researcher

Nov. 2022--present

- Utilized deep learning method to track the status of workers, materials, and equipment on construction sites.
- Investigated the spatial mapping and data fusion mechanisms of multimodal and multi-source construction data.
- Developed real-time visualization methods for construction status data and constructed their digital twins.

Improvement of Soil Moisture Experiment Equipment Using IoT Technology (Innovative Entrepreneurial Training Plan Program), Xiamen University

Project Leader

Sept. 2020--Jun. 2022

- Improved traditional soil moisture experiment equipment using embedded devices, and liquid level sensors to achieve automatic data collection and processing.

PUBLICATIONS

Developments in the Built Environment (JCR Q1, IF=6.2)

- Title: **Semantic segmentation-based framework for concrete pouring progress monitoring by using multiple surveillance cameras.**
- Co-Author: Yang Bin, **Gao Biaoli (corresponding author)**, Han Yilong.
- DOI: <https://doi.org/10.1016/j.dibe.2023.100283>.

Alexandria Engineering Journal (JCR Q1, IF=6.2)

- (under review)
- Title: **Production-based Progress Monitoring of Rebar Tying using Few-Shot Learning and Kernel Density**
- Co-Author: **Gao Biaoli (first author)**, Yang Bin, Xiao Hongru.
- Highlights: Introducing zero-shot worker detection and few-shot worker activity recognition, we propose a kernel density-based production-progress model to achieve real-time progress monitoring through worker behavior inference.

AWARDS AND HONORS

National Scholarship, China	2024
National Scholarship, China	2020
University Scholarship, Xiamen Univ.	2020, 2022
Outstanding Student Scholarship (Grade 1), Xiamen Univ.	2019, 2021
Honored Graduate, Xiamen Univ.	2022
Merit Student, Xiamen Univ.	2022
China Undergraduate Mathematical Contest in Modeling: First Prize	2021
International Engineering Mechanics Contest: I category for personal result	2020
China Zhou Peiyuan Mechanics Competition: First Prize	2021

TECHNICAL SKILLS

Computer Science Fundamentals: Data Structures and Algorithms; Computer Networks; Object-Oriented Programming; Operating Systems;

Programming Languages and Software: Python; C#; Golang; C/C++; Matlab;

Professional Software: Unity3D; MySQL; MongoDB;

Deep Learning Skills: Pytorch; OpenMMLab; YOLO; Semantic Segmentation;

Personal Project: <https://github.com/gaobiaoli>

Languages: IELTS: 7.0(6.0)

INTERNSHIP EXPERIENCE

China Haisum Engineering Co., Ltd.

Software Developer Intern.

May 2023-Aug. 2023

- Developed backend for web application using Python's FastAPI framework.

RESEARCH INTERESTS

- Construction Automation; Digital Twin; Construction Management; Robotics
- Computer Vision; Deep Learning; Large Visual&Language Model; Reinforcement Learning