



Borui KANG

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Education

Tsinghua University

Beijing, China

• **B.E., Department of Civil Engineering**

August 2019 - June 2023

Research interests

- Deep learning, especially computer vision
- Medical image analysis
- AI for engineering
- AI for science

Research experiences

- A Student Research Training (SRT): Driving simulation experiment
 - Leading the project,
 - Designing experiments, conducting experiments, data processing
 - Building scenes using UE4 with the help of engineers
- Final Project of Intelligent Construction: Hazard detection of construction workers using Mask-RCNN
 - Participation in testing
- A Student Research Training (SRT) about CAD collaborative display
 - Building three demo scenes using Unity
- Patent text analysis based on LDA and SNA analysis
 - Data acquisition, processing, analysis
 - **Published a conference paper** as the second author
- Final Project of Introduction to Deep Learning taught by Xiaolin HU
 - Studying and designing 2.5D-Unet for Brain tumor semantic segmentation with good results
- Graduation Thesis: PISGAN: Data Driven and Physics-informed Seismic Waveform Generator
 - **Oral presentation** at Seismological Society of America 2023 Annual Meeting
- WaveformMAE: Self-Supervised Learning for Fault-Inversion-Free Reconstruction of Ground Motion Waveforms Across the Entire Area
 - **Poster presentation** at American Geophysical Union 2023 Annual Meeting

Publications

1. Zheng, Z., Kang, B. R., Yuan, Q. T., Zhou, Y. C., Lu, X. Z., & Lin, J. R. (2023). Text Mining-Based Patent Analysis for Automated Rule Checking in AEC Check for updates. *Advances in Information Technology in Civil and Building Engineering: Proceedings of ICCCB E 2022-Volume 2*, 358, 11.

Awards and Honors

Excellent graduate of Tsinghua University (about top 12%)

06/2023





Comprehensive Excellence Award of Tsinghua University (about top 12%)	12/2022
Outstanding winner of the Fourth Mao-YiSheng Charity Bridge Innovation Design Competition (top 3 out of 53 teams around China, beat many graduate students)	07/2022
Honorable Mention of 2022 Mathematical Contest In Modeling	05/2022
First prize of the 6th Tsinghua University Future City and Infrastructure Innovation Competition (1/8 in the finals)	04/2022
Comprehensive Excellence Award of Tsinghua University (about top 12%)	12/2021
Excellence Award in Science and Technology Innovation of Tsinghua University	12/2021
Second Prize for Outstanding Project in the 2021 Student research Training (SRT) Program	12/2021
First prize , the most valuable award, the best creative award of the 15th Tsinghua University Traffic Science and Technology Competition (1/4 in the finals)	05/2021
Excellence Award in Social Work of Tsinghua University	12/2020
Excellence Award in Volunteer and Public Service of Tsinghua University	12/2020

Professional associations

Student Association of Science and Technology of Department of Civil Engineering Tsinghua University, A Student Branch of The American Society of Civil Engineers	2020-2023
Student Association of Science and Technology of Tsinghua University	2021-2022
Seismological Society of America	2023-present

Leadership at THU

Student Association of Science and Technology of Department of Civil Engineering Tsinghua University	
• Vice-president	01/2022 - 12/2022
• Section head of the Science and Innovation Center	01/2021 - 12/2021
• Member of the Science and Innovation Center	01/2021 - 12/2021
Student Association of Science and Technology of Department of Tsinghua University	
• Member of the Challenge Cup Department	08/2021 - 07/2022
Soccer Team of Department of Civil Engineering Tsinghua University	
• Captain	06/2022 – 05/2023

Volunteer work

Accumulated working hours: 320+ hours

Volunteer of Beijing Winter Olympic and Paralympic Games	01/2022 - 03/2022
Integrated teaching volunteer	09/2021
Volunteer of Tsinghua University entrance examination	07/2022
Volunteer of Tsinghua University special-type entrance examination	01/2021
Volunteer tutoring activities for high school students in poor areas	09/2020
Volunteer of welcome activity of Department of Civil Engineering of Tsinghua University	09/2020
Online teaching volunteer of Tsinghua University	05/2020
Volunteer servicing for blood donors	11/2019
Volunteer explanation activities on campus	10/2019
Volunteer service project of Beijing West Railway Station	10/2019
Blood donations for 6 times	09/2019 - now

