

# Runze GU

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runzegu.github.io

## Education

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**College of Engineering, University of California, Berkeley** Berkeley, CA, USA

- Berkeley GLOBE Engineering Visiting Student Program 2024
- GPA: 4.00/4.00 (including 2 A+ out of 4 courses)

**College of Civil Engineering, Tongji University** Shanghai, China

- Bachelor of Civil Engineering 2020–2024
- GPA: 4.49/5.00 (equivalent to 89.89 on 100 basis)
- Outstanding Student Scholarship Winner (3 times)
- Participant of the 14th Korea Advanced Institute of Science and Technology (KAIST)-Tongji Summer School

## Proficiency and Skills

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- Language: TOEFL 104, GRE 322+3.5 (scored 169 in Quantitative section)
- Programming and Computer Skills: Familiar with Python, AutoCAD, computer vision, MATLAB and Revit

## Research Experience

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**Developing next-generation green cement** 03/2024- 05/2024

Advisor: Prof. **Shaofan LI**, UC Berkeley & Dr. **Qi ZHENG**, postdoc at Stanford

- Designed a device using staples and copper sheets for fixation, with carbon fiber cloth as a base, to perform ultrafast high-temperature sintering (UHS) on sample materials
- Conducted plasma and microwave heating experiments on recycled concrete samples
- Assisted in setting up and stabilizing the Nice-Power DC power supply
- Classified and analyzed synthesized recycled concrete

**Regional earthquake resilience assessment based on computer vision** 01/2024-07/2024

Advisor: Prof. **Ying ZHOU**, Dean, College of Civil Engineering, Tongji University

- Trained Mask R-CNN models on the xBD dataset to identify buildings and assess damage levels in satellite images across multiple disaster categories
- Enabled rapid, safe, and remote evaluation of seismic resilience by detecting key indicators such as collapse rates and affected areas
- Independently completed a thesis and successfully passed the defense

**Nighttime vehicle detection based on image translation algorithm** 03/2022-12/2023

Advisor: **Chao LIU**, Associate professor, Department of Bridge Engineering, Tongji University

- Published a paper accepted by an SCI-indexed journal (DOI: 10.3233/JIFS-233899)
- Funded by National Student Innovation Training Program (SITP) project
- Collected data from videos of night traffic flow to build an image dataset and utilized it together with Berkeley Deep Drive 100K dataset (BDD100K) to train Cycle-GAN model

- Optimized object detection under complex weather, such as foggy days and midnights

**Determination of the maximum point cloud density on the face of a tunnel construction site in Sichuan** 10/2022-12/2022

- Course project of Information Technology in Civil Engineering (got an A)
- Processed position data of measured points using Mean Shift algorithm to identify maximum point cloud density and demonstrated the entire workflow in MATLAB

**Professional Experience**

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**China Coal Zhong'an Project Management Co. LTD** 07/2022-08/2022

- Construction standard inspection of masonry structures in the metro project
- Construction site safety evaluation and hazard investigation