Runze GU

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Education

College of Engineering, University of California, Berkeley   Berkeley, CA, USA
- Berkeley GLOBE Engineering Visiting Student Program   *2024*
- GPA: 4.00/4.00 (earned A+ in 2 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 a 100-point scale)
- Outstanding Student Scholarship Winner (3 times)
- Participant in the 14th Korea Advanced Institute of Science and Technology (KAIST)-Tongji Summer School

Proficiency and Skills

- Standardized Tests: TOEFL 104; GRE 322 (169 Quantitative, 3.5 Analytical Writing)
- Programming and Computer Skills: Proficient in Python, Scheme, AutoCAD, Revit, MATLAB and computer vision algorithms

Research Experience

Developing next-generation green cement   *Mar 2024 - May 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

Welding joint detection using deep learning   *Jul 2023 - Aug 2023*
Advisor: Prof. **Kevin Han** and Dr. **Doyun Lee**, Department of Civil, Construction, and Environmental Engineering at North Carolina State University
- Participated in the 2023 Summer Global Education, Academics, and Research Skills (GEARS) program at NC State University
- Annotated over 1,200 images of welding joints using the Labelme tool
- Trained a U-Net model for semantic segmentation to precisely detect welding joints
- Completed an academic poster and delivered an oral presentation

Nighttime vehicle detection based on image translation algorithm   *Mar 2022 - Dec 2023*
Advisor: Prof. **Chao Liu**, Department of Bridge Engineering, Tongji University
- Published a paper in an SCI-indexed journal (**DOI: 10.3233/JIFS-233899**)
- Funded by the National Student Innovation Training Program (SITP) project
- Collected data from night traffic videos to build an image dataset and utilized it alongside

the Berkeley Deep Drive 100K (BDD100K) dataset to train a Cycle-GAN model

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

Regional earthquake resilience assessment using computer vision   *Jan 2024 - Jul 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

Professional Experience

China Coal Zhong'an Project Management Co. LTD   *Jun 2022 - Sep 2022*

➢ Inspected masonry structures for compliance with codes in a metro project in Xi'an

➢ Conducted safety inspections for underground construction