CURRICULUM VITAE

Chuan Kuang

Phone：+86 17722828475|Email：kuang@szu.edu.cn|Wechat ：MrKuang2020

28-year-old | Male | Single

Address： Shenzhen University, Nanhai Ave 3688, Shenzhen, China, 51806

Native Place： Sichuan, China

Education

2018.9 to 2021.6 **Shenzhen University** **Civil Engineering | Master**
Shenzhen, China GPA: 3.23/4 (Ranking: 24/91)
Thesis： Sophisticated extraction and quantitative analysis of X-ray computed tomography image features of fractured cement-based materials.

2012. 9 to 2016.6 **Southwest Jiaotong University (SWJTU)** **Civil Engineering | Bachelor**
Chengdu, China GPA: 3.43/4 (Ranking: 3/69)

Work Experience

2020.7 to Present **Shenzhen University** **Shenzhen, China**
Research Assistant
- Developing an application to visualize and quantitatively analyze three-dimensional micro-structure in fractured cement-based composite materials by automatically processing X-ray computed tomography (XCT) images.

2016.9 to 2018.8 **Chinese Academy of Science** **Mianyang, China**
Research Intern
- Developed an application that automatically collects and analyzes soil moisture data from agricultural fields.

Research Experience

Visualization and quantitative analysis of fracture characteristics of rubber concrete using X-ray computed tomography (XCT) technology was combined with image processing algorithms [1, 2, 3, 4].
- A novel image processing method combined with an in-situ XCT test was developed to track the fracture process of rubberized concrete specimens under loading [1].
- A sophisticated image processing method was proposed to quantitatively analyze crack morphological features by detecting continuous and integral microcracks accurately from XCT images and effectively removing all the pores and additions with similar gray values in the cracks' final detected images [2].

Publications

[1]. Shuxian Hong, **Chuan Kuang**, Jianchao Zhang, Dongshuai Hou, Jinrui Zhang, Laibao Liu, Biqin Dong, Visual analysis for microscopic cracking propagation of rubberized concrete, ***Construction and Building Materials***, 265(2020):20599. Link of the Paper

[2]. Shuxian Hong, **Chuan Kuang**, Jianchao Zhang, Biqin Dong, A segmentation method for enhancing the continuity and integrality of micro-cracks in concrete fracture XCT image, (Submitted to ***Journal of Materials in Civil Engineering,*** **Accept**). Link of the Paper.

[3]. Jianchao Zhang, **Chuan Kuang**, Chen Lin, Zheming Liu, Ke Wang, Shuxian Hong, Biqin Dong, Dongshuai Hou, Laibao Liu, Feng Xing, Evolutionary trace for ductile fracture performance of rubber-cement composites***, Cement and Concrete Composites***, 121(2021): 104080. Link of the Paper.

[4]. Shuxian Hong, Peng Liu, Jianchao Zhang, **Chuan Kuang**, Biqin Dong, Qiling Luo, Wei Liu, Interior fracture analysis of rubber-cement composites based on X-ray computed tomography and digital volume correlation, ***Construction and Building Materials***, 259(2020): 119833. Link of the paper

Honors & Awards

National Scholarship for Graduate students	2020.12
First-class Academic Scholarship of Shenzhen University	2020.12
Guangzhou Luqiao Scholarship	2015.11
Star of Science and Technology Innovation of the Civil School of SWJTU	2015.05
Third Prize in Engineering Survey Competition of Civil School of SWJTU	2015.01
Second Prize of Contemporary Undergraduate Mathematical Contest in Modeling	2014.12
Third Prize of Asia and Pacific Mathematical Contest in Modeling	2014.08
First Prize of May Day Mathematical Contest in Modeling	2014.05
First Prize of Certificate Authority Cup International Mathematical Contest Modeling	2014.03
First Prize of Electrician Mathematical Contest in Modeling	2013.11

Professional Skills

Experimental Skills: X-ray Computed Tomography, Electrochemical Impedance Spectroscopy, Mercury intrusion Porosimetry, Titration, X-ray Diffraction, Thermogravimetric Analysis.
Software Skills: Avizo (3D Visualization & Analysis Software), ImageJ, OriginLab, Endnote.
Programming Skills: Matlab, Python, Quantitative Analysis, Image Processing Algorithms.
Languages: English (Fluent).

Research Interests

Nondestructive Testing and Health Monitoring (e.g., XCT, Ground Penetrating Radar, Electrochemical Techniques, Acoustic Emission, etc.); Durability of Cement-based Materials (e.g., Steel Corrosion, Fracture, etc.); Numerical Simulation/Micro-mechanical Modeling (e.g., Probabilistic Assessment of Slope, Fractured Rock, etc.).