Yi Zhong

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EDUCATION & QUALIFICATIONS

Doctor of Philosophy in Civil, Environmental and Sustainable Engineering

Arizona State University *Aug/2019 - Exp May/2023*

Advisor: Dr. Junliang (Julian) Tao, Email: jtao25@asu.edu

Master of Science in Civil and Environmental Engineering

University of Illinois at Urbana Champaign *Aug/2017-Aug/2019*

Advisor: Dr. Roman Makhnenko, Email: romanmax@illinois.edu

Thesis: Assessment of rock fracture initiation using acoustic emission

Bachelor of Science in Civil Engineering

Dalian University of Technology, Dalian, China *Sep/2014-June/2018*

Advisor: Dr. Yao Cui

RESEARCH INTERESTS

- My research centered around bio-inspired geotechnics. In particular, my current work focuses on underground wireless communication using seismic waves. The idea comes from subterranean mole rats which are capable to generate and receive seismic signals.
- The goal of my research has been to develop an underground wireless communication system and apply the communication system to an underground wireless sensing network.

PUBLICATIONS (* denotes the corresponding author)

Works under peer-review:

1. **Zhong, Y.**, Tao, J.*, (Under review). Bio-inspired vibration-based Wireless Underground Communication System. *Journal of Rock Mechanics and Geotechnical Engineering*.

CONFERENCES & PRESENTATIONS

Conference Paper

1. **Zhong, Y.***, Tao, J. 2022. “Bio-inspired Vibrational Transmitters for Wireless Underground Communication” Geo-Congress 2022, Accepted.

2. **Zhong, Y.***, Gao, Y., Tao, J. 2021. “Bio-Inspired Underground Communication Using Seismic Waves” IFCEE 2021,139-148.

Presentations

Feb. 11, 2022 " Bio-inspired Seismic Wave Based Wireless Underground Communication System ", The 12th SSEBE Graduate Research Symposium, Arizona State University

Jan. 5, 2021 " Vibrational Underground Communication Inspired by Tremulation and Drumming ", SICB 2022, Phoenix, AZ

Oct. 18-20, 2021 " Bio-inspired Seismic Wave Based Wireless Underground Communication System ", CBBG Annual Site Visit 2021, Arizona State University

Feb. 8, 2021 "Vibrational Self-burrowing Robot for Wireless Underground Communication", The 11th SSEBE Graduate Research Symposium, Arizona State University

Oct. 27-29, 2020 " Vibrational Self-burrowing Robot for Wireless Underground Communication ", CBBG Annual Site Visit 2020, Arizona State University

Jan. 24, 2020 “Knock-knock: Bioinspired Underground Communication Using Seismic Waves”, The 10th SSEBE Graduate Research Symposium, Arizona State University

Oct. 29-31, 2019 “Knock-knock: Bioinspired Underground Communication Using Seismic Waves”, CBBG Annual Site Visit 2019, Arizona State University

Feb. 25-28, 2019 “Bioinspired Underground Communication Using Seismic Waves”, Geo-Congress 2020, Minneapolis, MN

TEACHING & PEER SUPPORT EXPERIENCE

Arizona State University

REU Mentor — Summer 2021

University of Illinois at Urbana Champaign

Teaching Assistant — *Spring 2019*

RESEARCH FELLOWSHIP & EXPERIENCE

Graduate Research Associate — *Aug/2019-Present*

Arizona State University

PI: Dr. Junliang (Julian) Tao

- Affiliated to Center for Bio-mediated and Bio-inspired Geotechnics (CBBG), developing a bio-inspired underground communication system for underground sensing and monitoring network

Graduate Research Assistant — *Aug/2018-May/2019*

University of Illinois at Urbana Champaign

PI: Dr. Roman Makhnenko

- Compiling a code to localize the acoustic emission sources when fracture of rock initiates and propagates

Research Experience for Undergraduates — *Feb/2018-May/2018*

University of Illinois at Urbana Champaign

PI: Dr. Roman Makhnenko

- Extending Paul-Mohr-Coulomb failure criterion to ductile failure of rock and get failure surfaces in both p-q plane and principal stress space

SERVICES

Student leadership and services to the university

Student Liaison of Arizona Geo-Institute *Jan/2022-Present*

- Attend monthly AZ G-I board meeting

President of Geo-Institute (G-I) Graduate Student Organization (GSO) at ASU *Dec/2021-Present*

Travel Grant Reviewer ASU Graduate & Professional Student Association (GPSA) *Aug/2021-Present*

Research Grant Reviewer ASU Graduate & Professional Student Association (GPSA) *Aug/2021-Present*

Small grant committee of ASCE GI Student Leadership Council (SLC) *June/2021-Present*

- Attend monthly GI-SLC meeting
- Draft GI-SLC Fundraising proposal
- Review small grant application from GI-GSOs

Vice president of Geo-Institute (G-I) Graduate Student Organization (GSO) at ASU *Dec/2020-Dec/2021*

- Organize virtual monthly meeting and seminars
- Organize 2021 IFCEE student competition participation
- Help organize virtual GI/AEG career fair
- Awarded a $500 small grant from GI SLC
- Organize a geological field trip to the Grand Canyon

ASU Homecoming 2021 *Oct/2021*

ASU Open Door 2020 *Feb/2020*

ASU Homecoming 2019 *Aug/2019*

HONORS AND AWARDS

Honors, Awards and scholarships

Geo-Institute Student Leadership Council Travel Stipend $400 *Mar/2022*

ASU GPSA Travel Grant $950 *Feb/2022*

Arizona Geo-Institute (AZ GI) Scholarship $1000 *Oct/2021*

Second Prize of ASU SSEBE 11th Annual Graduate Poster Symposium *Feb/2021*

Several Scholarships awarded during undergraduate in China *Sep/2019*

Total amount awarded: ￥7000

PROFESSIONAL LICENSURE

Passed Fundamentals of Engineering Exam (EIT) *April/2021*

Language

Mandarin: Native

English: Full professional proficiency