

## Nuo Chen

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Address: Shenzhen City, Guangdong Province, China

### EDUCATION

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#### The University of Hong Kong

Sept. 2024-Sept. 2025(expected)

➤ Programme: Master of Science in Engineering in Civil Engineering (Geotechnical Engineering)

**Central South University**(First-class universities and disciplines of the world, Project 985)

Sept. 2020-June 2024

➤ Programme: Bachelor of Engineering in Civil Engineering

➤ Average Score: 87.22/100

➤ Achievements: Third Prize Scholarship in 2022-2023 Academic Year; Third Prize Scholarship in 2021-2022 Academic Year; Second Prize Scholarship in 2020-2021 Academic Year

### RESEARCH INTERESTS

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➤ Landslides

➤ Machine learning in geotechnical engineering

➤ Numerical simulation

➤ Model (Flume) test

### RESEARCH EXPERIENCES

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#### Publications

[1] **Nuo Chen**, Pengpeng He, Jiaxun Chen, Xiaocheng Huang, Kun Fang, Jiren Xie\*, Denis N. Gorobtsov, Margarita A. Novgorodova. A novel Landslide prediction method with Bayesian method based on the slope surface tilting measurements. *Engineering Geology (Q1)* (revise & resubmit)

#### Research Projects

**Msc Dissertation: Utilize AI to predict the behavior of ash stabilized clay**

October 2024-present

Research supervised by Dr. Fiona C. Y. KWOK.

- Established the database of UCS of various material such as granulated blast furnace slag (GGBS), coal fly ash (CFA), incinerated sewage sludge ash (SSA) stabilized marine deposit from new prepared samples and previous research for training machine learning model.
- Utilized machine learning method (hybrid CNN-LSTM, SVR, BP, etc.) to predict the UCS of stabilized marine deposit and Randomized Search method to tune and obtain the optimum hyperparameters of each model.
- SHapley Additive exPlanations (SHAP) is used to interpret ML models by quantifying each feature's contribution to predictions.

## **Research on Rainfall Thresholds and Early Warning Methods for Non-apparent Multiple Granite Residual Soil Landslides**

June 2024-present

Research supervised by Assoc. Prof. JIREN XIE

*Group Member*

- Investigating the triggering mechanisms of non-apparent multiple granite residual slope soil landslides by analyzing the influence of terrain, rock layer characteristics, and plant root systems.
- Conducting a series of experiments, including hydraulic parameter testing, mechanical parameter testing, and failure mechanism testing.
- Analyzing the susceptibility of landslides under various rainfall thresholds by combining critical factors such as slope gradient, rainfall duration, and intensity with experimental data.

## **Graduation Thesis: Study on Bayesian Theory-based Landslide Deformation Prediction Method**

Oct. 2023-June 2024

Research supervised by Assoc. Prof. JIREN XIE

- Developed a landslide tilting failure model using Bayesian linear regression to propose a real-time interval prediction method for landslide failure based on tilting monitoring.
- Validated the method's feasibility through four indoor model tests, three field tests, and on-site monitoring data, demonstrating improved dynamic prediction over traditional methods.
- Utilized MATLAB for coding, focusing on MCMC algorithms (MH, Gibbs, etc.).

## **College Students' Innovation and Entrepreneurship Project: Calculation and Analysis of Carbon Emissions from Open-cut Tunnel Excavation**

May 2023-June 2024

Research supervised by Prof. YULIANG LIN

*Group Leader*

- Assisted in drafting the project proposal and conducting experiments.
- Developed a model of calculating of carbon emissions from retaining and protection engineering of foundation excavation.

## **PROFESSIONAL EXPERIENCES**

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### **Hunan Architectural Design Institute Group Co., Ltd.**

July 2023

*Intern Engineer of the Geotechnical Technology Center*

- Modelled foundation pit support using Midas GTS NX for the Elderly and Child Care Training Building at Hunan Women's University. Conducted 2D plane modelling, simulated pile and pile-anchor support, and calculated displacements during excavation.

### **China Gezhouba Group Co., Ltd.**

Dec. 2022-Jan. 2023

*Construction Worker of the Project Department*

- Oversaw the enclosure structure of the core area of Shiyan Center Station, focusing on the construction of bored and drilled piles.
- Monitored the construction progress of Work Well #1, primarily following up and coordinating the construction of ring girder and columns.

## **EXTRACURRICULAR ACTIVITIES**

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### **Peer Psychological Assistance Association of the School of Civil Engineering**

*President*

Sept. 2022-Sept. 2023

*Director of the Activity Department*

Sept. 2021-Sept. 2022

*Member of the Activity Department*

Sept. 2020-Sept. 2021

- Conducted training sessions on psychological health knowledge.

- Organized psychological activities such as psychological skits and knowledge competitions.

**Student Union of School of Civil Engineering Student Union**

Sept. 2021-Sept. 2022

*Deputy Director of the Life Rights and Interests Department*

- Mainly responsible for student life, student rights, mental health and other aspects of student work, carried out thematic activities such as the Tree Hole of the Soul and 315 Rights Conference.

### **ADDITIONAL INFORMATION**

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**Languages:** English (fluent, IELTS7.0: L7.5, R8.0, W6.0, S 5.5; GRE: Q170+V151 AW:3; CET-6); Chinese (native speaker)

**Computer language:** MATLAB, Python, C++

**Software & Tool:** Adobe Illustrator, Origin, SketchUp, AutoCAD, GetData

**Interests:** Football (Player of the School of Civil Engineering in Central South University Football Team, Runner-up in 2020, Third place in 2021 and 2022 seasons)