Personal resume

Personal Information

Name: Zhili He
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Date of birth: 1998.07
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Native place: Huaian, Jiangsu
Website: zl-he.com

Educational Background

- School of Civil Engineering, SEU, Master of Science Degree, 2019.09-
  Average score: **91.58 (1/354)**
- School of Civil Engineering, SEU, Bachelor of Engineering Degree, 2015.09-2019.06
  GPA: **3.87/4.00 (Top 5%)** Average score: **91.20**
  SRTP: **96 (1/4000)**

Awards and Honors

[1] **Person of the year of SEU** (The **highest honor** among graduate students)
[2] **Outstanding youth of SEU** (**Top honor**, 10 students are selected from all the students per year)
[3] **Provincial-level merit student**
[4] **National scholarship** (**Top honor**)
[5] **First class scholarship** (Twice in a row), 2019 and 2020
[6] Outstanding graduate student cadre of SEU
[7] Excellent league member of SEU
[8] Annual team of School of Civil Engineering (leader)-2020
[9] Excellent graduation project of Jiangsu Province (**Top 0.5% of SEU**)
[10] Excellent graduation project of SEU (**Top 3% of SEU**)
[11] Outstanding graduates of Southeast University (**Top 5% of SEU**)
[12] Top 10 graduates of school of Civil Engineering (**3/279**)
[13] President Scholarship (**Top 1% of school**)
[14] Member of the annual team of the school of Civil Engineering-2018
[15] Guanghua scholarship

Research Projects

Graduate Stage

- Infrastructure damage inspection based on deep learning, 2019-
  Include image classification, object detection and semantic segmentation.
- Development of intelligent detection equipment, 2019-

Undergraduate Stage

- Determining heat and moisture emissivity of timber members with coating by Bayesian Inference.
  My undergraduate thesis, 2018-2019.
  I set up a framework including data reading, parameter sampling (MCMC), INP modification and FEM calculation. I used the MATLAB for MCMC and calling ABAQUS and Python. The function of ABAQUS is simulation calculation, and Python was used to modify files.
- Research on 3D printing system to print cementitious materials.
  Student Research Training Program, team leader, 2017-2019.
  We designed and assembled a 3D printer, which could be used to print special cement-based materials. For the cement-based material, the composition and proportion were optimized.

- Construction of research and learning platform including a website and APPs for iOS and Android. Student Research Training Program, ranking 1, 2016-2018.
  I taught myself HTML, JS, CSS and PHP and completed the development of the web pages, database, server and APPs independently. The codes are about 10000 lines.

Research Achievements

Paper

[1] **Zhili He**, Futao Ni, Weiguo Wang, Jian Zhang (Tutor), A physics-informed deep learning method for solving direct and inverse heat conduction problems of materials, Materials Today Communications. 28 (2021) 102719. **SCI, IF: 3.383**

[2] Zhongwen Zhang (Tutor), **Zhili He,** Zhaodong Xu (Tutor), Liwei Chen, Calculating moisture emissivity of timber members with different surface treatment, Construction and Building Materials. 269 (2021) 121253. **SCI, IF: 6.141**

Patent and Software Copyrights

[3] **Zhili He**, Jinlong Pan, Jiren Mai, et al, A real time feedback control method for printing accuracy of 3D printers. National invention patent, **Authorization**

[4] **Zhili He**, Haonan Yang, Jinlong Pan, et al, A nozzle body of concrete 3D printers with changeable nozzles. National invention patent, Disclosure

[5] Jian Zhang (Tutor), **Zhili He**, Shang Jiang, Intelligent inspection method of multiple damage types and unmanned surface vessel equipment for bridges near water. **PCT international patent** and National invention patent, Disclosure

[6] Jian Zhang (Tutor), **Zhili He**, Futao Ni, An automatic detection method of bridge cracks based on GAN. National invention patent, Disclosure

[7] Zhongwen Zhang (Tutor), **Zhili He**, Zhaodong Xu (Tutor), An inversion method for thermal parameters of wet wood based on Bayesian inference. National invention patent, Disclosure

[8] **Zhili He**. An extracurricular research center software. Authorization

[9] Jiren Mai, **Zhili He**. An 3D printer NC software for printing cement-based material. Authorization

Competition Awards

2020 National Post-Graduate Mathematical Contest in Modeling **National first prize**
2020 "Challenging Cup" Chinese College Students' Business Planning Competition **National golden prize**
2020 China International 'Internet+' Innovation and Entrepreneurship Competition **National golden prize**
2020 'Internet+' Innovation and Entrepreneurship Competition **Provincial Golden Award**
2019 ASCE Student Conference, Concrete Canno Competition **International Third Prize**
2019 Outstanding innovation and practice achievement award in civil engineering **National first prize**
2019 Structural Design Information Technology Competition of Undergraduate Students **National first prize**
2019 National innovation contest for intelligent construction and management **National first prize**
2019 National Post-Graduate Mathematical Contest in Modeling **National second prize**
2018 The Mathematics Contest in Modeling **International Meritorious Winner**
2018 Steel structure innovation design competition of national university students **National first prize**
2018 Innovation and Practice Contest of Construction Management **Provincial First Prize**
2018 BIM and Design competition of Assembly Structure for College Students **Provincial First Prize**
2017 National structural design competition for college students **National Honorable Mention**
2017 Mathematical Contest in Modeling for Chinese College Students **Provincial First Prize**

Skills and others

International experience: 2019, University of Tennessee, Knoxville, USA. **ASCE Student competition**
Skills: Multiple computer languages—Python, C/C++, Pascal, HTML, CSS, PHP, Javascript
Software—OFFICE, Matlab, AutoCAD, Photoshop, Revit, PKPM-BIM
Deep learning framework: **Pytorch**, **TensorFlow**
Language: Standard Chinese, English
I won the first prize of National Olympiad in Informatics in Provinces (NOIP) when I was a high school student.
Reference: References available upon request