Jing Zhang

E-mail: jing.zhang2@emory.edu

Education Background

Emory University   08/2018-present
Major: Computer Science
Degree: Ph.D.

Carnegie Mellon University (CMU)   01/2015-05/2016
Major: Civil Engineering (Advanced Infrastructure Systems (AIS))   GPA: 3.63
Degree: Master of Science

Taiyuan University of Technology (TUT)   09/2012-06/2014
Major: Engineering Mechanics   GPA: 88/100   Ranking: 6/450 (grade)
Degree: Master of Engineering (Mechanics)

Hunan University of Science and Technology (HNUST)   09/2007-06/2011
Major: Civil Engineering (concentration: Architectural Engineering)
GPA: 3.18/4.0   Ranking: 12/240 (grade)
Degree: Bachelor of Engineering

Skills

➢ Software: Matlab, Python, JAVA, LaTex, C++
➢ Language: English, Chinese
➢ Machine learning skills, Numerical simulation

Related Courses

Undergraduate
Theory Mechanics, Material Mechanics, Hydraulics, Structure Mechanics, Soil Mechanics, Probability, Advanced Mathematics

Master (in China)
Advanced Rock Mechanics, Numerical Methods, Matrix Theory

Master (in US)
Machine Learning, Data Mining, Computer Vision, Numerical Methods in Engineering, Computational Materials Modeling for Structures, Decision Making Under Uncertainty, Finite Element Method

Publications

Research on Feasibility in Pillar Ascending Mining of Left-over Coal (first writer)
Published in **Coal Technology**, ISSN 1008-8725, Page 319,2014.11

Jincheng Mining Area 15~# Coal Stent Type Selection (second writer)
Published in **Coal Technology**, ISSN 1008-8725, Page 213,2014.09

Analysis of the Security Issues of Anchor Bolt Design in Geotechnical Anchor Bolt Standards (first writer)
Published in **Urban Construction Theory Research,** ISSN2095-2104, Page 206, 2013.08

Predicting Conditions of HVAC Systems using Time-delay Neural Networks - A Case Study (in reviewing)

Research Experience

A Smart Device for Coal Workers' Health Improvement: Combining Non-Destructive, Element-Specific X-ray CT with Big Data Analytics & Machine Learning (US)   04/2017 – 05/2018

• Extract raw CT scanning data and then build a database to store all images

- Obtain the shape and size of the scanned dust particles
- Identify the predictive correlations between particle size & shape and chemical composition

Two-phase flow coupling model in ICTAS (US)   08/2018 - 03/2017
- Develop a predictive multiscale numerical model to couple pore-scale flow in fractures and Darcy flow in the surrounding porous media
- Obtain scale-invariant parameters that control mass transfer between pore- and continuum-scale domains for the formulation and parameterization of the upscaling equations in hypothetic exchange.
- Obtain an empirical correlation to relate the geomechanical and geometrical properties of subsurface fracture networks to solute transport in surface water.

Data Science on HVAC in IBM Smart Infrastructure Lab (US)   06/2015 - 01/2016
- Designed and trained a model related to HVAC systems
- Using neural network in machine learning with Bayesian Regulation
- Succeed to predict the elements behavior

Images search engine (US)   09/2015 - 12/2015
- Image segmentation and comparison
- GUI design

Identify endangered right whales in aerial photographs (US)   10/2015 - 12/2015
- Used whitening and convolution for feature extraction, introduced K means for feature definition and combined logistic regression for final classification.

TA for Probability in Department of Mathematics (US)   09/2015 - 12/2015

Literature Research on Dependence of Gravity Force on Material Composition (US) 03/2015 - 09/2015

Numerical Solution & Stability Analysis for the Mono-domain Model of Electrical Propagation in the Cardiac Tissue (US)   03/2015 - 04/2015

- Numerically solved the mono-domain model of electrical transmission in the heart tissue coupled with the ionic model of Aliev-Panfilov
- Stability analysis on the numerical scheme was performed. A set of numerical experiments allowed us to verify and visualize the results of this analysis.

Research into Ground Surface Fissure and Collapse in Lvliang and Pu County (CN) 11/2012 - 12/2012
Advisor: Prof. WU Jianguo
- In charge of data acquisition
- Analysis the situation of the damage
- Find solutions to fix the fissure and collapse

***L-shaped Complex Building Design* (Graduation Project) (CN)**   10/2010 - 05/2011
School-level Excellent Graduation Project
Advisor: Prof. XU Changhui
- Designed the L-shaped complex building, including design drawings, calculation sheet, and construction plan
- Self-studied PKPM software, had new design consideration for the building structures, and conducted structure optimization
- Organized a series of seminars about the application of PKPM software for my group members, which won unanimous good praises by the teachers and students

Internship Experience
Volunteer research assistant at University of Pittsburgh   06/2016 - 08/2016
- Learn 3D printing skill

- Finite Element analysis

Assistant Engineer **at Lu'An Mining Group Engineering Co. Ltd**   07/2011 - 08/2012
- Sorted out the materials for engineering project construction, and bid for engineering projects
- Took charge of the technical and quality supervision of engineering project construction
- Bid for the construction project of Gaohe Mine No.4 Single Apartment Buildings
- Checked and accepted the No.4 Single Apartment Buildings
- Won good praises from the corporate leaders for my excellent working performance in bidding

Designer **at Lu'An Mining Group Hongyuan Real Estate Development Co. Ltd**   06/2010 - 09/2010
Warehouse Keeper and Purchaser **at Yifengyuan Hotel**   06/2009 - 09/2009

Awards & Honors
- **Phi Kappa Phi** honor society   2017
- *Third Prize* in Hunan Undergraduate Students Structural Mechanics Competition   2010
- *Third Prize* in HNUST Chemistry Contest (300 contestants)   2008
- *Winning Prize* in Structural Mechanics Modeling Competition for the Five Provinces in South Central China   2008
- *Second Prize* in the Skills Competition of "Five Strengths Competition" for Freshmen held by School of Civil Engineering, HNUST (50 contestants, computer theory test and operation)   2007

Personality & Hobbies
- Cheerful character, sincere, optimistic, extensive hobbies
- Strong organizational ability and adaptability, excellent management and planning ability, coordination and communication skills
- Strong sense of responsibility, good at conducting research, good independent thinking
- Hobbies: basketball, football, swimming, painting, guitar, piano