Ruizhi (Jerry) ZHANG

Email: zhang2rh@mail.uc.edu Tel: (513)-764-4359

EDUCATION &WORK:

- 2006-2010: BS in Hydraulic Structures, Wuhan University, Wuhan, China. (GPA=3.75/4.0)
- 2010-2013: MS in Civil Coastal Engineering, Shanghai Jiao Tong University, Shanghai, China. Outstanding thesis.
- 2013-2020: Junior Engineer, Changsha Kuangye Academe Engineering, Changsha, China.
- 2020-2023: MS in Structural Engineering (expected to graduate in summer), University of Cincinnati, OH, USA. (GPA=4.0/4.0)

SKILLS SUMMARY:

- Solid background in math, physics, and structural mechanics, dynamics and analysis.
- High proficiency in manipulating fluidic/structural simulating tools such as ANSYS, CFD/FLUENT, ABAQUS and SolidWorks.
- High proficiency in setting up structural geometry with tools such as AUTOCAD and ETABS.
- High efficiency in setting up and using analysis tools such as SAP2000, PMPK and RAM for 1D and 2D elastic/non-elastic structural issues.
- Good capacity and adaptability to work effectively individually, or as part of a team, in fast-paced, deadline- oriented conditions.

PROFESSIONAL HIGHLIGHTS:

- Multiple times rewarded 'Outstanding Employee' during working for a structural design & analysis company.
- Passed the First Class Structural Engineer exam in China and registered as a Licensed Structural Engineer.
- Passed the Fundamentals of Engineering (FE) exam in California.

RELEVANT ACADEMIC COURSES:

- Structural Mechanics, Structural Dynamics, Reinforced Concrete Structures, Metal Structures I & II, Finite Element Modeling of Structures, Foundation Engineering, Prestressed Concrete, Bridge Design, etc.

PROFESSIONAL TOOLS:

- Drawing: AUTOCAD structures, Revit 3D, SolidWorks 3D, Rhinoceros, BIM, etc.
- Analyzing: SAP2000, ABAQUS, ETABS, ANSYS, CFD/FLUENT, PKPM, COSMOL, etc.
- Programming: MATLAB, C/C++, PYTHON, R, etc.

SELECTED RESEARCH & WORK EXPERIENCE:

- 2015 Junior Civil Engineer @CKA
  - Provided optimal configuration of a bolt-flange-gasket on a long-distance pipeline
  - Set up a 3D geometry of an eight-hole bolt-flange-gasket with SolidWorks.
  - Utilizing ANASYS, simulated various scenarios for tabulated values of shear stress and deformation, with different internal fluid pressure (Reynolds number), and contact frictional co-efficient,
  - Optimized the results with least square method to get optimum choices for sizes and materials.

- 2016 Junior Civil Engineer @CKA
  - Conducted a ductile failure simulated of a steel plate due to various impact using ABAQUS.

- Develop various material cards for wind, blast and impact loading using Johnson-Cook and Gurson Model.
- Simulated wind, blast and loading with different parameters until the steel plate fractures.
- Concluded that ductile failure occurs at a stress approximately 40% greater than yield stress.

- 2017 Junior Civil Engineer @CKA
  - Hosted design of a reinforced concrete office building of 3 story based on the principles of LRFD.
  - Following the national and international building codes, designed and detailed the floor slap, beam cross-sections based on the results of hand calculation and MASTAN2 modeling of external vertical loading combinations.
  - Designed column-beam frames based on the results of manual calculation and MASTAN2 modeling of lateral loading.
  - Consulted with geotechnical engineers, designed and detailed the strength, shear and moment design of the footings.

- 2018 Junior Civil Engineer @CKA
  - Hosted design of a reinforced concrete office building of 3 story based on the principles of LRFD.
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- 2019 Junior Civil Engineer @CKA
  - Designed and detailed cross sections of a box girder and a column on a highway bridge.
  - Assessed the column design by finite element analyzing and generating the moment-curvature using self-developed MATLAB codes.
  - Assessed the entire span design by examining deflection, shear and moment capacity utilizing SAP2000 under various vertical and horizontal loads.
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- 2021 Research Assistant @University of Cincinnati
  - Designed the gravity and lateral frame systems of a 6-story steel building in course projects.
  - Detailed the composite floor and column system due to vertical loading and verified with ETABs.
  - Modified and detailed the SCBF designs of X and inverted-V configurations and verified with ETABs.

- 2021-2023 Research Assistant @University of Cincinnati
  - Developed a high-definition model for long span composite beam for the study of global and local behavior of the beam with ABAQUS.
  - Conducted a series of parametric analysis in different shear stud configurations to study the premature failure of experimental specimen.
  - Conducted a series of small scaled push-out tests on long span composite beams.
  - Calibrated and utilized the Concrete Damage Model (CDP) model for the mentioned tests.

HONORS AND AWARDS:

- 2008-2010, Dean's list, Wuhan University
- 2008-2010, Scholar's Scholarship, Wuhan University
- 2010-2013, First Prize Scholarship of Shanghai Jiao Tong University
- 2020-2023, Graduate Incentive Awards, Cincinnati University