

ZHIXING LIU

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EDUCATION

University of Science and Technology of China

Sept 2022 – present

BS in Theoretical and Applied Mechanics(Major)

- GPA: top 10% in Engineering Faculty
- Related Courses: Theoretical Mechanics (4.0/4.3) , Strength of Materials (4.3/4.3) , Elasticity (4.0/4.3) , Fluid Mechanics (4.3/4.3) , Continuum Mechanics (4.0/4.3) , Engineering Numerical Analysis (4.3/4.3) , Dynamics and Control (4.3/4.3) , Equations of Mathematical Physics (4.3/4.3) , Computational Mechanics(4.0/4.3)

Computer Science(Minor)

- Related Courses: Data Structure, Computer Graphics, Foundations of Artificial Intelligence

INTERESTS

Computational Fluid Dynamics , Turbulent Multiphase Flows, Bubble Dynamics in Turbulence, Gas-Liquid Interactions, Two-Phase Flow Modeling, High-Performance Computing in CFD , Fluid Structure Interaction

AWARDS

Scholarship

- Outstanding Student scholarship from 2022-2023
- Elite Class scholarship from 2022-2023
- Outstanding Student scholarship from 2023-2024
- Elite Class scholarship from 2023-2024
- Outstanding Student scholarship from 2024-2025
- Elite Class scholarship from 2024-2025

Competition

- First Prize in the National College Mathematics Competition

SKILL

Programming: C++, C(Proficient) , Python , Matlab , LATEX

Engineering Software: COMSOL, AutoCAD , Solidworks , Paraview

Languages: TOEFL: 104 (R:26;L:29;S:25;W:25)

MyBest™ Scores TOEFL: 110 (R:30;L:29;S:25;W:26)

EXPERIENCE

University of Science and Technology of China

Visual Computing and Visualization Laboratory

Advisor Prof. Lanfang Dong

- Assisted in simulating the coupling of multiple physical fields in an oil-immersed transformer by finite element analysis, providing reliable data for the fault monitoring of transformers.

Computational Fluid Dynamics lab

Advisor Prof. Haibo Huang

- Conducted numerical simulations of three-phase flows to investigate the interaction and collision evolution mechanisms of bubbles and particle-laden flows under varying conditions.
- Independently developed a multiphase coupled solver that integrates the VOF method with the Immersed Boundary method.

University of Minnesota

Computational Fluid Dynamics lab

Advisor Prof. Lian Shen

- Employed the RANS approach, integrated with the CLSVOF interface-capturing method and a population balance model, to conduct CFD simulations of bubble fragmentation, degassing, and coalescence in turbulent flows caused by breaking wave, and proposed relevant physical models to interpret these phenomena.
- Developed a transformation method to enable bidirectional conversion of bubbles between CLSVOF and PBE frameworks, ensuring strict mass conservation throughout based on Fast Sweeping method.

PUBLICATIONS

No publications yet.