Contact

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(LinkedIn)

Top Skills

Finite Element Analysis
ANSYS
Matlab

Certifications

Doctor of Philosophy

Zimu Su

Applied Mechanics Research Scientist
Painted Post, New York, United States

Summary

• Focus on computational solid mechanics for material modeling, including non-linear failure, plasticity analysis, multiscale modeling, thermal, buckling, powder compaction, multi-contact modeling, etc.
• Finite element analysis experience using ABAQUS, ANSYS. Capable to build custom FE code with parallel computing capability.
• Experience of data-driven characterization of composite material properties.
• Data analysis and machine learning experience using Python and Matlab.

Experience

Corning Incorporated
Applied Mechanics Research Scientist
August 2022 - Present (9 months)
Painted Post, New York, United States

Vanderbilt University
Graduate Research Assistant
August 2017 - August 2022 (5 years 1 month)
Nashville, Tennessee

1. Established optimization framework for data-driven inverse characterization of composites material properties. (Coorperation with NASA Langley center).
• Characterize microscopic stiffness and thermal properties of epoxy resin in composites system.
• Build optimization framework using statistical learning method to characterize resin properties in the presence of noisy data.

2. Proposed advanced multiscale failure modeling of fiber-reinforced composite:
• Capabilities to capture complex failure characteristics at both microscopic and structural scale (e.g. multidirectional laminates).
• Endowed with regularizaiton to alleviate spurious mesh-size sensitivity in damage localization.

• High computational efficiencies of modeling high cycle fatigue behavior.
• Adaptivity to capture re-oriented crack such as delamination migration behavior.

Tsinghua University
Graduate Research Assistant
June 2014 - June 2017 (3 years 1 month)
Beijing

1. Conducted physical tests and numerical simulations for modeling buckling behavior of helicopter structural components (stiffened panels and honeycomb composite panels) using ANSYS/APDL.

2. Performed numerical modeling of stress distribution and critical failure detection in interference fit region of high-spped train axis using ANSYS.

3. Investigated the micro-mechanism of reduced graphene oxide papers (rGOPs) with electron-irradiation-induced reinforcement using Molecular Dynamics Simulator LAMMPS.

Siemens Ltd. China
Internship
July 2014 - August 2014 (2 months)

Studied transient heat transfer and thermal stress problems in turbine compressor structural component. Derived closed-form solution and conducted numerical simulations using ANSYS/APDL.

Education

Vanderbilt University
Doctor of Philosophy - PhD, Civil Environment Engineering · (2017)

Tsinghua University
Master’s Degree, Solid Mechanics · (2014 - 2017)

Tsinghua University
Bachelor’s Degree, Engineering Mechanics · (2010 - 2014)