

DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING

WILLIAM MAXWELL REED SEMINAR SERIES

“Multiscale modelling of materials: computing, data science, and uncertainty quantification”

Burigede Liu, Ph.D.
Department of Engineering
University of Cambridge

Abstract:

The recent decades have seen various attempts at accelerating the process of developing materials/structures targeted towards specific applications. The performance required for a particular application leads to the choice of a particular material system whose properties are optimized by manipulating its underlying microstructure through processing. The specific configuration of the structure is then designed by characterizing the material in detail, and using this characterization along with physical principles in system level simulations and optimization. These have been advanced by multiscale modelling of materials, high-throughput experimentations, materials data-bases, topology optimization and other ideas. Still, developing materials for extreme applications involving large deformation, high strain rates and high temperatures remains a challenge. This talk reviews a number of recent methods that advance the goal of designing materials targeted by specific applications.

Speaker Bio:

Burigede Liu is Granta Design Assistant Professor at the University of Cambridge. He received his Ph.D. in Engineering at University of Cambridge in 2019. He was a postdoc in Department of Mechanical and Process Engineering at ETH Zurich (2019) and a postdoctoral fellow in Mechanical and Civil Engineering at California Institute of Technology (2019-2021).

Date: Monday, April 3, 2023
Place: Whitehall Classroom Building 118

Time: 3:00 PM EST
Contact: Dr. Jesse Hoagg

Attendance open to all interested persons