

# Investigation of Fluid-Structure Interaction Modeling Methods

## Objective:

The purpose of this project is to establish predictive models of the Fluid-Structure Interaction (FSI) system. The application will be predicting the mechanical responses (e.g. stiffness, impact wave absorption, etc.) of lattice structures/cellular metamaterial structures with fluid infill.

This project can be extended to a Master's or PhD research project, depending on the student's interests and performances.

## Resources:

- Training materials: slides and sample codes provided by the faculty advisor, online videos, and other online resources.
- Software: ABAQUS, MATLAB, Python

## Research tasks:

1. Conduct literature study on FSI modeling;
2. Implement FSI modeling on lattice structure/cellular metamaterial structures;
3. Prepare research presentations;
4. Investigate structure design methods to achieve optimal performances.

## Contact:

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- Please send your resume and transcript (a screenshot is acceptable) to Dr. Xu if you are interested.

