

Xiaotian(Oliver) Shi

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Education

University of Washington (UW)	Seattle, WA
Ph.D. Program in Aeronautics & Astronautics	09/2016-Present
University of Southern California (USC)	Los Angeles, CA
Master of Science in Mechanical Engineering (05/2016)	01/2015-05/2016
Harbin Institute of Technology (HIT)	Harbin, China
Bachelor of Engineering in Engineering Mechanics (06/2014)	08/2010-06/2014

Research Interest

Nonlinear dynamics, Wave propagation, Mechanical Metamaterial, Phononic crystal

Research Experience

Laboratory for Engineered Materials and Structures, UW	Seattle, USA
<i>Research Assistant</i> (Supervisor: Dr. Jinkyu Yang)	09/2016-Present
<ul style="list-style-type: none">Investigate the linear and nonlinear wave propagations in stiffness-graded granular crystalsDesign and numerical study of 3D topological mechanical metamaterial	
Bioinspired Materials and Structures Laboratory, USC	Los Angeles, USA
<i>Research Assistant</i> (Supervisor: Dr. Qiming Wang)	08/2015-12/2015
<ul style="list-style-type: none">Designed and conducted tensile test on Hydrogel with different healing time to study the self-healing properties of the material.	
Structural Dynamics Laboratory, HIT	Harbin, China
<i>Research Assistant</i> (Supervisor: Dr. Weicheng Gao)	09/2014-11/2014
<ul style="list-style-type: none">Conducted buckling test for panel structure and beam web of aircraft elevator and rudder	
Department of Astronautic Science and Mechanics, HIT	Harbin, China
<i>Graduation thesis</i> (Supervisor: Dr. Qiusheng Wang & Dr. Kaiping Yu)	12/2013-06/2014
<ul style="list-style-type: none">Mechanics property Analysis and Testing of Carbon-fiber Reinforced Bismaleimide resin Composite Material under High-temperature Condition.	
Structural Dynamics Laboratory, HIT	Harbin, China
<i>Research Assistant</i> (Supervisor: Dr. Wei Liu)	05/2012-12/2013
<ul style="list-style-type: none">Structural Scale Model Design and Experimental Verification of Free Flight with Adjustable Suspension Stiffness System.	

Journal Publications

3. **X. Shi**, R. Chaunsali, and J. Yang, "Weyl points and Fermi arcs in 3D topological mechanical metamaterial," in preparation.
2. **X. Shi**, R. Chaunsali, Y. Wu, and J. Yang, "Elastic Wannier-Stark ladders and Bloch oscillations in 1D granular crystals," *Journal of Applied Physics* **123**, 104904 (2018). (Invited)
1. Y. Wu, K. Yu, L. Yang, R. Zhao, **X. Shi**, and K. Tian, "Effect of thermal stresses on frequency band structures of elastic metamaterial plates," *Journal of Sound and Vibration* **413**, 101 (2018).

Conference Presentation

† Presenter

1. X. Shi[†], R. Chaunsali, Y. Wu, J. Yang, "Experimental demonstration of elastic Wannier-Stark Ladders

and Bloch oscillations in 1D granular crystals,” American Physical Society, LA, CA, March 2018

Teaching Experience

Teaching Assistant, UW

AA 430 Finite Element Analysis in Aerospace	Autumn 2016
AA331 Aerospace structure I	Winter 2016
AA332 Aerospace structure II	Spring 2017

Honors and Awards

First Class Scholarship for Academic Excellence awarded by HIT	03/2014
First Prize of the National Mathematics Competition for College Students (Heilongjiang Province Division)	11/2012
First Prize in China Division of Flying into the Future: Space Exploration Innovation Contest	09/2012

Software Skills

MATLAB, Auto CAD, Solidworks, Abaqus, Ansys, Patran/Nastran, C Programming Language

Facility experience

Strain Gauge, Zwick UTM, Shaking Table, Dynamic Strain Indicator, Instron Material Testing Machine