

Jiaoran WANG

jiaoranw@usc.edu | TEL: 213-284-4964 | Los Angeles, CA, 90007

LinkedIn: <https://www.linkedin.com/in/jiaoranw/>

SUMMARY

- **Objective:** Applying for 2022 Fall Mechanical Engineering Ph.D. Program
- **Research Interests:** Advanced Manufacturing, Bio-inspired Robotics, FEA, Structural Design and Optimization, Control and Automation

EDUCATION

09/2019 - 05/2021	University of Southern California (USC) • M.S. in Mechanical Engineering. • GPA: 3.84/4.0	Los Angeles, CA, USA
09/2015 - 07/2019	Harbin Engineering University (HEU) • B.E. in Aerospace Engineering (Flight Vehicle Design and Engineering) • GPA: 3.42/4.0 (Major GPA: 3.46/4.0) • Dissertation: <i>Design and Experimental Study of Thermoelectric Structure in Aerospace Aircraft</i>	Harbin, China

QUALIFICATIONS

✧ Programming Language:	MATLAB-Simulink (proficient), Python (good at data structure), R/RStudio(familiar), C/C++(familiar), Octave (familiar)
✧ Web Application Language:	HTML5, CSS3, PHP, JavaScript, SQL (familiar)
✧ CAD Software:	SolidWorks (proficient), Auto-CAD (proficient), UG-NX (familiar), CATIA (familiar)
✧ Simulation Software:	ANSYS (proficient in APDL/FLUENT/CFX), COMSOL (familiar with Multiphysics)
✧ Equipment:	3D Printer(proficient), Laser Cutting Machine, CNC Machine and other machine tools

EXPERIENCE

01/2021 - 06/2021	Flexible Pressure Sensing Device Fabrication , CAM Lab, USC <i>Graduate Research Assistant (Advisor: Prof. Hangbo Zhao)</i> • Experiment: convert the small thrust and pull force into the color rendering of the liquid film of the sensor • Test and analysis: test and get the push and pull stress and sensor grayscale curve, used for micro sensor applications	Los Angeles, CA, USA
01/2020 - 05/2021	Bio-inspired Biped Robot Project , Brain-Body Dynamics Lab, USC <i>Graduate Research Assistant (Advisor: Prof. Francisco Valero-Cuevas)</i> • Implemented proprioceptive artificial skin fabrication and signal testing of biomechanical leg for Center of Pressure (CoP) estimation • Conducted K-Nearest Neighbors (KNN) algorithm for clustered data evaluation and prediction	Los Angeles, CA, USA
01/2020 - 05/2020	Additive Manufacturing Research , CAM Lab, USC <i>Directed Research (Advisor: Prof. Satyandra K. Gupta)</i> • Worked on Additive Manufacturing 3D Printing of Conformal Antenna • Designed an Arduino – Python UDP communication system for manually and remotely control for robot 3D printing with linear control and robotic path planning algorithm involved	Los Angeles, CA, USA
09/2019 - 11/2019	Design Project on Automatic Test-tube Sorting System , Yaskawa America, Inc. <i>Course Project (Advisor: Prof. Satyandra K. Gupta)</i> • Conceived a design proposal using rollers and conveyers for rapid Test-tube Sorting System • Designed OpenCV (visual image recognition technology) for tube identification	Los Angeles, CA, USA
02/2019 - 06/2019	Design and Experimental Study of Thermoelectric Structure in Aerospace Aircraft , HEU <i>Capstone Project (Advisor: Prof. Jia Yu)</i> • Invented the thermoelectric piece architecture among annular thermoelectric module at gunship nozzle, and the temperature difference experiment was carried out • Proposed a method to determine the optimal size based on the conversion efficiency extremum. Increased the thermoelectric conversion efficiency by 37.30% and the output power by 285.14%	Harbin, China

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2016 - 2019	Aircraft Model Aerodynamic Optimization , Aircraft Innovation Lab, HEU <ul style="list-style-type: none">Renovated the overall process of aircraft model manufacturing, including designing, painting with software (<i>Auto-CAD</i>, <i>UG</i>), Mastered the use of <i>3D printers</i> and large <i>laser cutting machines</i>	Harbin, China
11/2017 - 12/2018	Dynamic Analysis and Motion Accuracy Evaluation , Tsinghua University <i>Remote Research Project (Advisor: Prof. Yi Yang)</i> <ul style="list-style-type: none">Topic: Dynamic analysis and motion accuracy evaluation of multibody system with clearance mechanism considering uncertain parametersIntroduced OpenCV flow field modeling for flight environmental construction	Beijing, China
03/2017 - 06/2017	Industrial Metalworking Practice , Engineering Training Center, HEU <ul style="list-style-type: none">Studied the operation methods of milling machines, planers, lathes and grinding machines, miniature-semiconductor spot welding and electric-arc welding, robot installment and operation, CNC machine tool programming and wire-electrode cutting, benchwork, etc.	Harbin, China

PUBLICATION

- ✧ Darío Urbina-Meléndez, **Jiaoran Wang**, et al. "Estimating Center of Pressure of a Bipedal Mechanism Using Proprioceptive Synthetic Skin around its Ankles." 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC). (in submission)

INTERNSHIPS

06/2020 - 07/2020	BCG Virtual Experience Program , InsideSherpa 2020 (online) <ul style="list-style-type: none">Participated in the open access Digital Technology Data Analytics Program Virtual Experience with categorize and process data structures and data visualization	Los Angeles, CA, USA
02/2019 - 03/2019	Intern , China Academy of Launch Vehicle Technology (CALT) <ul style="list-style-type: none">Worked in the structure of transportation rocket projector and participated in the unit part grinding and assembly process	Beijing, China
07/2018 - 09/2018	Intern , AVIC Shenyang Aircraft Co., Ltd. <ul style="list-style-type: none">Visited the workshops of civil and military aviation and learnt practical aircraft manufacturing knowledge and skills as well as the differences in the procedures of manufacturing	Shenyang, China

AWARDS

Issue Date	Name	Issuing Organization
06/2019	2019 Outstanding Dissertation , <i>Meritorious Winner</i>	HEU
02/2018	2018 Interdisciplinary Contest in Modeling , <i>Honorable Mention</i>	Consortium for Mathematics and its Application. Inc
11/2017	HEU Students Innovation Training Program , <i>Award of Excellence</i>	HEU
2015 - 2019	HEU Outstanding scholarship <ul style="list-style-type: none">Merit Student and Outstanding Party Member: <i>Twice</i>University-level Excellent Scholarship: <i>Six Times</i>	HEU

EXCHANGE EXPERIENCE

02/2018 - 03/2018	International Programs , UC San Diego Extension <ul style="list-style-type: none">Program: English for Engineering and TechnologyGrade: <i>A</i>	San Diego, CA, USA
01/2018 - 02/2018	Course Learning Program , University of Minnesota <ul style="list-style-type: none">Department: Chemical Engineering and Material ScienceCore Courses: Reactor and reaction engineering, Chemical engineering laboratory, Numerical methods in chemical applications	Minneapolis, MN, USA