Changqing Lu

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Education

Stanford University – Stanford, California GPA: 3.78/4.00
M.S. in Mechanical Engineering, September 2019 to present

University of Michigan – Ann Arbor, Michigan GPA: 3.94/4.00
B.S.E. in Aerospace Engineering, September 2017 to April 2019

Shanghai Jiao Tong University – Shanghai, China GPA: 3.67/4.00
B.S.E. in Mechanical Engineering, September 2015 to August 2019

Main Projects

Controllable Rotation of Electromagnetically Levitated Object *May 2019 to August 2019*
- Active and strongly motivated member of a team of five
- Generated the final solution concept and fully involved in design and manufacture
- Fully responsible for the design and test of the PID rotation control system
- Good interaction with team members, close follow-ups on project schedule and planning

Composite and Aluminum Landing Gear Impact Structural Test and Analysis *January 2019 to April 2019*
- Test rig design and manufacture
- Preliminary theoretical model analysis and prediction on structural impact
- Test data collection with Raspberry Pi and acceleration sensors

Short-distance Electric Airplane Preliminary Design and Optimization *September 2018 to December 2018*
- Preliminary theoretical aerodynamic analysis
- Coded the optimization python framework for engineering parameters for the airplane
- Validation on parameters with aerodynamic analysis of wing area

Autopilot Vehicle with Transformable Wheels on Multi-terrain Environment *May 2018 to August 2018*
- Coded the control system on obstacle and terrain-type detection
- Involved in structural design of the wheels and manufacture of the prototype vehicle

Research & Courses

Machine Learning on Airfoil Transition and Separation Location (research) *January 2019 to April 2019*
- Integrated Xfoil with python and generated the airfoil parameter data collection
- Used tensorflow package to predict the airfoil friction coefficient curves
- Good prediction results with small amount of data

Heat Transfer Characteristics of Porous Materials (research) *May 2018 to August 2018*
- Computational analysis on heat transfer characteristics of porous materials
- Coded the python framework with openBTE for further research
- Honor Undergraduate Research Program in UM-SJTU Joint Institute

Introduction on Fundamentals and Selections of Battery Materials (course) *May 2019 to August 2019*
- Fundamental knowledge of rechargeable battery materials and electrochemistry
- Review article on Solid Electrolyte Interphase (SEI) development and challenges

Computer Skills
Proficient in Matlab, python
Familiar with Solidworks, CATIA, UX, Star CCM+
Familiar with integration between microcontrollers (Arduino, Raspberry Pi) and sensors

Hobbies
Running, Photography

Personality
Self-motivated, Responsible, Self-disciplined, Perseverant
Good listener, Team player