Liang Liu

liuliang@umich.edu * 1-734-680-4746 * 1855 Shirley Lane, Apt B6, Ann Arbor, MI

EDUCATION

University of Michigan, *College of Engineering* **Ann Arbor, MI, U.S.**
B.S.E. Aerospace Engineering GPA: 3.99/4.00 Sep 2014-Apr 2016 (expected)
Shanghai Jiao Tong University, *UM-SJTU Joint Institute* **Shanghai, CHINA**
B.S.E. Mechanical Engineering Cumulative GPA: 3.82/4.00 (Rank 1/92) Sep 2012- Aug 2016 (expected)

EXPERIENCE

Undergraduate Research Assistant *University of Michigan, Aerospace Engineering, MI* **Jan 2015–Present**
Worked in the Aerospace Robotics Control Laboratory, directed by Professor Anouck Girard

- Designed a homing guidance mechanism for a vehicle with single omnidirectional transmitter to converge to a stationary beacon in quantized signal system, known only the signal strength change
- Simulated the guidance performance and optimized the control parameters by using Monte Carlo sampling test in Matlab, and wrote an ASME paper under the process of review
- Built a connection in Arduopilot platform and realized GPS data exchange between Arduopilot and Vicon

Undergraduate Research Assistant *University of Michigan, Aerospace Engineering, MI* **Jan 2015-May 2015**
Worked in the Adaptive Material and Structures Laboratory, directed by Professor John Shaw

- Carried out several experiments utilizing Perkin Elmer DMA 7e, analyzed data in Matlab, and acquired coefficient of thermal expansion and relaxation modulus of Shape Memory Polymer (SMP)
- Pretreated epoxy by constant temperature heating, built composite and machined test samples for Perkin Elmer DMA 7e
- Fabricated six low-cost functional prototypes and demonstrated the shape-memory feature of the polymer

Research Assistant *Shanghai Jiao Tong University, Joint Institute, Shanghai, CHINA* **Mar 2014-Jun 2014**
Directed by Professor Roberto Dugnani

- Manufactured ten graphene carbon nanotube samples following the ASTM standards
- Designed the experiment scheme, operated Wear and Friction Tester and collected data of static friction
- Processed 10,000+ data with Origin, analyzed the dependence of static friction on sample constituent

Robotic Hand Designer *Shanghai Jiao Tong University, Joint Institute, Shanghai, CHINA* **May 2014-Aug 2014**

- Designed 30+ parts in AutoCAD and CATIA, simulated stress and strain in STAR-CCM and prototyped a pair of mechatronics hands of 4 degrees of freedom, aimed at tying surgery knots
- Optimized the runtime efficiency by multithreaded programming and finally managed to tie 22 knots in 15 minutes
- Designed and built a circuit board to coordinate with Arduino micro-controller to drive powerful motors

Grader *Course: AE225, Introduction to Gas Dynamics, University of Michigan, MI* **Jan 2015-May 2015**

- Graded homework sets, gave feedback on common mistakes and assisted course preparation

SKILLS

- **CAE and FEA Software:** Solidworks, Unigraphics NX, CATIA, AutoCAD, STAR-CCM, COMSOL, Xfoil
- **Programming Language & Framework:** C/C++, Java, Matlab/Simulink, Python, HTML/CSS, JavaScript
- **Data Acquisition & Processing:** LabVIEW, Arduino, Mathematica, Origin
- **Operating System:** Windows, Linux/Unix
- **Others**: Latex, MS Office, Photoshop, Wind Tunnel Testing, Machining

AWARDS

- **University of Michigan:** College of Engineering Dean's List (2014-2015)
- **Shanghai Jiao Tong University:** Excellent Academic Scholarship (A-class (1%), 2013, 2014)
- **American Physical Society & American Astronomical Society:** Bronze medal in University Physics Competition (2013)