Hongyi Xia

11048 Amherst Ave.
Silver Spring, MD 20902
+1 (301) 541 7635
hongyi.xia@gmail.com
www.linkedin.com/in/hongyixia

Education

2010–2015 Expected — **B.S. Aerospace Engineering**, *University of Maryland College Park*, College Park, MD, *3.75*.
Aerospace Engineering Honors Program

2006–2010 — **High School**, *Montgomery Blair High School*, Silver Spring, MD, .
Science, Mathematics, and Computer Science Magnet Program

Experience

Industry

September 2013–September 2014 — **Propulsion Intern**, *Space Exploration Technologies*, Hawthorne, CA.

- Developed software to visualize 3D combustion simulations of the Raptor rocket engine in C++ and OpenGL. Integrated with Leap Motion sensor for interaction via hand gestures.
- CFD and thermal analysis of the Merlin 1D rocket engine, Crew Dragon vehicle, Falcon 9 v1.1 vehicle, and Falcon v1.1 developmental vehicle in ANSYS CFX, Star-CCM+, and Thermal Desktop to aid design, ensure correct operation of various components, and to keep on schedule for flight vehicle development and production.
- Created algorithms to automate data review of the Merlin 1D and Merlin Vacuum engine acceptance testing. Optimized and updated engine performance codes for efficiency and speed. Supported data aquisition for launch operations.

September–December 2012 — **Entrepreneurial Consultant**, *Science Applications International Corporation*, College Park, MD.
Researched and wrote recommendation report on waste heat recovery systems for military engines as part of an entrepreneurial consulting engagement partnered through Hinman CEOs.

Research

June–August 2013 — **Research Intern**, *Interaction Lab, University of Southern California*, Los Angeles, CA.
Developed exercises for the NAO robot, an exercise buddy for overweight children in an obesity intervention study. Participated in the Viterbi Summer Undergraduate Research Experience (SURE) program.

June 2010–May 2013 — **Research Intern**, *Collective Dynamics and Control Laboratory University of Maryland*, College Park, MD.

- Designed and performed flow visualization experiments to validate a potential flow model. Research culminated in paper titled "Experimental Flow Visualization of Karman Vortex Flow past a Fish-inspired Robot". Presented at the 2013 AIAA Region I-MA Student Conference. (2012-2013)
- Wrote Matlab simulations to model the dynamics of rigid body collisions to study collective behavior of hexbugs. (2011)
- Developed a motion coordination algorithm for Lego NXT that enables two robotic tanks to balance on a seesaw. (2010)

June–August 2012 — **Research Intern**, *Miniature Robotics REU Program, University of Maryland*, College Park, MD.
Developed a method to visualize 3D flows using Microsoft Kinect as a sensor. Calibrated and programmed Microsoft Kinect cameras in OpenCV and python to collect depth video data. Wrote Matlab scripts to image process depth video data of smoke rings and calculate their flow properties.

June–August 2009 **Research Intern**, *National Institutes of Health*, Bethesda, MD.
Research culminated in paper titled "Determination of the Effect of Modifying Gb5 Expression Levels on Drosophila Oxidative Stress Resistance." Placed semi-finals in Siemens Competition in Math, Science, and Technology.

Teaching and Mentoring

September 2012–May 2013 **Math Coach, Math Success Program**, *University of Maryland*, College Park, MD.
Tutored students in undergraduate math courses.

September 2011–May 2013 **Peer Mentor, SEEDS Peer Mentoring Program,**, *University of Maryland,* , College Park, MD.
Mentored a group of 10 freshman engineering students to facilitate their adjustment to college and the engineering program each year.

January–May 2012 **Teaching Fellow, ENES232 Thermodynamics**, *University of Maryland*, College Park, MD.
Facilitated recitation for 60 students. Graded student quizzes. Held weekly office hours.

Languages

Mandarin Chinese **Fluent** *Native Speaker*

English **Fluent** *Lived in the United States since age 6*

Computer skills

Languages Matlab, Java, Python, C++, OpenGL

Applications ANSYS, Star-CCM+, Thermal Desktop, Autodesk Inventor, Siemens NX, VIsual Studio

Operating Systems Linux, Macintosh, Windows

Academic Honors

- Banneker Key Scholar - Full, four year scholarship to the University of Maryland (2010-2014)
- Siemens Competition in Math, Science, and Technology Semifinalist 2009
- Maryland Distinguished Scholar Finalist (Academic Achievement) 2009
- National AP Scholar 2009

Affiliations

Hinman CEOs A living and learning entrepreneurship program at the University of Maryland

AIAA American Institute of Aeronautics and Astronautics

Tau Beta Pi National Engineering Honor Society

Sigma Gamma Tau National Aerospace Engineering Honor Society

Alpha Omega Epsilon Professional Engineering Sorority

Publications

Publications

Hongyi Xia. *Experimental Flow Visualization of Karman Vortex Flow past a Fish-inspired Robot.* 2013: AIAA Region I-MA Student Conference.

Hongyi Xia. *3D Flow Visualization using Microsoft Kinect* 2012: Miniature Robotics REU Program Final Presentation University of Maryland College Park.

Hongyi Xia. *Determination of the Effect of Modifying Gb5 Expression Levels on Drosophila Oxidative Stress Resistance* 2009: Placed as semifinalist in the Siemens Competition in Math, Science, and Technology.