HONGYI XIA

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EDUCATION

University of Maryland, College Park Expected: May 2015
B.S. in Aerospace Engineering - Aerospace Engineering Honors Program GPA: 3.76
Coursework: Aerodynamics, Dynamics, Controls, Vibrations, Thermodynamcis, Heat Transfer, Propulsion, Aerospace Structures
Teaching: Math Success Program - Tutored students in undergraduate math courses. ·SEEDS Peer Mentoring Program Teaching Fellow for ENES232 Thermodynamics (Spring 2012), ENAE380 Flight Software Systems (Fall 2014)
Affliations: Hinman CEOs Entrepreneurship Program · University Honors Program · Alpha Omega Epsilon Professional Engineering Sorority · Tau Beta Pi National Engineering Honor Society ·Sigma Gamma Tau National Aerospace Honor Society

EXPERIENCE

Space Exploration Technologies September 2013 - August 2014
Propulsion Intern *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 9 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. Complete rewrite of current engine performance code to calculate engine parameters of single engine acceptance test data and stage test data for improved readability, accuracy, and consistency. Built an understanding of the engine fluid system, core rocket equations, pump maps, stage calculations etc.
- Supported daily operations of the Liquid Engine Development team in data review and flight data acquisition during launch operations. Developed application to support flight data acquisition.

Collective Dynamics and Control Laboratory June 2010 - May 2013
Undergraduate Researcher *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)
- 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. Participated in the National Science Foundation sponsored Miniature Robotics Research Experiences for Undergraduates Program at the University of Maryland (2012)
- 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)

SKILLS

Languages Matlab, Java, Python, C++, OpenGL, git, LaTeX
Applications Ansys, Star-CCM+, Thermal Desktop, Autodesk Inventor, Siemens NX, Visual Studio, Linux
Mandarin Chinese (native speaker)

AWARDS

1st Place, JP Morgan Code for Good Challenge - Delaware September 2014
Banneker Key Scholar - Full, four year scholarship to the University of Maryland. March 2010
Siemens Competition in Math, Science & Technology Semifinalist October 2009
Maryland Distinguished Scholar Finalist (Academic Achievement) October 2009
National AP Scholar August 2009