Hongyi Xia

hongyi.xia@gmail.com | 301.750.8638

5+ years of scientific computing experience, creating software solutions for Aerospace. Interested in leveraging machine learning and big data to build better products. Experienced in R, Python, SQL, Java.

EDUCATION

STANFORD UNIVERSITY
M.S. Mechanical Engineering
2015-2017
Stanford, CA

UNIVERSITY OF MARYLAND COLLEGE PARK
B.S. Aerospace Engineering
2010-2015
College Park, MD

CERTIFICATES
MIT xPRO Data Science

LINKS

Github:// **hongyixia**
LinkedIn:// **hongyixia**

COURSEWORK

Control Design Techniques
Data Mining and Analysis
Finite Element Analysis
Linear Dynamical Systems
Machine Learning
Mechanical Properties of Materials
Space Mechanics
Product-Based Engineering
Design, Innovation, and Development

TEACHING ASSISTANT

STANFORD GRADUATE SCHOOL OF BUSINESS
Business Intelligence from Big Data

UNIVERSITY OF MARYLAND COLLEGE PARK
Aerospace Computing
Flight Software Systems
Thermodynamics

SKILLS

git
Java
JavaScript
Julia
LATEX
Linux
Matlab
Python (pandas,numpy)
R (tidyverse, ggplot, shiny)
SQL
ANSYS
COMSOL
CATIA V5

EXPERIENCE

THE BOEING COMPANY | Loads and Dynamics Engineer
June 2017 - Present | Everett, WA
- (07/2018 - Present) Prototype machine learning solutions in R/Python to automate aerodynamic data reduction, saving the team hundreds of hours per loads cycle. Trained a supervised learning classifier to automate pre-processing of wind tunnel data for loads data generation in R/Python. Developed a shiny web application to quickly preview results. Consultant for machine learning/data science projects within the organization.
- Mine large quantities of in-flight airplane sensor data to gather insights about airplane takeoff and landing operations and compare to loads design baselines. Use SQL queries to collect data from specific flight segments (takeoff, landing, taxi). Clean the data by filtering out poor quality flights and missing data. Implement numerical methods to perform fatigue analysis. Create visualizations and statistical summary reports using R/Python. Develop generalized framework to access and process data in Hadoop.
- Design and implement numerical methods in Python to automate aerodynamic loads analysis of leading and trailing edge devices for new airplane development.
- Structures Design Engineer (06/2017 - 07/2018) Product development for new airplane program. Prototype, analyze, and test new composite structures. Finite element analysis of composite structures in Abaqus. Hands-on composite fabrication and machine shop experience building tooling and test fixtures. Software development and testing of in-house analysis tools for composite manufacturing.

STANFORD UNIVERSITY | Graduate Research Assistant
October 2015 – June 2017 | Otobiomechanics Group
- Finite element modeling of the cochlea in COMSOL Multiphysics. Performed structural and modal analysis to study the biomechanics of hearing.

NASA AMES RESEARCH CENTER | Research Associate
June 2015 – 2016 | Moffett Field, CA
- Developed a method to image process video data of fruit flies flown in space.
- Used the Pleiades supercomputer to calculate parameters of interest to assess the role of oxidative stress pathways that regulate neurobehavioral changes in fruit flies as a result of microgravity conditions, comparing a stress resistant mutant Drosophila strain with a wildtype control strain.

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY | Intern
Jan 2015 – May 2015 | Laurel, MD
- Developed web applications using node.js, React.js, Require.js, d3.js, c3.js, Meteor.js for Air and Missile Defense.

SPACE EXPLORATION TECHNOLOGIES | Propulsion Intern
Sept 2013 – August 2014 | 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.