Yulin SHI

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OBJECTIVES

To devote my 2-year aircraft system simulation and controller development experience. (available from May 2016)

EDUCATION

Master of Mechanical Engineering (Thesis) Sept 2014 - April 2016
McGill University, Montreal *GPA: 3.86/4.0*
Thesis: design finite element and frequency algorithms for structure dynamics and vibration computing

Bachelor, major in Flying Vehicle Power Engineering Sept 2009 - July 2013
Beihang University (BUAA), Beijing, China *GPA: 3.65/4.0*
Publication: Shi, Yulin, et al. "Constructive non-iterative explicit models of turbofan engines with introduced poles." *Applied Sciences and Technology (IBCAST)*. IEEE, 2015.

SKILLS

Programming: C/C++, Matlab/Simulink, Java, Python, html, FreeFem++, GSL, Gazebo
IDE & OS: xCode, Eclipse, Latex, Windows, Linux, Unix, ROS
Hardware: Arduino, SCM-51, Soldering, CNC lathes, benchworks, UAV
Language: English (fluent), Mandarin (native)

PROFESSIONAL EXPERIENCES

Master student Sept 2014 - now
Structure Dynamics and Vibration Laboratory, McGill University *Montreal, Canada*

· Developed semismooth Newton iterative algorithms to solve contact stress.
· Developed a software project using FreeFem++ (in C++) libraries to compute contact stress.
· Developed a frequency solver for rotor-stator contact (to be published in a conference).

Simulation engineer Sept 2015 - now
McGill Robotics Club *Montreal, Canada*

· Write simulation control plug-ins with Gazebo API in C++.
· Develop high-fidelity simulation environment for testing Mars Rover and drone.
· Built an autonomous vehicle with an Arduino board and a sonar sensor.

Research assistant, teaching assistant Sept 2012 - July 2014
Aero-engine Control Laboratory, Beihang University *Beijing, China*

· Developed fast thermodynamics and aerodynamics models of turbofan engines using Matlab/Simulink.
· Developed robust fuel flow rate controllers using the linear matrix inequality toolbox.
· Wrote technical documents. Made presentations to partners in aircraft engine industries.

Engineering intern March 2013 - August 2013
Institute of Engineering Thermophysics, Chinese Academy of Science *Beijing, China*

· Developed the embedded system prototype of temperature control using SCM-51 development kit. Wrote sensors drivers in assembly language.
· Developed the thermodynamic model of an industrial recuperative gas turbine generator using the Gas Turbine Simulation Program (GSP) and Matlab/Simulink. Wrote the starting manoeuvre handbook.

RELEVANT COURSES

Dynamics: Aerodynamics, Thermodynamics, Finite Element Method, Aircraft Structure and System
Computer: Robotics, Machine Learning, Artificial Intelligence, Numerical Computing
Control: Linear systems, Robust Control, Aircraft Engine Control