Kaiqiang ZHANG

D.O.B. 1991.04.13 ***MR.***

Employment

2014-Present **Research Assistant**, *The University of Bristol*.
At invitation of Dr. Guido Herrmann, I joined as a research assistant in Automatic Control and Testing Lab from Jan. 2014 for 5 months to work on precision control of Bristol's high precision Atomic Force Microscopes (AFM). I am also studying the topic of novel non-raster scanning approach in AFM for a journal paper

Education

2013–2014 **Master of Science**, *The University of Bristol, GPA 73%.*
MSc with Distinction Specialty: MSc of Advanced Engineering Robotics

2006–2012 **Bachelor of Engineering**, *Xi'an Jiaotong University (One of top 10 universities in China; "C9 League","Project 211" and "Project 985" University), GPA 76%,the top in class is 81%*
One of the top 10 in class majored in Automation.
A student of the Special Class for the Gifted Young of Xi'an Jiaotong University (The program of the Special Class for the Gifted Young of China in Xi'an Jiaotong University aims to cultivate those with talents for learning science and technology in the middle school to become part of the technical elite of China.)

Projects & Publications

Project ***High Precision Control Approaches for Bristol's Probe Microscopes in the University of Bristol***

Description Atomic Force Microscopy (AFM) is widely used to study biological specimen or material physics in nanoscale. For rapid specimen topography imaging, I developed a novel AFM non-raster scanning algorithm to speed up the scanning process using contour prediction algorithms with adaptive filters. Simulation results were compared with an Iterative Learning Control approach.

Results The report of my MSc final project was marked 72%; **A paper was accepted by the 19th World Congress of the International Federation of Automatic Control for publication.**; I am helping with precision control of AFM employing FPGA boards; **A new jounal paper is conducting about novel non-raster scanning approach in AFM.**

Project ***Cartesian Genetic Programming Based Optimal Fuzzy-controller for Unmanned Vehicles***

Description As a group project in my MSc study, the goal is to develop a program, which can automatic design optimal fuzzy-controllers for unmanned vehicles using genetic programming method. In this project, I designed the approach to tune the optimal controller and coded the genetic programming approach in Java.

Results The project was finished in Apr. 2014. The outcome was used to help controller design in Bristol Robotics Laboratory.

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Project ***Network Packet Capture and Analysis Software, Based on Network Detection and Machine Learning (National Undergraduates Innovation & Experimentation Project, No.101069838)***

Description This is a program which can capture network packets, classify packets, analyse data usage and display results with a graphic interface. In this project, I programmed the code using network detection techniques, multiple process programming, SQL data analysis and machine learning algorithms

Results The project was awarded the grade **"Excellent Project"** in the final assessment (only 13 from 64 national projects within Xi'an Jiaotong University) in Jun. 2012.

Internship

Xi'an Shaangu Power Co. Ltd and Xi'an Iron & Steel Factory of Longgang Group, China

2011.07 **Summer Intern**, *Performance B+ in this internship was included as the industrial field training module in my undergraduate degree.*

I worked in Lintong Headquarter of Xi.an Shaangu Power Co. Ltd in the morning and worked on a continuous rolling production line of Xi.an Iron and Steel Factory of Longgang Group in the afternoon: (a) Learned control design and electrical design; (b) Studied turbine machine design, and worked on Siemens s7-200 PLC for turbine production; (c) Learned the full continuous rolling production line security regulation, Electrical automation equipment, production line processing techniques

Shenhua Guohua Xilaifen Power Plant, China

2010.08 **Summer Intern**.

Thermal control operation and maintenance of equipment department.As a trainee, I learned firsthand knowledge of the thermal control operation and maintenance: (a) Learned the DCS control system (Shanghai Foxboro Co., Ltd) and live design; (b) Visited the steam power turbine; (c) Worked on practical production process design issues, checking the condensation control procedure of turbines, observing instruments and collecting data

Awards

2013.11 Awarded MSc with Distinction at the University of Bristol

2012.07 Excellent Award in National Undergraduates Innovation Projects (No. 101069838)

2011.10 "Excellent Coach" in the 4th Freshmen's Debating Contest of ChungYing College in Xi'an Jiaotong University

2011.05 Excellent Award in Case Analysis Competition of Xi'an Quater-University League Case Analysis Competition

2009.07 the chairman of Electronic and Information Engineering School Technology Association in Nanyang College

2009.04 the champion of "Fenghua Cup" Debate competition on behalf of Pengkang Academy in Xi'an Jiaotong University

Skills & Hobbies

Programming JAVA, C, C++, PYTHON, MATLAB, PROLOG, PROGO and LABVIEW for FPGA programming

Languages English(CET 6), Germain (basic)

Hobbies Reading, Research, Programming, Soccer, Cycling and Debating

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