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XUEYI ZOU

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EDUCATION

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|--|---|-----------------------|
| York, UK | University of York | Sept 2012 – Present |
| <ul style="list-style-type: none">• PhD student in Computer Science.• Dissertation Title: “<i>Validation Test of UAV Sense-and-Avoid Algorithms with Agent-Based Simulation and Evolutionary Search.</i>” | | |
| Beijing, China | Beijing University of Aeronautics and Astronautics | Sept 2010 – Sept 2012 |
| <ul style="list-style-type: none">• PhD candidate (drop out) in Software Engineering.• Research: Software-Intensive System Safety, Reliable Embedded Software Systems. | | |
| Beijing, China | Beijing University of Aeronautics and Astronautics | Sept 2006 – Sept 2010 |
| <ul style="list-style-type: none">• B.S.E. Major in Reliability and System Engineering. GPA: 3.71/4. Ranking: 1/54.• Dissertation Title: “<i>Testing Methods for FPGA Software.</i>” | | |

EXPERTISE AND RESEARCH INTERESTS

- Simultaneous Localization and Mapping (SLAM), Visual Odometry and Visual SLAM;
- Machine Learning and Deep Learning, Convolutional Neural Networks (CNN) for visual recognition;
- Robot Path and Motion Planning, Collision Avoidance, Planning and Decision Making under Uncertainty.

EMPLOYMENT/INTERNSHIP

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| Open Source Developer | Google Summer of Code | Summer 2014 |
| Project: PRISM Probabilistic Model Checker | | |
| <ul style="list-style-type: none">• Developed a PRISM extension for checking Partially Observable Markov Decision Process (POMDP) models.• Did Research on POMDP solvers and published a paper. | | |
| Teaching Assistant | University of York | Autumn term 2012 |
| Course: Machine Learning and Applications | | |
| <ul style="list-style-type: none">• Providing support to students with mathematics difficulties.• Providing support for course exercises and practices. | | |
| Software Design Engineer, part-time | Wiibox (a Startup) | Jul 2010 – Oct 2011 |
| <ul style="list-style-type: none">• Designed the interaction procedures for a close-friend life sharing product.• Helped to build the testing framework for the product and the company. | | |

TECHNICAL EXPERIENCE

Projects

- **Autonomous Car Accurate Localization in Urban Canyons** (ongoing). Combining ORB-SLAM and Convolutional Neural Network (i.e. PoseNet) for relocalization and loop detection to improve the accuracy of localization in GPS denied environments, such as urban canyons.
- **UAV Autonomous Navigation using Kinect** (2015-2016). Developed a RGB-D SLAM algorithm for UAVs to localize and to detect obstacles. ROS, OpenCV, PCL, C++
- **UAV Collision Avoidance Algorithm** (2014-2015). A library for Unmanned Aerial Vehicle (UAV) collision avoidance based on Markov Decision Process (MDP) and Dynamic Programming. C++
- **UAV Conflict Resolution Algorithm** (2014). A library for UAV conflict resolution based on the idea of Velocity Obstacles and using linear programming. Java

LANGUAGES AND TECHNOLOGIES

- Development capability under Windows and Linux (Ubuntu);
- Proficient in C++ and Java, competent with Python, Matlab;

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- Familiar with Cmake, Git/GitHub, QtCreator, Eclipse;
 - Experience with Robot Operating System (ROS), Gazebo, OpenCV, Point Cloud Library (PCL).

AWARDS

- 2016 ·IEEE DSN Travel Grant.
- 2012 ·Tuition Waiver Scholarship, University of York.
- 2012 ·Study Abroad Scholarship, China Scholarship Council (CSC).
- 2010 ·Outstanding Graduate, Beijing University of Aeronautics and Astronautics.
- 2007 ·China National Scholarship.

PUBLICATIONS

- A Testing Method for Multi-UAV Conflict Resolution using Agent-Based Simulation and Multi-Objective Search, *Xueyi Zou*, Rob Alexander and John McDermid, AIAA Journal of Aerospace Information Systems, April, 2016.
- Validating Unmanned Aerial Vehicle Sense and Avoid Algorithms with Evolutionary Search, *Xueyi Zou*, Student forum of the 46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), June, 2016.
- On the Validation of a UAV Collision Avoidance System Developed by Model Based Optimization: Challenges and a Tentative Partial Solution, *Xueyi Zou*, Rob Alexander and John McDermid, 2nd International Workshop on Safety and Security of Intelligent Vehicles, DSN workshop, June, 2016.
- Verification and Control of Partially Observable Probabilistic Real-Time Systems, Gethin Norman, David Parker and *Xueyi Zou*, 13th International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS 2015), September, 2015.
- Safety Validation of Sense and Avoid Algorithms Using Simulation and Evolutionary Search, *Xueyi Zou*, Rob Alexander and John McDermid, Proceedings of the 33rd International Conference on Computer Safety, Reliability and Security (SAFECOMP'14), September, 2014.
- The methods of FPGA software verification, Ding Zheng, Wang Yichen and *Zou Xueyi*, IEEE International Conference on Computer Science and Automation Engineering, June, 2011.

POSITION RELATED ONLINE COURSES I HAVE TAKEN

Robotics:

- Introduction to Mobile Robotics (by Prof. Wolfram Burgard, Uni-Freiburg)
- Artificial Intelligence for Robotics (by Prof. Sebastian Thrun, Stanford, Udacity)
- Visual Navigation for Flying Robots (by Dr. Jürgen Sturm, TU München, edx)
- Computational Motion Planning (by Prof. CJ Taylor , Uni-Penn, Coursera)

Computer Vision:

- Introduction to Computer Vision (by Prof. Aaron Bobick, GeorgiaTech, Udacity)
- Multiple View Geometry (by Prof. Dr. Daniel Cremers, TU München)
- Convolutional Neural Networks for Visual Recognition (by Prof. Feifei Li, Stanford)

Artificial Intelligence and Machine Learning:

- Artificial Intelligence (by Prof. Pieter Abbeel, Berkeley, edx)
- Machine Learning (by Prof. Andrew Ng, Stanford, Coursera)
- Unsupervised Feature Learning and Deep Learning (by Prof. Andrew Ng)

ADDITIONAL INFORMATION

- Homepage: <https://xueyizou.github.io/>
- Linkedin: <https://uk.linkedin.com/in/xueyizou>
- Github: <https://github.com/xueyizou>

REFERENCES

- Prof. John McDermid, OBE, FREng, Professor, University of York.
Department of Computer Science, University of York, Deramore Lane, York, YO10 5GH
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- Dr. Rob Alexander, Lecturer, University of York.
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