邹学益

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籍贯：湖南株洲　　生日：1988-07-21　　政治面貌：党员
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职业目标

自动驾驶视觉算法工程师，研究员

教育背景

- 博士（2012.09 – 2017.01）：约克大学(英国)，专业：计算机科学
- 直博（2010.09 – 2012.09）：北京航空航天大学(退学)，专业：软件工程
- 本科（2006.09 – 2010.07）：北京航空航天大学，专业：系统工程，年级排名：1/54

研究特长

- 视觉里程计(Visual Odometry)，视觉同步定位与建图(Visual SLAM)
- 深度学习，基于卷积神经网络(CNN)的图像识别
- 机器人路径与运动规划，防撞，不确定状态下的自主决策(MDP, POMDP)

工作及实习经历

谷歌代码之夏(Google Summer of Code)　开源软件开发员　2014.05-2014.09
项目：PRISM 概率模型检验器
- 为 PRISM 概率模型检验器开发了一个拓展，用于支持对部分可观测马尔科夫决策过程(POMDP)模型的模型检验
- 研究 POMDP 模型的解算法，并发表了一篇论文

约克大学　助教　2012.10-2013.02
课程：机器学习与应用
- 解决学生在数学方面的问题
- 课堂及习题课支持

微网(北京)　软件工程师(实习与兼职)　2010.07 –2011.10
- 为一个亲友间生活分享的产品设计交互流程
- 参与部分产品代码开发
- 参与建立产品的测试流程与框架

项目

- 城市无人驾驶的定位问题研究（进行中）：结合 ORB-SLAM 和深度神经网络，解决无人驾驶汽车在无 GPS 环境（如城市峡谷）中的精确定位问题。主要用到 ORB-SLAM 算法和卷积神经网络(CNN)
- 基于 Kinect 相机的无人机导航（2015-2016）：基于 RGB-D SLAM 的无人机定位与环境感知。编程语言为 C++。主要用到 ROS, OpenCV, PCL 等工具库

- 无人机防撞算法（2014-2015）：基于马尔科夫决策过程 (MDP) 模型和动态规划算法，开发了一个开源的无人机防撞算法。编程语言为 C++
- 无人机冲突排解算法（2014）：基于 Velocity Obstacles 和线性规划算法，开发了一个开源的用于排解多架无人机之间的冲突问题的算法。编程语言为 Java
- 某型飞机飞控软件安全性分析（2012.04–2012.08）：作为学生负责人，带队去成都顺利完成任务。主要用到故障树分析(FTA), 故障模式及影响分析(FMEA)等方法

软件开发能力

- 能在 Windows 或 Linux (Ubuntu)进行软件开发
- 熟练使用 C++, Java, 熟悉 Python 和 Matlab
- 熟练使用 Cmake, Git/GitHub, QtCreator, Eclipse 等开发工具
- 熟悉 Robot Operating System (ROS), Gazebo, OpenCV, Point Cloud Library (PCL), g2o, Caffe, Weka 等库和工具

获奖情况

- 2016 IEEE DSN 会议旅行资助(免参会费)
- 2012 约克大学学院奖学金(免博士期间学费)
- 2012 CSC 公派留学奖学金(提供博士期间生活费)
- 2010 北航三好学生，优秀毕业生
- 2008 杨为民奖学金一等奖
- 2007 国家奖学金

论文发表(均为英文论文)

- 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.

所学课程(均为英文课程)

计算机视觉:

- 计算机视觉导论(Introduction to Computer Vision)
- 多视几何(Multiple View Geometry)
- 基于卷积神经网络的图像识别(Convolutional Neural Networks for Visual Recognition)

人工智能与机器学习:

- 人工智能(Artificial Intelligence)
- 机器学习与应用(Machine Learning and Applications)
- 无监督特征学习与深度学习(Unsupervised Feature Learning and Deep Learning)

机器人:

- 移动机器人导论(Introduction to Mobile Robotics)
- 无人驾驶的人工智能(Artificial Intelligence for Robotics: Programming a Robotic Car)
- 无人机视觉导航(Visual Navigation for Flying Robots)
- 运动规划(Computational Motion Planning)

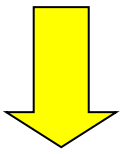
更多信息

个人网页: https://xueyizou.github.io/
Linkedin: https://uk.linkedin.com/in/xueyizou
Github: https://github.com/xueyizou

自我评价

- 海外计算机博士，国标视野;
- 对增强现实所需的同步定位与建图(SLAM)技术有深入研究;
- 有激情，有雄心，肯实干。

英文简历



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XUEYI ZOU

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EDUCATION

York, UK **University of York** Sept 2012 – Present

- PhD student in Computer Science.
- Dissertation Title: "*Validation Test of UAV Sense-and-Avoid Algorithms with Agent-Based Simulation and Evolutionary Search*."

Beijing, China **Beijing University of Aeronautics and Astronautics** Sept 2010 – Sept 2012

- 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

- B.S.E. Major in Reliability and System Engineering. GPA: 3.71/4. Ranking: 1/54.
- Dissertation Title: "*Testing Methods for FPGA Software*."

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

Open Source Developer **Google Summer of Code** Summer 2014

Project: PRISM Probabilistic Model Checker

- 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

- 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

- 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;
- Familiar with Cmake, Git/GitHub, QtCreator, Eclipse;
- Experience with OpenCV, g2o, Caffe, Robot Operating System (ROS), Gazebo, 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

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)

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)

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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