

CONTACT
INFORMATION

pxlonglong
+86 188 9856 3159

pxlong.github.io
pinxinlong@gmail.com

INTERESTS **Autonomous Driving, Robotics, Deep Learning and Reinforcement Learning**

EDUCATION **University of Electronic Science and Technology of China (UESTC)**, Chengdu, China
B.Eng., Automation **Sep. 2008 to June 2012**

EXPERIENCE **Dorabot Inc.**, Shenzhen, China

Robotics Engineer/Researcher **Sep. 2016 to Sep. 2017**

- Proposed a decentralized sensor-level collision avoidance policy for multi-robot systems, and optimized it with a multi-scenario multi-stage reinforcement learning framework [1].
- Deployed the policy on the real non-holonomic multi-robot systems.

Robotics Engineer Intern **Jan. 2016 to Mar. 2016**

- Developed a robotic system that is capable of both picking and placing general objects in warehouse scenarios [3].
- Performed a survey on multi-agent navigation (collision avoidance).

City University of Hong Kong, Hong Kong, China

Research Assistant **Mar. 2016 to Sep. 2016**

- **Supervisor:** Prof. Jia Pan
- Designed a novel end-to-end framework to generate reactive collision avoidance policy for fully distributed non-communicating multi-agent navigation [2].

Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Sciences (CAS), Shenzhen, China

Research Assistant, Visual Computing Research Center **Oct. 2012 to Nov. 2015**

- **Supervisors:** Prof. Hui Huang, Prof. Kevin Xu, and Prof. Baoquan Chen
- Employed a data-driven approach to modeling contextual information covering both intra-object part relations and inter-object layouts for scene understanding [4].
- Participated in the **Amazon Picking Challenge 2015** along with other teammates from Dorabot Inc and Hong Kong University. I mainly worked on several components of the challenge: creating the robot URDF file, motion planning, grasping, and the overall framework [3].
- Developed an autonomous scene scanning system with the PR2 robot and proposed an approach for object-level scene reconstruction coupled with object-centric scene analysis [5].
- Participated in presenting an intrusive acquisition solution for scanning and modelling of plants and foliage [6].
- Participated in designing a quality-driven, Poisson-guided autonomous object scanning method and implemented the proposed system on the PR2 robot [7].

University of Electronic Science and Technology of China, Chengdu, China

Undergraduate Researcher, Machine Intelligence Institute **Sep. 2010 to June 2012**

- **Supervisor:** Prof. Hong Cheng
- Developed an approach for recognizing the everyday indoor objects and measuring their real size with an RGB-D camera.
- Built an indoor mobile robot and performed map building, autonomous navigation and people following with the robot.
- Designed several quadruped robots from scratch and implemented discrete reaching movement and rhythmic movements (four different gaits) on them by using Central Pattern Generator-based locomotion control methods.

PUBLICATIONS	<p>[1] Pinxin Long*, Tingxiang Fan*, Xinyi Liao, Wenxi Liu, Hao Zhang, Jia Pan. Towards Optimally Decentralized Multi-Robot Collision Avoidance via Deep Reinforcement Learning. <i>Under review</i>, 2017.</p> <p>[2] Pinxin Long, Wenxi Liu, Jia Pan. Deep-Learned Collision Avoidance Policy for Distributed Multi-Agent Navigation. <i>IEEE Robotics and Automation Letters</i>, 2(2), 2017.</p> <p>[3] Hao Zhang, Pinxin Long, Dandan Zhou, Zhongfeng Qian, Zheng Wang, Weiwei Wan, Dinesh Manocha, Chonhyon Park, Tommy Hu, Chao Cao, Yibo Chen, Marco Chow, Jia Pan. DoraPicker: An Autonomous Picking System for General Objects. <i>IEEE International Conference on Automation Science and Engineering (CASE)</i>, 2016.</p> <p>[4] Yifei Shi, Pinxin Long, Kai Xu, Hui Huang, and Yueshan Xiong. Data-Driven Contextual Modeling for 3D Scene Understanding. <i>Computer & Graphics (C&G)</i>, 55: 55-67, 2016.</p> <p>[5] Kangxue Yin, Hui Huang, Pinxin Long, Alex Gaissinski, Minglun Gong, and Andrei Sharf. Full 3D Plant Reconstruction via Intrusive Acquisition. <i>Computer Graphics Forum (CGF)</i> Vol. 34(2), 2016.</p> <p>[6] Kai Xu, Hui Huang, Yifei Shi, Hao Li, Pinxin Long, Jianong Caichen, Wei Sun, and Baoquan Chen. Autoscanning for coupled scene reconstruction and proactive object analysis. <i>ACM Transactions on Graphics (TOG)</i> Vol. 34(6) (Special Issue of SIGGRAPH ASIA 2015), 2015.</p> <p>[7] Shihao Wu, Wei Sun, Pinxin Long, Hui Huang, Daniel Cohen-Or, Minglun Gong, Oliver Deussen, and Baoquan Chen. Quality-driven Poisson-guided Autoscanning. <i>ACM Transactions on Graphics (TOG)</i> Vol.33(6) (Special Issue of SIGGRAPH ASIA 2014), 2014.</p>
WORKSHOP PRESENTATIONS	<p>[8] Pinxin Long, Xinyi Liao, Wenxi Liu, Hao Zhang and Jia Pan. Deep-Learned Collision Avoidance Policy for Distributed Multi-Agent Navigation. <i>NIPS Workshop on Learning, Inference and Control of Multi-Agent Systems</i>, 2016.</p> <p>[9] Pinxin Long, Xinyi Liao, Hao Zhang, Wenxi Liu and Jia Pan. Exploring Deep Networks for Reactive and Distributed Collision Avoidance Control among Multiple Robots. <i>ICRA Workshop on Multi-robot Perception-Driven Control and Planning</i>, 2017.</p>
AWARDS & HONORS	<ul style="list-style-type: none"> • SIAT Innovation Program for Excellent Young Researchers 2015 • Outstanding Bachelor Thesis (Grade: 95/100), UESTC 2012 • As the sole representative of UESTC to participate in the 4th Chinese University Students' Creativity Forum. 2011 • The Top 1 Project of Creative Experimental Project of National Undergraduate Students in UESTC, 1 out of 197, Team Leader 2011 • Outstanding students in National Graduates Summer School on Intelligent Robotics 2010 • Several Scholarships in UESTC 2009 - 2011
SKILLS	<p>Programming Languages Python, C/C++, L^AT_EX, MATLAB</p> <p>Software/Libraries TensorFlow, PyTorch, Keras, MXNet, OpenAI Gym, ROS, PCL, OpenCV, MoveIt!</p> <p>Robot simulators Stage, Gazebo, V-REP</p> <p>Robots (I worked with) PR2 (Willow Garage), UR5 (Universal Robots), Turtlebot, Multiple Mobile Robots, Self-made Quadruped Robots</p>