

Personal Information

PhD, MEng, BEng
Date of Birth: 12/09/1985
School of Mobile Information Engineering
Sun Yat-Sen University
Tang Jia Wan, Zhuhai City, 519082, P.R. China
Tel: (+86) 18627079985
Email: chenl46@mail.sysu.edu.cn



Research Interests

Autonomous Vehicle Perception System, Computer vision and Machine Learning, Point Clouds Processing, Stereo Vision and Driver behavior Analysis.

Educational Qualifications

co-trained PhD in Electrical & Computer Engineering, September 2012 – November 2013
NUS Graduate School for Integrative Sciences & Engineering (NGS), National University of Singapore, Singapore

PhD in Signal & Information System, September 2009 – June 2013
School of Electronic Information, Wuhan University, China

MEng, BEng in Communication Engineering, September 2003 – July 2009
School of Electronic Information, Wuhan University, China

Honours and Awards

National Scholarship, China, 2012

Second place in the China Future Challenge, National Natural Science Foundation of China, 2010

Recommendation Ph.D, Wuhan University, 2009

Recommendation M.S, Wuhan University, 2007

First-class Outstanding Student Scholarship(5%), Wuhan University, 2003- 2007

Selected Publications

Journal papers:

1. Yanan Li, **Chen Long***, Tong Heng Lee and Qingquan Li “Reinforcement Learning Control for Coordinated Manipulation of Multi-Robots,” *Neurocomputing*, accepted, 2014.
2. Qingquan Li, **Chen Long***, Shih-Lung Shaw, and Andreas Nchter, “A Sensor-Fusion Drivable-Region and Lane Detection System for Autonomous Vehicle Navigation in Challenging Road Scenarios,” *IEEE Transactions on Vehicular Technology*, Vol.63, No.2, pp: 540-555. 2014.
3. Qingquan Li, **Chen Long***, Quanwen Zhu, Qun Zhang and Shuzhi Sam Ge. “Intersection Detection and Recognition for Autonomous Urban Driving using Virtual Cylindrical Scanner,” *IET Intelligent Transportation System*, pp 1-11, doi: 10.1049/iet-its.2012.0202. 2013
4. **Long Chen**, Qingquan Li *, Ming Li , Liang Zhang and Qingzhou Mao. “Design of A Multi-Sensor Cooperation Travel Environment Perception System for Autonomous Vehicle,” *Sensors*. no.9: 12386-12404. 2012
5. Xuemin Hu, Hong Zheng, Yuzhang Chen and **Chen Long***, “Dense Crowd Counting Based on Perspective Weight Model Using a Fisheye Camera, *Intl.Journal for Light and Electron Optics (OPTIK)*, 2014.

Conference papers:

1. Yuechao Xie, Siyu Zeng, and **Long Chen***. "A Novel Disparity Refinement Method Based on Semi-Global Matching Algorithm," IEEE International Conference on Data Mining Workshop (ICDMW), 2014.
2. Quanwen Zhu, Qingzhou Mao, **Long Chen*** and Qingquan Li, "VeloRegistration based intersection detection for autonomous driving in challenging urban scenarios. 2012. Intelligent Transportation Systems (ITSC), 2012 15th International IEEE Conference on. Hilton, Anchorage, AK, USA, 1191-1196. 2012 (oral)
3. Quanwen Zhu, **Long Chen***, Ming Li, Nuchter Andreas, "3D LIDAR point cloud based intersection recognition for autonomous driving," In Intelligent Vehicles Symposium (IV), 2012 IEEE. Alcal de Henares, Spain, 456-461. 2012
4. **Long Chen***, Qingquan Li, Ming Li and Qingzhuo Mao, "Traffic sign detection and recognition for intelligent vehicle," In Intelligent Vehicles Symposium (IV), 2011 IEEE. BADENBADEN, Germany, 908C913. 2011
5. **Long Chen***, Qingquan Li and Qingzhou Mao, "Block-constraint line scanning method for lane detection,". In Intelligent Vehicles Symposium (IV), 2010 IEEE. San Diego, CA, 89C94.2010
6. Qingquan Li, **Long Chen**, Qingzhou Mao and Bijun Li, "Video-based approach for railway bridge surface crack detection," 6th International Symposium on Mobile Mapping Technology, Presidente Prudente. Sao Paulo, Brazil, July 21-24, 2010. (oral)

Professional Experience

Peer Reviewer, IEEE Transactions on Vehicular Technology, IET Intelligent Transportation System, ICRA, IROS, IV, ITSC etc.

Teaching Assistance

Signals & Systems, SYSU, 2013, 2014

Electronic circuit and foundation, SYSU, 2014

Student Supervision

SYSU Master Students (2) SYSU Undergraduate Research Project (URP)(6)

Working Experience

Assistant Professor, School of Mobile Information Engineering, Sun Yat-Sen University, from September 2013

Programming Skills

C/C++, Matlab, Linux OS, ROS (Robot Operating System), Player/Stage/Gazebo, USARSim, Microsoft Robotics Studio, etc.

Projects Involved

1. **A Dynamic factor graph model for urban road scene understanding, National Natural Science Foundation of China (NSFC No.41401525), 2014-2017. PI**
Road scene understanding is one of the essential techniques in mobile mapping system, autonomous driving system and vehicle navigation system. How to fuse the abundant perception results of road scene elements to realize the inference of road geometric and topological information and analysis of moving objects state properties on the road still lacks a good solution. Based on the probabilistic graphical model, the project focuses on the key scientific problem how to construct a dynamic factor graph model which can fuse information with different forms and structures for traffic road scene understanding. Following the process of modeling-learning-optimizing-inference, the main research contents include: dynamic factor graph modeling for road scene understanding; semi-supervised learning based factor graph model structure learning and parameter learning; factor graph Incremental updating method giving consideration to the precision and efficiency; the inference method of road scene pa-

rameters. The results of these researches will contribute to the improvement of road scene understanding methods, information fusion theory, autonomous driving and mobile mapping system.

2. **Environmental emergency monitoring system based on Unmanned Aircraft Vehicle, Fundamental Research Funds for the Central Universities, 2013-2015. PI**
3. **Development of Handheld Panoramic Image Acquisition Device, The China institute of water resources and hydropower research, 2013-2016. PI**
4. **Unmanned Aircraft Vehicle Platform for chemistry park, Open Research Fund Program of Shenzhen Key Laboratory of Spatial Smart Sensing and Services Shenzhen University , 2013-2015. PI**