Liangqu Long

Personal Data

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Education

Sep. 2017 Research Assistant in Computer Vision,
School of Computing, **National University of Singapore**, Singapore

Oct. 2016 Ph.D. Candidate in Computer Vision, quitted in Jan. 2017
School of Computer Science, **Zhejiang University**(Top3), China
GPA: NA | Advisor: Kun Zhou (IEEE Fellow)

July 2015 Postgraduate in Control Science and Engineering
Central South University(211/985), China
GPA: 90.06/100, Ranking: 1/61 | Advisor: Weihua Gui(Academician, CAE)

July 2012 Undergraduate in Automation
Central South University(211/985), China
GPA: 89.52/100, Ranking: 2/35 | Advisor: Weihua Gui(Academician, CAE)

Scholarships and Certificates

Aug. 2017 **Silver Medal, Top 4%** over 2623 teams, Instacart Market Basket Analysis, Kaggle
2008- 2012 **Excellent Student**^{x3}, **Excellent Graduate**, **First Prize Scholarship**, **Second Prize Scholarship**^{x2}
Nov. 2010 **Enterprise Scholarship**, from Sail-Group Inc.
July 2010 **National Champion**, Rescue Simulation in RoboCup China Open
July 2010 **National First Prize**, Rescue Simulation in RoboCup China Open
July 2010 **National Second Prize**, Home Service Robot in RoboCup China Open
Dec. 2010 **Provincial First Prize**, Freescale Smart Car Contest, Camera group
Nov. 2011 **Provincial Third Prize**, National Undergraduate Electronic Design Contest

Selected Publications

- Nenggan Zheng, Jun Wen, Risheng Liu, **Liangqu Long** et al. Unsupervised Representation Learning with Long-Term Dynamics for Skeleton Based Action Recognition, AAAI 2018 (accepted) (Conference Paper)
- Degang Xu, **Liangqu Long** et al. A large-scale PLC backboard bus system based on PCI-Express: China, 2015100822212[P]. 2015-02-15. (Invention Patent)
- Degang Xu, Yufeng Liu, **Liangqu Long** et al. A large-scale PLC system based on Xilinx zynq: China, 2015105042359[P]. 2015-08-17. (Invention Patent)
- Wenjun Zhou, Yonggang Li, Degang Xu, **Liangqu Long**. Design and implementation of PCI-Express based on Xilinx zynq[A]. Proceeding of 26th China Process Control Conference[C]. 2015 (Conference Paper)

Innovation and Entrepreneurship

- **Excellent Project, Excellent Paper Prize, My Favorite Show Project** Leader of "Multi-Agent Formation Control Algorithm based on Potential Function and Reinforcement

Learning", 2014, Undergraduate Training Programs for Innovation and Entrepreneurship, Central South University.

- **HICOPTER.com** Founder of Myth Studio, which aims to design a rapid-response and high-stableness quadcopter platform and implement intelligent algorithms such as human tracking flying and gesture recognition. Hardware system was based on Xilinx zynq-7000 SOC and implemented via 10-layers PCB. Software Development was interrupted as the coming of graduation.

Selected Projects

July 2015 - Oct. 2015 | *Face Recognition Algorithm Analysis*

Internship as Machine Learning engineer. I analyzed SenseTime SDK performance under different aspects of environment. To construct an individual dataset, I sampled 80 workmates from my company and labeled each image with various dimensions such as face angle, light, eye, glass, to name a few. Rank-n, distractor-n and ROC were used to evaluate algorithm performance.

Sep. 2012 - Nov. 2014 | *Research on key technology of large-scale PLC*

Students Leader of subproject of 863 plan. The heterogeneous system architecture was based on Xilinx zynq, which includes an ARM dual-core cpu and a high capacity FPGA onboard. We succeed to port and run RTOS on ARM and implemented a PCI express IP on FPGA alongside. Meanwhile, we designed a new I/O module with PCI express interface. Corresponding peripheral drivers and applications to test the system bandwidth and RTOS benchmarks were finished successfully. We achieved peek bandwidth of 12.67Gib/s during actual experiment.

Sep. 2009 - Jun. 2010 | *Home Service Robot in RoboCup China Open*

Read initial environment status and analyse tasks given by nature language, then generate corresponding action sequences. I was responsible for system framework which occupies almost 80% of whole system code amount. First to read initial environment information and build a memory model for them. We implemented a naive but effective natural language processing system and it turned out practical when dealing with simple sentences. Once an action sequence generated, the corresponding environment status need to be updated and system re-iterates until all tasks are completed. At last we struggled to accomplish the platform and received a satisfying prize.

Jun. 2010 - May. 2011 | *Freescale Smart Car Contest, Camera Group*

We have tested different hardware architectures (51, HCS12, DSP) and control algorithms (PID, Fuzzy Control) in preparatory phase, to take advantage of limited resource on smart car. Considering of calculation overload of float image data , we chose the architecture of dsp, namely 56800E cpu, to minimize image process time. We have made lots of work to improve the system response and control accuracy. To reduce camera sampling time, I re-wrote all of the image sampling part using assemble language and it turned out a significant improvement. Besides, we selected a light-sensitive camera to improve sensor capability in dark environment. We spent plenty of time to adjust PID algorithm parameters and final peek speed we achieved in laboratory was up to 4.2m/s.