HAORAN LI

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Education

Zhejiang University (ZJU)

Sept. 2014 - Present

- **B.Eng. in Automation** (expected in *July 2018*) *Hangzhou, China*
- Rank: **15/117**; Overall GPA: **3.85/4.0 (87.1/100)**; Major GPA: **3.94/4.0 (88.6/100)**
- **Related Courses:** *Object Oriented Programming(C++), Python Programming, Data Structure, Machine Vision, Numerical Method, Database Systems, Robots Technology, Probability and Mathematical Statistics, Discrete Mathematics, Principles of Automatic Control, Microprocessors & Interface, Computing Theory, Computer Networks*
- **Honors:** Meritorious Winner in Interdisciplinary Contest in Modeling (ICM), Research and Innovation Scholarship, ZJU Outstanding Student, SupCon Scholarship(2%), ZJU Academic Scholarship

Research Experience

• **Intelligent Vision and Automation Lab** Gatech Advisor: *Prof.* Patricio Vela *Aug. 2017 - Sept. 2017*

– Worked on the **Robotic Arm Teleoperation Interfaces** project, to reduce the workload in operating robotic arm
– Incorporated scene information around the interest point selected by user into grasp specification algorithm
– Replaced the antipodal gripper pose classifier in AGILE algorithm with a heuristic-based approach, to find series of reliable grasp options ordered from best to worst for users to choose from
– Achieved arm's accurate control only requiring users to choose an interest point on target object upon user interface

• **Computer Vision and Pattern Recognition Lab** ZJU Advisor: *Prof.* Wei Jiang *May 2016 - Dec. 2016*

– Worked on the **Super-resolution Image Reconstruction** project, to increase the resolution of primitive images
– Proposed an adaptive POCS algorithm that preprocesses the original figures by interpolating pixel on the premise of retaining boundary information to decrease the noise, which obviously increased the quality of generated image
– Implemented several deep-learning-based methods (such as SRCNN and VDSR) in Caffe and achieved the SR goal
– Developed a MATLAB-based system to achieve the process of Super-Resolution reconstruction

Internship Experience

• **Hikvision Research Lab** Hikvision Advisor: Jietian Guo *Feb. 2018 - July 2018*

– Worked on **Pedestrian Behavior Analysis** project, with aim to detect pedestrian's unusual behaviors such as fighting
– Due to the lack of the real-world data, we synthesized the dense pixel-level labeled data through the game GTA5
– Implemented 3D CNN to achieve pose estimation, and we plan to try Non-local Neural Networks in the future

• **ZJUNlict Robot Soccer Team** ZJU Advisor: *Prof.* Rong Xiong *Sept. 2016 - Dec. 2016*

– Worked on small scale wheeled mobile robot, accelerated recognition speed to increase its competitiveness in RoboCup
– Programmed a main controller to let six robots compete against another team virtually by simulation
– Designed part of the attack and defense strategies, to provide several plans for robots to choose from during competition

Project Experience

• **Database Management System(MiniSQL)** ZJU Advisor: *Prof.* Jianling Sun *April 2017 - May 2017*

– Developed a DBMS allowing users to manage their own databases using SQL statements through character interface
– Used LRU strategy in Buffer Manager and applied B+ tree structure in Index Manager, achieved slotted page structure in Record Manager and programmed API to integrate the whole project

• **Market Shopping Robot** *Sept. 2015 - May 2016*

– Led a group to design a shopping robot, which can recognize and carry certain object from inventory to specified spot
– Implemented MSCR algorithm in detecting cubes as well as SURF algorithm in collecting features of different objects
– Used cascade control system in robots motion to improve overall accuracy

• **C++ RPG Game with 3500 Lines of Code** *June 2016*

– Developed a role-playing game which had career, skill, weapon, equipment, mission, map, battle systems
– Used Unity game engine and provided players with interactions in 2D

Skills and Others

Programming C/C++, MATLAB, Python, ROS, SQL, Lua, LaTeX
Language TOEFL: 102; Sections: 29(R), 25(L), 22(S), 26(W) GRE: 153(V), 170(Q), 3.5(AW)