Shan, Huang

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EDUCATION

University of California, San Diego   Sept.2018 - Dec.2019
Master of Electrical and Computer Engineering (Intelligent Systems, Robotics and Control)

The Hong Kong University of Science and Technology   Sept.2014 - Jun.2018
Bachelor's Degree of Computer Engineering (Software Engineering), Minor in Robotics
Honors: Dean's List, Scholarship for Continuing Undergraduate Students, Zhiyuan Scholarship-China Soong Ching Ling Foundation

PERSONAL STRENGTH

PROGRAMMING: **LANGUAGE:**C/C++, Python, Java, R, MATLAB **DATABASE:**SQL **FRAMEWORK:**ROS, PyTorch, TensorFlow
SOFTWARE: SolidWorks, Keil, Capture, Photoshop, Microsoft Office
SELECTED COURSES: OOP, Algorithm, Control Theory, Machine Learning, Image Processing, Computer Vision, Parameter Estimation

WORK EXPERIENCE

QUALCOMM TECHNOLOGIES, INC.   Apr.2020 -
RF Software Application Engineer
- Work as a customer engineer to support customers device modem bring-up.
- Support root cause analysis on customer problem and debug underlying issue, specifically in RF 5G Sub-6 area.
- Coordinate with multiple teams develop products to meet customer's requirements.
- Publish (e.g. writing, reviewing, and editing) product technical documentation.

RESEARCH EXPERIENCE

AUTONOMOUS DRIVING VEHICLE PLATFORM – TRITON TOWN
Summer Research Internship Project, supervised by Prof. Jack Silberman
In ECE Department at UCSD   Apr.2019 - Sep.2019
Abstract: Built integrated autonomous driving platform for education and research purposes.
- Designed vehicle suitable for the platform based on real RC car models.
- Built indoor positioning system using camera and apriltags to localize target vehicles, reduced the overhead of traditional methods of environment perception and estimation.
- Finished control framework based on ROS for users to remotely test individual autonomous driving algorithm.

SIMUTANEOUS LOCALIZATION AND MAPPING
Graduate Course Project, supervised by Prof. Nikolay Atanasov
In ECE Department at UCSD   Mar.2019 - May.2019
Abstract: Implemented SLAM and texture mapping using 4 sensor measurements from a differential-drive robot.
- Used IMU, odometry and laser measurements to localize the robot and build a 2-D occupancy grid map.
- Textured the floor of 2-D map using RGBD measurements.
- Performed localization based on particle filter algorithm, increase the mapping accuracy over 20 datasets.

IMAGE SEGMENTATION BASED ON BAYESIAN ESTIMATION
Gradeuate Course Project, supervised by Prof. Nuno Vasconcelos
In ECE Department at UCSD   Oct.2018 - Dec.2018
Abstract: Solved a pattern recognition problem to segment a "cheetah" image in statistical ways.
- Modeled the observation space with single, multi-variate and mixed gaussian distribution.
- Performed parameter estimation using 3 Bayesian estimator: MLE, MAP and EM.
- Classified the image pixels based on Bayesian decision rule and analyzed the tradeoff between model complexity and classification accuracy.

REAL-TIME RECOMMENDATION SYSTEM FOR MOBILE AUGMENTED REALITY ECOSYSTEMS
Undergraduate Research Project, supervised by Prof. Pan Hui
In SyMLab at HKUST   Feb.2017 - Aug.2017
Abstract: Attended the ReadMe project, an Android based augment reality application providing real-time suggestions according to various information of the user, helped construct its framework.
- Designed and developed the system user interface with JAVA.
- Proposed and implemented augmented reality algorithm based on user information, such as GPS and direction.
- Combined built-in sensors of smart phone with camera to provide visual aids for users.

QUADCOPTER WITH LASER RADAR
Undergraduate Research Project, supervised by Prof. Kam Tim WOO
In Robotics Institute at HKUST   Feb.2017 - Jun.2017
Abstract: Developed a quadcopter based on STM32F4 MCU with 2D mapping function using RPLIDAR.
- Used ultrasound to gather height information and added constant height mode, enabled the quadcopter of hover accurately.
- Completed ground station design based on Android application to interact with quadcopter via Bluetooth.
- Added a laser radar to generate a 2D map of surroundings of quadcopter, which can be visualized on the ground station remotely.