|  |
| --- |
| **Department of Computer Science and Engineering** |
| |  |  | | --- | --- | | **2018-2019 Spring Semester** | | | **Advanced Computer Science Experiment** | | | **Project Declaration Form** | | | List of team students | 11610733 童年  11610728 黄珂邈 | | Project Title | Deep Learning Based LiDAR Camera Real Time Fusion for Practical Multi-Sensor Systems | | Supervisor Name | 郝祁 | | Abstract :  Deep learning is gaining more and more popularity among object detection approaches in autonomous system. This project aims to realize object detection and collision avoidance by fusing LiDAR range images and camera RGB images for practical autonomous systems with multiple sensors. We propose an optimized mathematic model for the calibration of LiDAR and cameras. As for the information fusion, comparison between classic image processing based depth image completion and self-supervised neural network based image fusion are proposed. The two different methods are complement for each other for real time object detection. Finally, the depth map is converted into binary map with certain constraints for simple motion planning and realize collision avoidance. | |   **Team students:**  (Signature) |
| **Supervisor :**  (Signature) |