A Moving Target Detection and Localization Strategy Based on Optical Flow and Pin-hole Imaging Methods Using Monocular Vision

Shun Wang¹, Qingqiang Guo¹, Sheng Xu^{2,3} and Dan Su^{2,4}

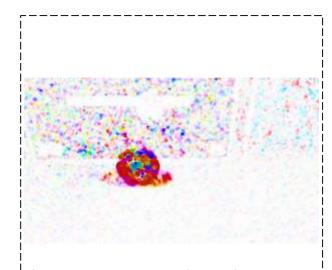
¹School of Control Science and Engineering, Shandong University, Jinan, Shandong, China

²Guangdong Provincial Key Lab of Robotics and Intelligent System, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences and CAS Key Laboratory of Human-Machine Intelligence-Synergy Systems, Shenzhen Institute of Advanced Technology, Shenzhen, China

³Shandong Institute of Advanced Technology, Chinese Academy of Sciences, Jinan, Shandong, China

⁴Orbbec Inc., Shenzhen, China

- This paper is concerned with moving target detection and localization based on monocular vision.
- The modified Lucas-Kanade optical flow method is applied to calculate optical flow.
- The two-level image segmentation strategy from coarse to fine is also designed.
- A low computational cost targe localization algorithm is developed based on pin-hole imaging theory.



Calculation results of modified Lucas-Kanade method