**Computer Vision HW4 Report**

Student ID: R11921041

Name: 蔣沅均

**Visualize the disparity map of 4 testing images.**

|  |  |
| --- | --- |
| Tsukuba | Venus |
|  |  |
| Teddy | Cones |
|  |  |

**Report the bad pixel ratio of 2 testing images with given ground truth (Tsukuba/Teddy).**

|  |  |
| --- | --- |
|  | bad pixel ratio |
| Tsukuba | 5.03% |
| Teddy | 9.15% |

**Describe your algorithm in terms of 4-step pipeline.**

1. **Cost Computation  
   先算出灰階圖的8-bit local binary pattern，再利用xor計算cost**
2. **Cost Aggregation**

**利用jointBilateralFilter以灰階圖為guidance，來將cost map過濾**

1. **Disparity Optimization**

**基於cost，利用Winner-take-all策略(取最小值)來得到disparity map**

1. **Disparity Optimization**

* **Left-right consistency check - 將左右不match的部分標記為hole**
* **Hole filling - 將上一步被標記為hole的部分以左邊最近的值或右邊最近的值，看哪個小來填上**
* **Weighted median filtering - 套用weightedMedianFilter進行最後的濾波**