Distribution of Local Feature Descriptor and Parallel Estimation of Homography for Object Matching with Dozens of Repeated Patterns

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Research background
Object matching with repeated patterns

Proposed method

Problem
Sequential matching + Repeated patterns
- Low matching rate
- Halt once failed

Target
Parallel matching + Repeated patterns
- Distribution based descriptor matching
- Parallel estimation of Homography

Experimental result

Conclusions
Proposal
- Distribution based local feature descriptor matching
  - Matching range

Result
- Average matching rate: 99% for 2D and 87% for 3D.
- Average time consuming: Fluctuates within 8%.
- Compared with conventional method: 44% improvement.
- Matching rate: keep for 2D and fall a little for 3D.