

***Abstract: Left-Right Consistent Depth Map Estimation
using Bipartite Graph Matching***

Min-Gyu Park and Kuk-Jin Yoon*
*Department of Information and Communications,
Gwangju Institute of Science and Technology, Gwangju, Korea
{mpark, kjyoon}@gist.ac.kr*

Abstract

We propose a stereo matching algorithm that estimates reliable disparity maps satisfying left-right consistency (LRC). Initially, we select reliable matching candidates for each scanline while allowing overlapping but consistent relationships between pixels. Afterwards, we formulate a bipartite graph matching problem that finds a maximum number reliable matching while reducing the sum of overall aggregation costs. Then, we introduce a new step to reduce vertical inconsistency of scanline-based algorithms. The proposed algorithm has been experimentally verified by comparing the algorithm to the conventional LRC approach and to other scanline-based algorithms.

Acknowledgement

This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (No. 2009-0065038).