Abstract

Yasser El Sonbaty

VHDL-Based Simulation of a Parallel Implementation of a Phase-Based Algorithm for Optical Flow

The computation of optical flow can be an important part in a diverse number of applications. However, optical flow algorithms can be categorized as either very accurate/very fast/highly inaccurate. None of the optical flow algorithms combined both accuracy/efficiency. Among these algorithms was the phase-based FleetJepson algorithm. Although this algorithm has proved to produce relatively accurate results, it cannot be exploited in many real-life applications due to its relatively long run-time. The goal of this paper is to combine the accuracy of the phase-based optical flow algorithm by FleetJepsonexploit the parallelism/high performance capabilities of the FPGAs to provide an accurate/efficient optical flow algorithm for FPGA-based applications.