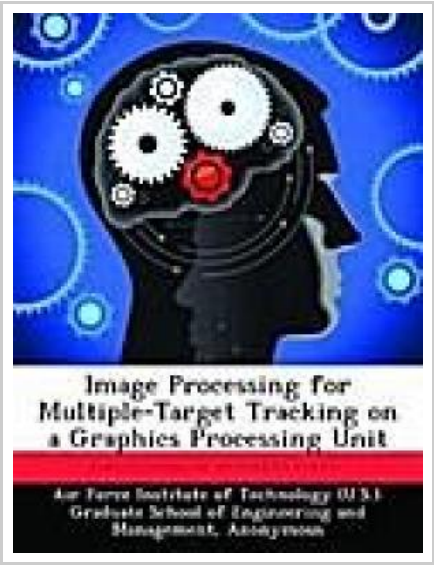

Image Processing for Multiple-Target Tracking on a Graphics Processing Unit

By Air Force Institute of Technology (U. S.). Graduate School of Engineering and Management

Biblioscholar Sep 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x5 mm. This item is printed on demand - Print on Demand Neuware - Multiple-target tracking (MTT) systems have been implemented on many di erent platforms, however these solutions are often expensive and have long development times. Such MTT implementations require custom hardware yet o er very little flexibility with ever changing data sets and target tracking requirements. This research explores how to supplement and enhance MTT performance with an existing graphics processing unit (GPU) on a general computing platform. Typical computers are already equipped with powerful GPUs to support various games and multimedia applications. However, such GPUs are not currently being used in desktop MTT applications. Bottleneck MTT image processing functions (frame di erencing) were converted to execute on the GPU. On average, the GPU code executed 287% faster than the MATLAB implementation. Some individual functions actually executed 20 times faster than the baseline. These results indicate that the GPU is a viable source to signi cantly increase the performance of MTT with a low-cost hardware solution. 82 pp. Englisch.

Reviews

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