



ISTITUTO ITALIANO
DI TECNOLOGIA

TITLE

Parallel RANSAC

INVENTORS

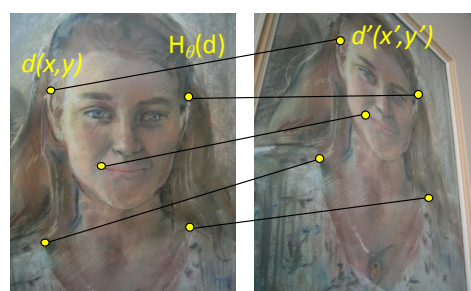
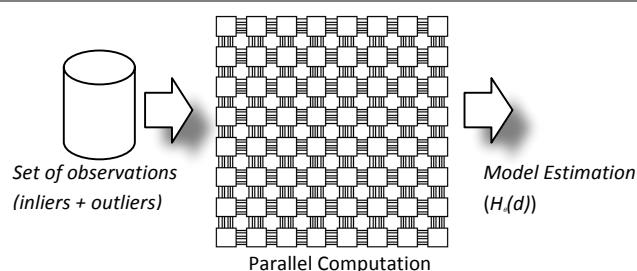
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DESCRIPTION

The invention concerns a method for estimating a model on multi-core and many-core MIMD (Multiple Instruction, Multiple Data) architectures including processors and a global memory using RANSAC (RANDOM Sample Consensus) algorithm, particularly in connection with image processing applications for homography model estimation.

The invention presents a novel variant of the RANSAC by incorporating the concept of backtracking strategy and also its variant as a Cooperative Search Algorithm with excellent features for highly parallel implementation. The parallel implementation results in an asynchronous algorithm with a very limited communication requirement.

For certain cases, the invented Cooperative Search Algorithm achieves super-linear speedup, i.e. an algorithm speedup greater than the number of cores involved in computation.



Homography estimation

APPLICATIONS

Any field of applications where a mathematical model has to be estimated by a robust estimator starting from noised observations.

KEYWORDS

RANSAC, Back tracking, Cooperative search algorithm, computer vision.

BIBLIOGRAPHIC DATA

Metodo per stimare un modello su architetture MIMD multi-core e many-core

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Applicants

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