

Scuola di Dottorato in ICT

Doctoral School in ICT

Research project for a PhD curriculum in ICT – Curriculum: **Computer Engineering and Science**

Tutor: COSTANTINO GRANA

Proposed Title of the research:
Optimization of Binary Image Processing Algorithms

Keywords: (3)

Image processing, Optimization, Performance

Research objectives: (max 10 rows)

Part of the responsibility for the huge progress in both computer vision and image processing of the recent years may be credited to the broad access to public image and video datasets. This may be referred to as reproducible research, i.e. an approach at presenting scientific claims together with all information needed to reproduce the presented results, so that others may verify the findings and build upon them. Many problems in image processing require optimization in order to provide acceptable performance under heavily constrained settings.

The specific objectives of this research will focus on models and solutions for optimization of binary image processing algorithms, together with the development and analysis of benchmarks to objectively evaluate their performance.

Proposed research activity --(max 10 rows)

This research project encompasses design, modelling, simulation and experimental activities. Different approaches will be considered, but the focus will be on decision tables, decision trees and decision graphs. Besides research activities, the PhD student will attend classes on image and video processing, software optimization, and summer courses. Periods of activities in foreign labs are also possible.

Supporting research projects (and Department)

None.

Possible connections with research groups, companies, universities

Research connections will be sought with French and Japanese research groups working on the same topics.