Comparative study of methods of Principal Component Analysis of automatic segmentation of functional magnetic resonance imaging (fMRI).

1. Motivation

Processing huge volumes of data has become a common problem

1. Objectives

The aim of this work was to implement PCA algorithm on CUDA (Compute Unified Device Architecture) platform in order to obtain the better performance (speedup) regarding to matlab version of the algorithm. The study includes the comparison of the execution time of the methods implemented in Matlab and CUDA. These methods were tested for real problems (on data sets obtaining from fMRI scanning).

1. Explanation of CUDA and Matlab