The comparison of many and multi-core implementations of PCA algorithms used for text analysis on a GPU

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PCA algorithm for efficient text analysis

- dimensionality reduction

- optimization for further steps and algorithms of

  text analysis process

- approximation and compression of

  text document representation

Implementation of parallel PCA algorithms

NIPALS:

- based on iterative non-linear regression

- each iteration computes single principal component (sequential iterations)

- single iteration finds single principal component by computing power method

- parallelization of linear algebra operations

QUIC-SVD:

- matrix reduction based on buidling cosine trees

- reduction with given approximation error

- SVD computing on a reduced matrix