ASSORTED ALGORITHMS AMENABLE TO GPU COMPUTING: BACKGROUND FOR THE R PACKAGE, gputools

Linear algebraic algorithms are particularly amenable to GPU computing because they involve a high volume of simple arithmetic.

I will review:

1. the QR decomposition

2. the singular value decomposition

3. the Cholesky decomposition

4. Finding the generalized inverse of a matrix

I will also cover the following algorithms found in the **gputools** R package:

1. Hierarchical Clustering for Vectors

2. FastICA algorithm of Aapo Hyvarinen et al.

3. Granger Causality Tests for Vectors