Examples of project topics

NLA, Skoltech, Fall 2018

Last year

https://github.com/oseledets/nla2017/blob/master/table_of_projects.ipynb

- Keywords extraction from news - use matrix factorization for extract the most important words
- Deep Compression - compress some layers in DNN
- Low-rank approximations for large incomplete matrices - optimization related topic where rank constraints are used
- Spooky Author Identification - one more SVD application

ICLR 2019 submissions

- https://openreview.net/group?id=ICLR.cc/2019/Conference
- Enter in the search field any term related to the course, e.g. eigenvector or SVD
- Select paper that you want to reproduce
- The selected paper must actively use methods and techniques from the course topics

  Example: The Singular Values of Convolutional Layers
  https://openreview.net/pdf?id=rJevYoA9Fm

Other examples

- Rethinking floating point for deep learning
  https://github.com/facebookresearch/deepfloat
- Matrix Completion and Low-Rank SVD via Fast Alternating Least Squares
  http://jmlr.org/papers/volume16/hastie15a/hastie15a.pdf
- Graph related applications like spectral clustering,
- Embedding of structure data in linear space, e.g. W2V problem from PS2