

**Please do the following:**

1. Choose a paper from the paper list below.
2. Send the following information to nakajima@tu-berlin.de (**by 4.6.2018**).
  - Full name
  - Matr. No.
  - Email address
  - The paper title of your choice

I'll assign an adviser to each student and let you know her/his email address (**by 8.6.2018**).

3. Contact your adviser for a meeting asap (some advisers could take a long vacation).
4. Prepare slides for your talk (ca 15-20min) in the block-seminar **on 20.7.2018**.
5. Attend the block-seminar, give your talk, discuss on other's talks!

Below is the list of papers:

## 1 Hashing

- M. Datar, N. Immorlica, P. Indyk, V.S. Mirrokni, "Locality-sensitive hashing scheme based on p-stable distributions," In SCG, pages 253–262, 2004.
- Prateek Jain, Sudheendra Vijayanarasimhan, Kristen Grauman, "Hashing Hyperplane Queries to Near Points with Applications to Large-Scale Active Learning."
- P. Li, M. Mitzenmacher, A. Shrivastava, "Coding for Random Projections."

## 2 Data Structure

- A. Beygelzimer, S. Kakade, J. Langford, "Cover trees for nearest neighbor," ICML 2006.
- O. Sener, S. Savarese "Active Learning for Convolutional Neural Networks: A Core-set Approach," Proc. of ICLR, <http://openreview.net/forum?id=H1aIuk-RW>, 2018.

## 3 Parallel computing

- T. D. Kim and S. Choi, "Scalable Variational Bayesian Matrix Factorization with Side Information," AISTATS 2016.

## 4 Cluster Computing Framework

- P. Carbone, S. Even, S. Haridi, "Apache Flink: Unified stream and batch processing in a single engine."
- Ghoting, A., Krishnamurthy, R., Pednault, E., Reinwald, B., Sindhvani, V., Tatikonda, S., ... and Vaithyanathan, S., "SystemML: Declarative machine learning on MapReduce," In 2011 IEEE 27th International Conference on Data Engineering (pp. 231-242).
- Chen, T., Li, M., Li, Y., Lin, M., Wang, N., Wang, M., ... and Zhang, Z., "Mxnet: A flexible and efficient machine learning library for heterogeneous distributed systems," arXiv preprint arXiv:1512.01274, 2015.

## 5 Stochastic Gradient

- S. L. Smith, P.-J. Kindermans, Q. V. Le, "Don't Decay the Learning Rate, Increase the Batch Size," arXiv:1711.00489, 2017.
- Tianqi Chen, Emily B. Fox, Carlos Guestrin, "Stochastic Gradient Hamiltonian Monte Carlo."
- Y. Li, J.M. Hernandez-Lobato, R.E. Turner, "Stochastic Expectation Propagation," NIPS 2015.
- M.E. Khan, P. Baque, F. Fleuret, P. Fua, "Proximal Variational Inference," NIPS 2015.

## 6 Randomized Algorithms

- Alexander Kraskov, Peter Grassberger, "MIC: Mutual Information based hierarchical Clustering," Information Theory and Statistical Learning, 2008.

## 7 Deep Learning

- Jian Zhou and Olga G Troyanskaya, "Predicting effects of noncoding variants with deep learning? based sequence model," Nature Methods, 12(10): 931-934. doi:10.1038/nmeth.3547, 2015.
- P. Mamoshina et al., "Applications of Deep Learning in Biomedicine," Mol. Pharmaceutics 13, 5, 1445-1454, 2016
- A. Nguyen, et al., "Plug & Play Generative Networks: Conditional Iterative Generation of Images in Latent Space."
- D. P. Kingma, M. Welling, "Auto Encoding Variational Bayes."
- Diederik P. Kingma, Tim Salimans, Max Welling, "Variational Dropout and the Local Reparameterization Trick," NIPS2015.
- G. Alain, Y. Bengio, "What Regularized Auto-encoders Learn from the Data Generating Distribution," Journal of Machine Learning Research, 15, 3743-3773, 2014.
- H. He, B. Xin, D. Wipf, "From Bayesian Sparsity to Gated Recurrent Nets," arXiv:1706.02815, Accepted for oral presentation in NIPS 2017.

## 8 Model Compression

- Dmitry Molchanov, Arsenii Ashukha, Dmitry Vetrov, "Variational Dropout Sparsifies Deep Neural Networks," ICML2017.

## 9 Explanation

- Goodfellow et al., "Explaining and Harnessing Adversarial Examples."
- E. Strumbelj, I. Kononenko, "An Efficient Explanation of Individual Classifications using Game Theory."
- L. M. Zintgraf et al., "Visualizing Deep Neural Network Decisions: Prediction Difference Analysis."

## 10 Kernel Approximation

- Si, Hsieh, Dhillon , "Memory Efficient Kernel Approximation," Journal of Machine Learning Research, vol.18, pp.1-32, 2017.
- Rahimi and Recht, "Weighted Sum of Random Kitchen Sinks."

## 11 Density Estimation

- A. Glazer, M. Lindenbaum, and S. Markovitch, "q-OCSVMM:A q-Quantile Estimator for High-Dimensional Distributions," NIPS 2013.