Project Proposals

Guidelines:

1. Title and Names
2. Objective and significance (1-2 paragraphs)
3. Background (1 page)
    - introduce concepts
    - describe previous work
4. Proposed approach (2 pages)
    - describe data and methodology
    - describe evaluation strategy and expected outcomes
5. Individual tasks (1-2 paragraphs)
6. References

Some Possibilities from Our Side

1. Stanley Black and Decker (Pedja)
2. Interpretability using Sobol's method, compare with state of the art (Vikram)
3. Computer vision: capsule networks (Vikram)
4. Computer vision: kervolutional neural networks (Vikram)
5. Ordered neurons, latent tree (hierarchical) structure in sequential data (Clara)
6. Experiment heavy comparison btw kernel machines and graph NNs (Clara)
7. Transfer learning, domain adaptation, biased semi-supervised learning (Clara, Pedja)
8. Full spectrum mass spectrometry prediction (Pedja)
9. Room generation and indoor 3D perception (Pedja, Clara, Vikram)
10. Low-dimensional embedding of high-dimensional data (Pedja)
11. Active feature elicitation (Shantanu, Pedja)
12. The relationship between kernels and metrics. Proving kernel properties. (Pedja)