

Project plan

Group: 48

Supervised by: Pawel

Selected paper: *Sparse Bayesian Learning and the Relevance Vector Machine* (Tipping, 2001)

We aim for grade C. If the following scope does not reach the desired level for C, we propose doing the tasks/some of the tasks for regression as well. Please give feedback on this.

Group members:

1. Sonja Horn
2. Daniel Wass
3. Martin Köling
4. Povel Forsare Källman

Scope of the project (please indicate clearly which tasks account for the desirable grade higher than E)

1. Implement the proposed methods (RVM), validate Tipping's results on a toy problem. We will implement the methods for some of the datasets used in the paper, and some new datasets. As Tipping's results show a less RVM superiority for classification problems, we limit the report to classification problems.
2. Deploy RVM on selected classification problems, and compare the results and interpretation to SVM. Again, we will use some problems that the paper uses but also include other datasets (for example, problems with higher dimensional input data). **Higher grade.**
3. Investigate scaling properties of RVMs (compare with SVMs).
 - a. Decrease datasets
 - b. See how the difference changes with smaller dataset, (e.g. linearly, exponentially?)
 - c. Discuss complexity

Division of workload:

<i>Student name</i>	<i>Scope of responsibilities/tasks in the project</i>
1. Sonja Horn	2, 3
2. Daniel Wass	1, 3
3. Martin Köling	2, 3
4. Povel Forsare Källman	1, 3

(However, all students will contribute to all tasks. The responsibility division is preliminary.)