

COMP0120 PROJECT - SUPPORT VECTOR MACHINES (SVMS)

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1. MATHEMATICAL SETTING - SUMMARY

1.1. Binary Classification.

Primal Problem

Dual Problem

1.2. Hard Margin.

1.3. Soft Margin.

1.4. Challenge!

More classes?

Different Penalty Functions?

Algorithms not on syllabus?

1.5. Non-Linear Classification.

Kernels?

2. SIMULATION STUDY

2.1. Chosen Data Set.

Challenges?

How to address?

2.2. Resulting Optimisation Problem.

Convex/Non-Convex

Constrained/Unconstrained

Smooth/Non-Smooth

Linear/Quadratic/Non-Linear

Challenges

3. SOLUTION OF OPTIMISATION PROBLEM

3.1. Algorithm 1.

3.2. Algorithm 2.

4. REFERENCES

[1] ???

[2] ???

[3] ???