

Solving Non-Linear SVM in Linear Time

- A Nyström Approximated SVM with Applications to Image Classification

Ming-Hen Tsai
Academia Sinica
(now at Google Inc.)

Joint work with Yi-Ren Yeh, Yuh-Jye Lee and
Yu-Chiang Wang

Outline

- Introduction
- Nyström Method for Kernel Approximation
- Nyström Method for Linear Representation
- Experiment
- Conclusion and Application Areas

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We Have Known..

- Non-linear SVM: powerful but slow
- Linear SVM: simple but fast

Paper: "Training Linear SVMs in Linear Time" by
Joachims

Software: LIBLINEAR, VW, etc.

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Yes. Do approximation!

Kernel in Non-linear SVM

Nyström Method

An Equivalent Representation

The Equivalent Representation in Nyström Method

Conclusion and Future Work