

# Movie Profit Prediction: SVM Using Privileged Information

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## Abstract

Vapnik et al. recently introduced a new machine learning paradigm, known as Learning Using Privileged Information or LUPI. The core concept of LUPI is that a teacher supplies information during the training phase of the learning process that is not available for the test set. This additional information does not get its own  $\beta$ . Instead it is used to empower the other information in the training set. Since it will not be needed in the testing data, this additional information can be categorically different - and often more explanatory - than the other training data.

We chose to implement LUPI on data collected about the film industry. Specifically, we focused on predicting the earnings ratio of films using information available prior to filming. When training our model we also included the Internet Movie Database Rating of the films in our training set. We treated this rating information - which can only be determined after the film is released - as privileged data.

Vapnik describes a new version of Support Vector Machines, which he has dubbed SVM+. It effectively handles the addition of privileged information. We created SVM+ by modifying the Sequential Minimal Optimization algorithm popularly used to solve Support Vector Machines Problems, and showed that it is superior to regular SVM when predicting the earnings ratio of movies.

## I. INTRODUCTION

S<sup>VM</sup>

## II. METHODS

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## III. RESULTS

Table 1: Example table

Name		
First name	Last Name	Grade
John	Doe	7.5
Richard	Miles	2

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$$e = mc^2 \quad (1)$$

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## IV. DISCUSSION

### I. Subsection One

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### II. Subsection Two

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## REFERENCES

[Figueredo and Wolf, 2009] Figueredo, A. J. and Wolf, P. S. A. (2009). Assortative pairing and life history strategy - a cross-cultural study. *Human Nature*, 20:317–330.