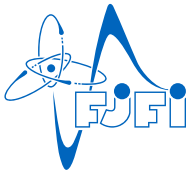
Czech Technical University in Prague
Faculty of Nuclear Sciences and
Physical Engineering

General Framework for Classicifcation at the Top

Dissertation



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Poděkování:

Thanks thanks

Čestné prohlášení:

Prohlašuji na tomto místě, že jsem předloženou práci vypracoval samostatně, a že jsem uvedl veškerou použitou literaturu.

V Praze dne 1. prosince 2021

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Ing. Václav Mácha

Název: **Title title title title title title**

Autor: Ing. Václav Mácha

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Druh práce: Disertační práce

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Klíčová slova: Keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords

Title: **Title title title title title title**

Abstract: Abstract abstract

Keywords: Keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords keywords

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Text text

Theorem 1.1

Theorem theorem

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Definition definition

Text text

1.1 Ranking Problems

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Definition 1.3

Definition definition

1.2 Accuracy At the Top

Text text

1.3 Hypothesis Testing

Text text

Theorem 1.4

Theorem theorem

Proof:
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Proof of theorem 1.4:

Text text ■

Text text

2

Introduction

Many binary classification problems focus on separating the dataset by a linear hyperplane $\boldsymbol{w}^\top \boldsymbol{x} - t$. A sample $\boldsymbol{x}$ is deemed to be positive or relevant (depending on the application) if its score $\boldsymbol{w}^\top \boldsymbol{x}$ is above a threshold t. Multiple problem categories belong to this framework:s

3 Linear Classification at the Top

4
Non-Linear Classification at the Top

Bibliography

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[2] Shivani Agarwal. The infinite push: A new support vector ranking algorithm that directly optimizes accuracy at the absolute top of the list. In *Proceedings of the 2011 SIAM International Conference on Data Mining*, pages 839–850. SIAM, 2011.