

Posudek diplomové práce

Matematicko-fyzikální fakulta Univerzity Karlovy

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Název práce Image Popularity Prediction
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Studijní program Computer Science
Obor Artificial Intelligence

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Text posudku:

The goal of the thesis was to create models that would be able to predict the popularity of images on social networks. The student fulfilled this goal by downloading images from Reddit and predicting the number of upvotes the images would get based on the images themselves and also on other available metadata.

The whole thesis is divided into four chapters (plus a conclusion chapter). The first chapter introduces the problem of image popularity prediction, the second chapter then describes the convolutional neural networks that are used in most works on this topic and also four other models that deal with the problem of image popularity prediction. These chapters contain the information needed to put the thesis in its context.

The third chapter describes the Reddit network and how the dataset used in the thesis was obtained. The student downloaded roughly 2,000 images from each of two different subreddits. He chose a general picture subreddit (`r/pics`) and a landscape photography oriented one (`r/earthporn`). This is a good choice as these subreddits contain different types of pictures, and it can be expected that different types of features will be important for predicting their quality.

Finally, the fourth chapter contains the description of the model designed in this thesis and its evaluation on the two datasets. The model is unique as it combines both features based on the images and also the textual features (such as the caption of the image). The student performed a wide range of experiments with the model and compared it also to one of the baseline models from the literature. The performance of the model on the datasets seems better than the performance of the baseline. Overall, the number of experiments is relatively large, and the results are interesting, however, the presentation of the results (mainly writing clarity) could be improved.

Overall, the thesis fulfilled the goals. The student showed that he is capable to solve complex real-life problem using various deep learning techniques. The weakest part of the thesis is the

writing clarity – some parts of the thesis are harder to understand, and some things could be explained better. Most of the important information is however included.

I recommend the thesis for defense.

Práci doporučuji k obhajobě.

Práci nenavrhuji na zvláštní ocenění.

V Praze dne August 21, 2023

Podpis: