

Deep Learning with Little Data: Predicting Basketball Scores

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1. Abstract

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2. Introduction

Deep Learning often requires large amounts of data and training. As technology as improved, we have gained better systems such as GPT (ADD MORE) and others, in part due to the feasibility of large scale training becoming available. However, some tasks are inherently constrained by a lack of data. In this paper, we explore the applicability of Deep Learning to one such task: predicting the outcome of basketball games. Specifically, we aim to accurately predict the overall score of a match given the two teams playing against each other.

Due to the nature of basketball, teams are subject to change every year and performance can be volatile. There is not guarantee that a team which performs well now will perform just as well 5 years into the future (CITE EXAMPLE). Although data data regarding teams may exist from many years back (CITE), it is hardly a good idea to use ancient statistics when training a model for today's use; in other words, technological advancements with regards to scaling won't allow for improvements in similar tasks constrained in data naturally.

We aim to explore the possibility of using certain Deep Learning techniques (EXPAND) to predict basketball game outcomes despite the lack of available data. Finding the right features and hyperparameters will be of utmost importance since scalability is impossible. We hope the results will be useful in applying deep learning to other tasks with limited data availability (EXAMPLES?) and provide an insight into how "rought draft" models can be created before scaling up.

3. Related Work

4. Technical Challenges

5. Experiments

References