
Recreating AI Models From Scratch

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Abstract

Transformer model [1]

1 Introduction

2 Machine Learning

2.1 Linear regression

2.2 Logistic regression

2.3 Decision Trees

2.4 Random Forest

2.5 XGBoost

3 Deep Learning

3.1 Convolutional Neural Networks

3.2 Recurrent Neural Networks

3.3 Transformers

4 Experiments and Results

4.1 Linguistic Probing Tasks

4.2 Image Classification on CIFAR-10

4.3 Text Classification on IMDB

5 Conclusion

6 Future work

Since the main focus of this report was to start with recreating machine learning models like Random Forests, XGBoost and to then gradually continue to Deep Learning models, I made the decision to leave Reinforcement Learning models for another time. In the future, I would like to

explore Reinforcement Learning models such as Deep Q-Networks (DQN) [2] and Proximal Policy Optimization (PPO) [3].

7 Discussion

Acknowledgments

References

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