TITLE

Mario Medel & Joseph Coppeta

NC State: Department of Computer Science
{mamedelp, jncoppet}@ncsu.edu

1 Background

1.1 Problem

The goal of this project is to to create an algorithm that is proficient at predicting NBA All-Stars based on statistical data from their first three seasons played. In order to do this, we took into consideration a vast variety of variables such as draft position, offensive statistics such as points, offensive rebounds, assists, turnovers, field goal percentage and free throw percentage, defensive statistics such as defensive rebounds, blocks and personal fouls committed, team coach, and team record. Given that steals, blocks, and turnovers were not official NBA statistics until the 1973-74 season, we elected to restrict our dataset from 1973-2004.

1.2 Literature Survey

The following literature can be summed

1.2.1 Modelling the NBA to make better predictions

1.2.2 A Hybrid Machine Learning Model for Predicting USA NBA All-Stars

1.2.3 Application of Distributed Probability Model in Sports Based on Deep Learning: Deep Belief Network (DL-DBN) Algorithm for Human Behaviour Analysis

1.2.4 An empirical comparison of supervised learning algorithms

TODO [1]: http://hdl.handle.net/1721.1/85464
TODO [2]: https://www.mdpi.com/2079-9292/11/1/97
TODO [3]: https://www.hindawi.com/journals/cin/2022/7988844/
TODO [4]: https://dl.acm.org/doi/10.1145/1143844.1143865

2 Methods

2.1 Approach

2.2 Rationale

3 Plan & Experiment

3.1 DataSets

3.2 Hypotheses

3.3 Experimental Design

4 Results

4.1 Results

4.2 Critical Evaluation

5 Conclusions

5.1 Lesson Learned

References

[1] Albert, A.A.; de Mingo López, L.F.; Allbright, K.; Gomez Blas, N. A Hybrid Machine Learning Model for Predicting USA NBA All-Stars. *Electronics* 2022, 11, 97. https:// doi.org/10.3390/electronics11010097

[2] Keshav Puranmalka. 2013. Modelling the NBA to make better predictions Retrieved October 19, 2022 from https://dspace.mit.edu/handle/1721.1/85464

[3] Rich Caruana and Alexandru Niculescu-Mizil. 2006. An empirical comparison of supervised learning algorithms. *Proceedings of the 23rd international conference on Machine learning - ICML '06* (June 2006). DOI:http://dx.doi.org/10.1145/1143844.1143865

[4] Tianyang Liu, Qizhe Zheng, and Ling Tian. 2022. Application of distributed probability model in sports based on Deep Learning: Deep Belief Network (DL-DBN) algorithm for human behaviour analysis. *Computational Intelligence and Neuroscience 2022* (December 2022), 1-8. DOI:http://dx.doi.org/10.1155/2022/7988844