

THE CURIOSITY CUP

A Global SAS® Student Competition

Predicting the winners in League of Legends matches

S'wich Up!, Monika Haubro and Holger Danielsen, University of Copenhagen



Team Presentation

Team S'wich Up!



UNIVERSITY OF
COPENHAGEN



Monika Haubro

Læser BSc Machine Learning
og Datavidenskab på 2. år



Holger Danielsen

Har lige færdiggjort BSc
Machine Learning og
Datavidenskab

Problem and Impact

Intro to LoL

Data Presentation

PCA

Decision Tree Models

Analysis

Conclusion

Future Studies

Problem and Impact

Impact

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LEAGUE OF LEGENDS

 **RIOT GAMES**

Problem and Impact

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Introduction to League of Legends



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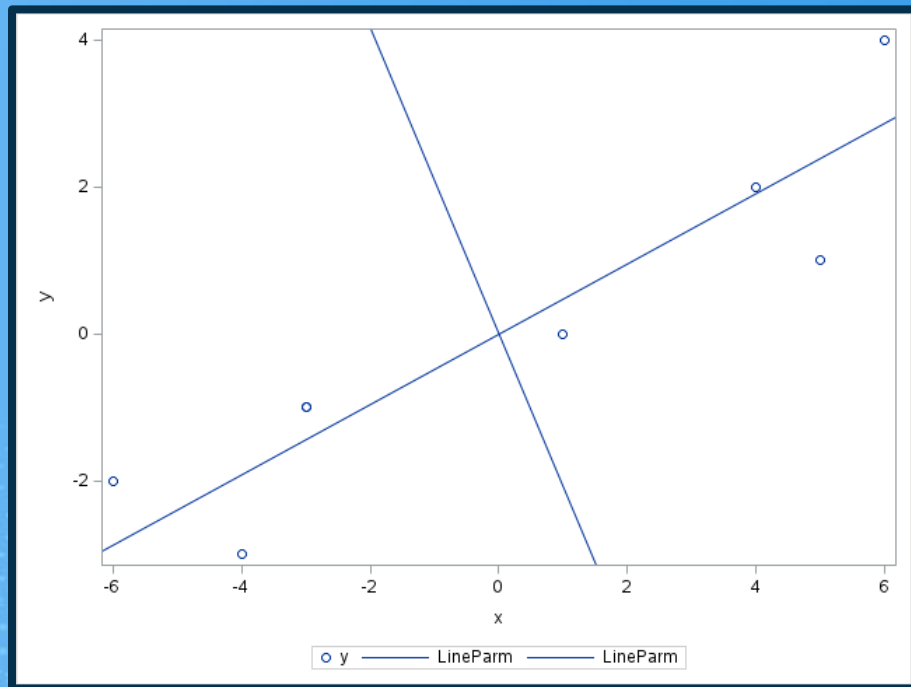
Future Studies

Data presentation

	<u>Raw dataset</u>
Data extracted	2020
Player skill	top 1%
Data dimensionality	40 columns
Data size	9879 data points
Blue victories	4930 wins
Red victories	4949 wins

	Data dimensionality	Data size
<u>Raw dataset</u>	40 columns	9879 data points
<u>Dataset</u>	21 columns	9879 data points
<u>Visual dataset</u>	13 columns	9879 data points

PCA - How to PCA



- Re-center dataset around 0
- Find principal components
- Rotate dataset so the axes becomes principal components

Problem and Impact

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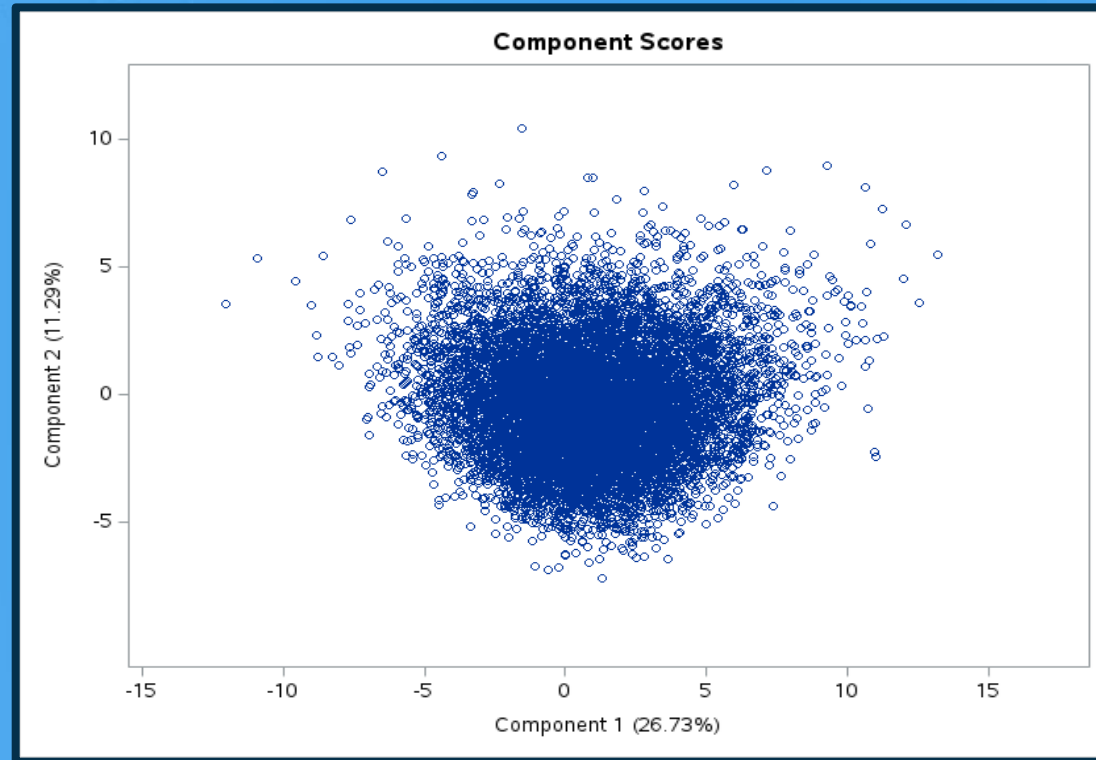
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PCA - Dataset



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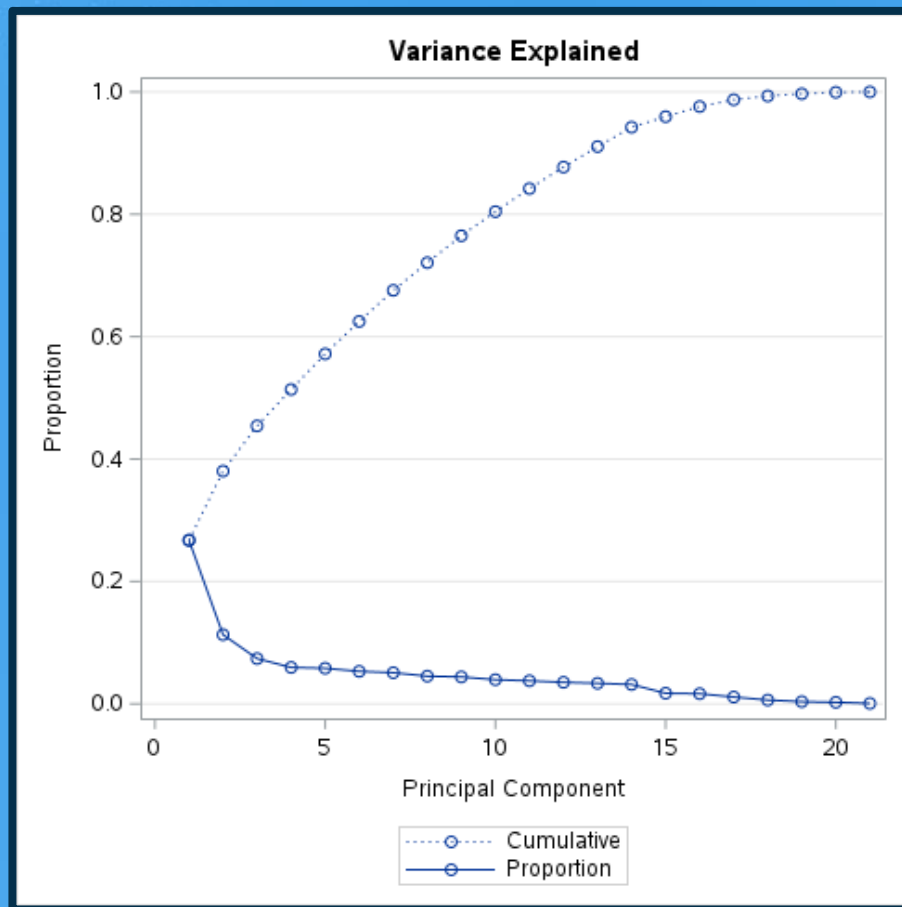
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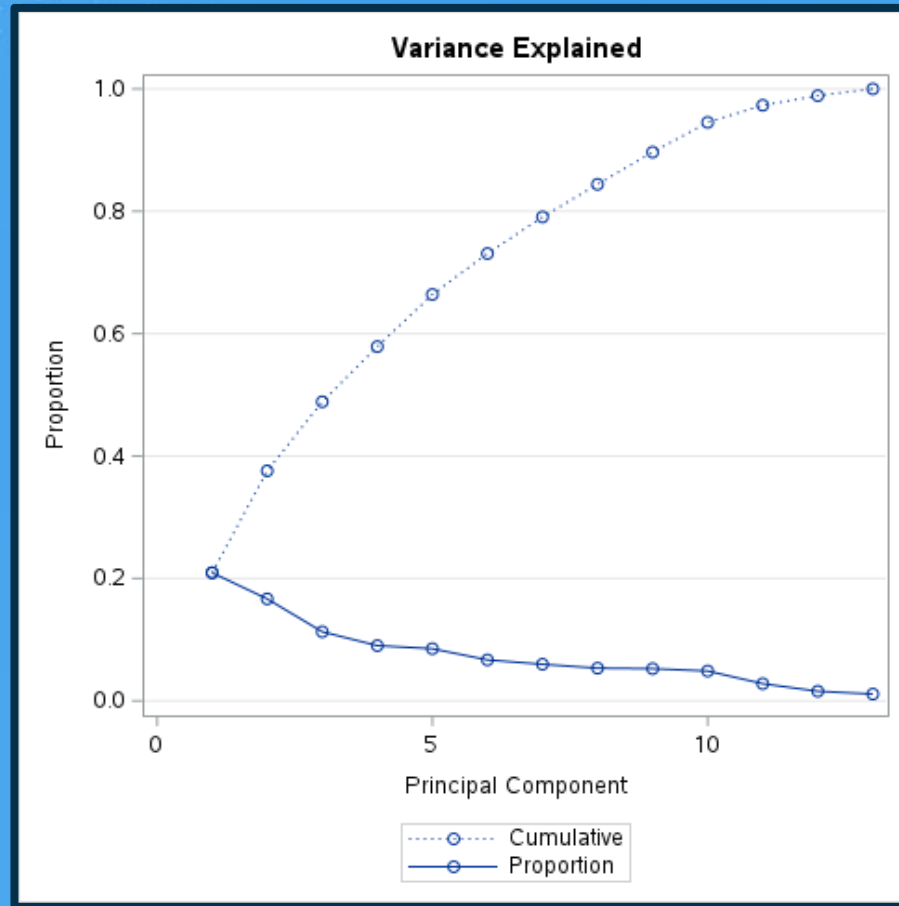
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PCA - Visual dataset



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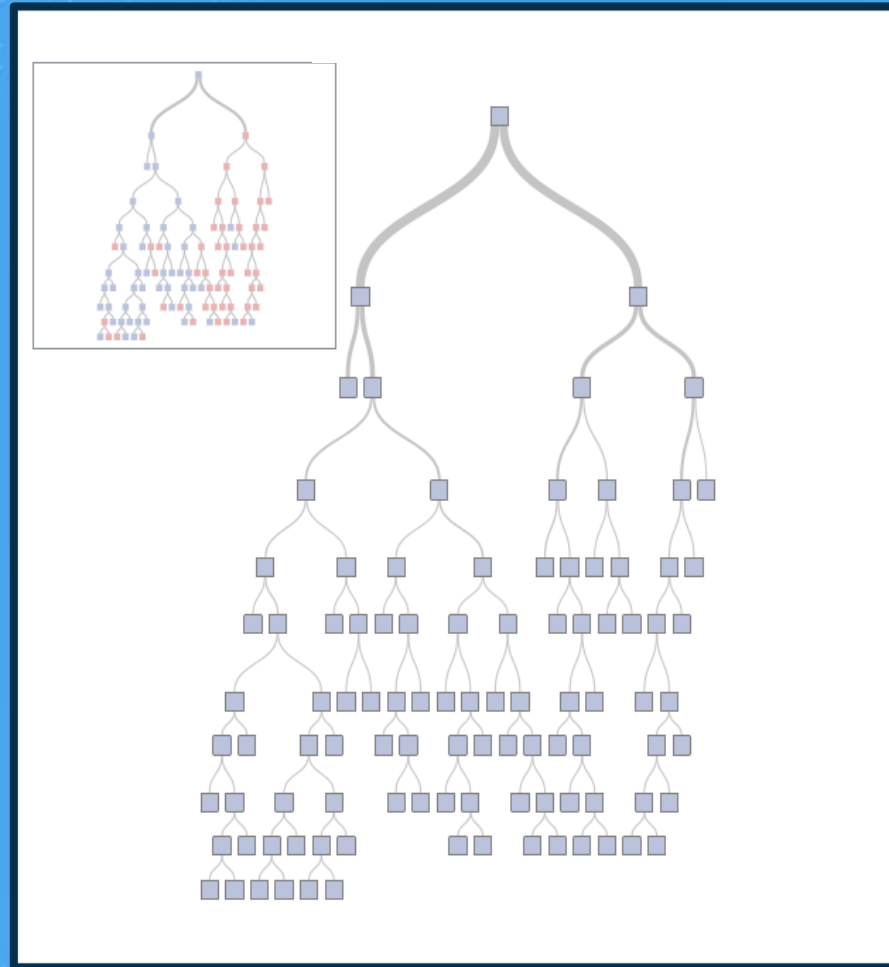
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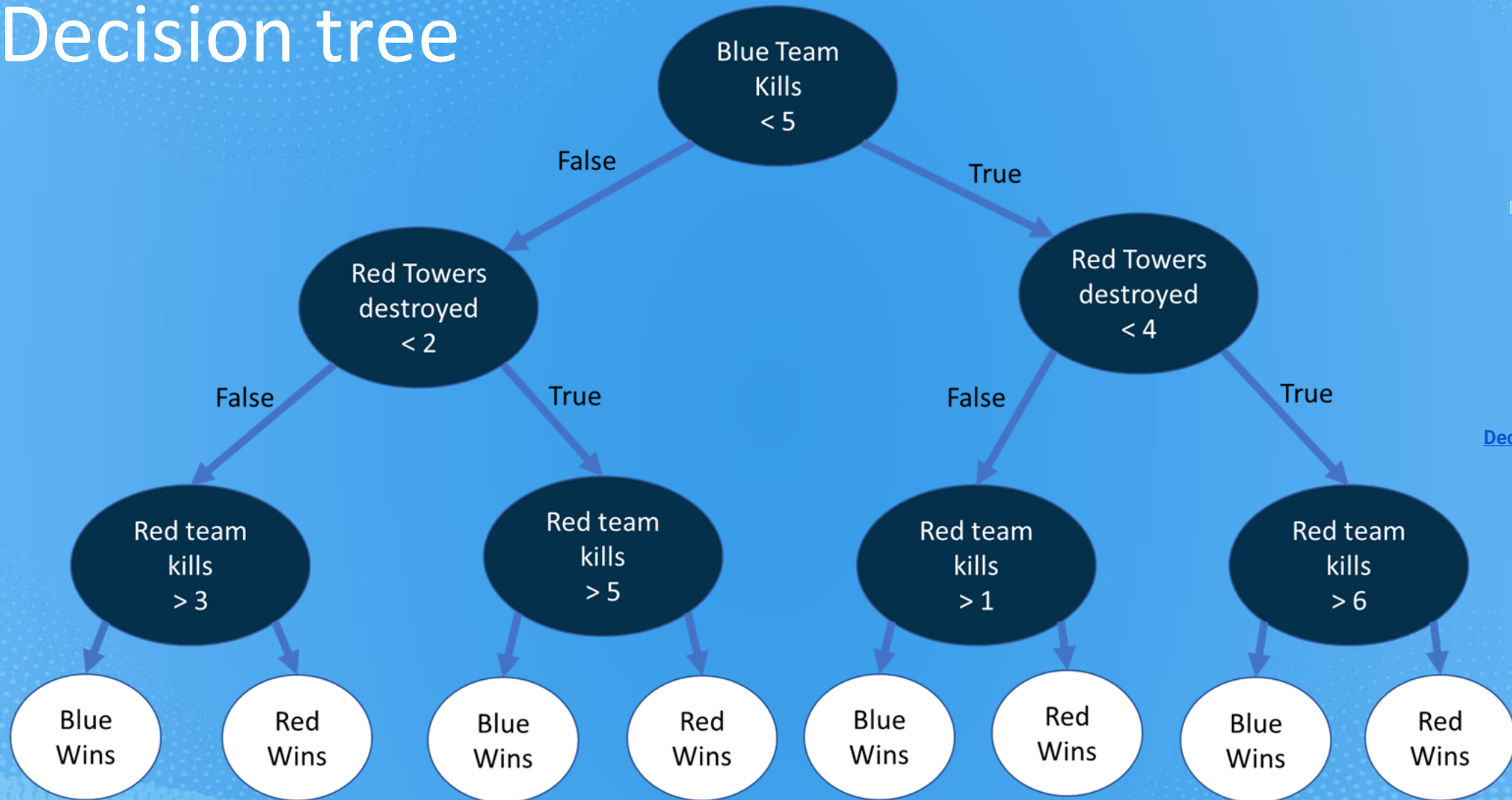
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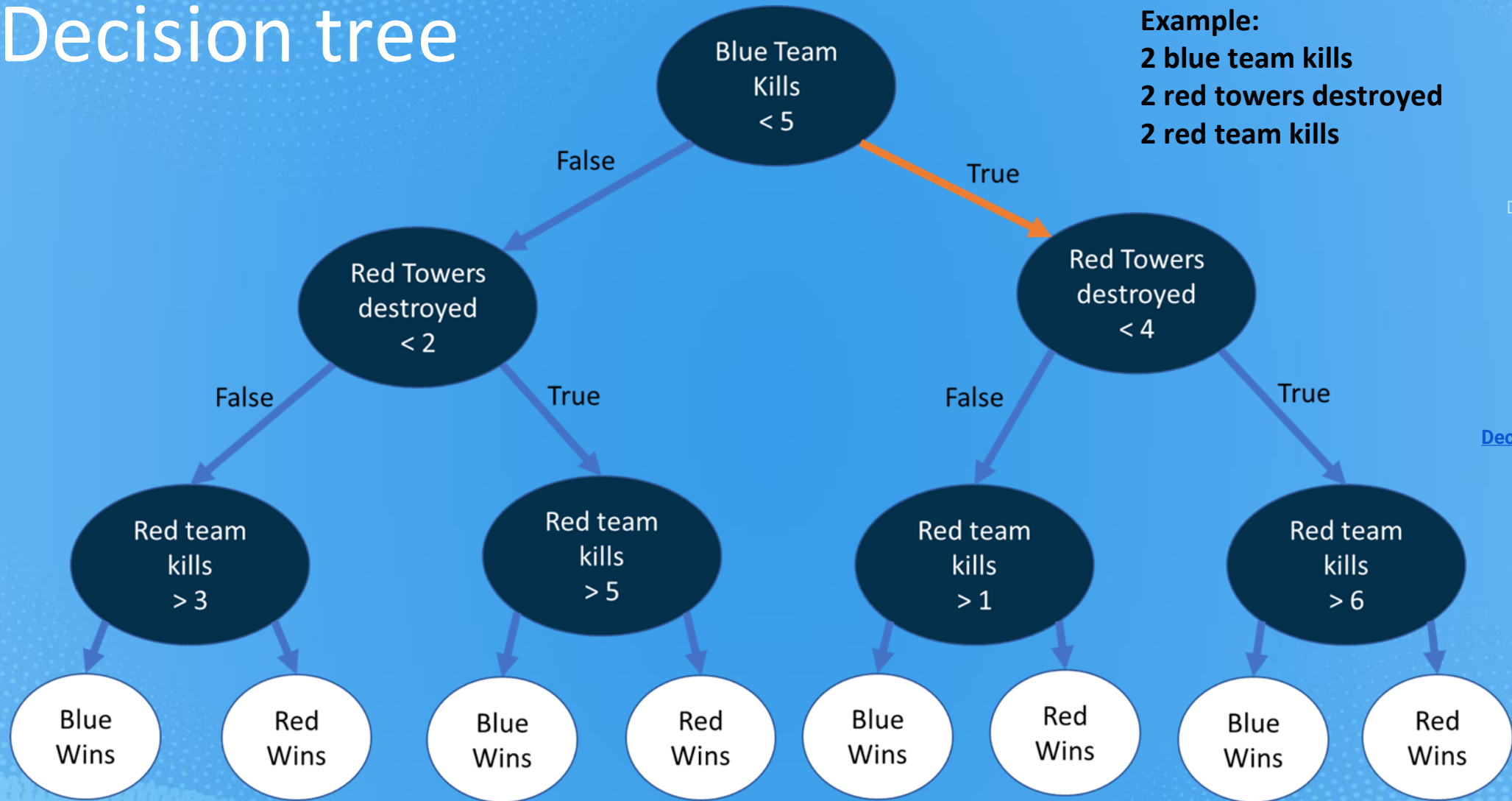
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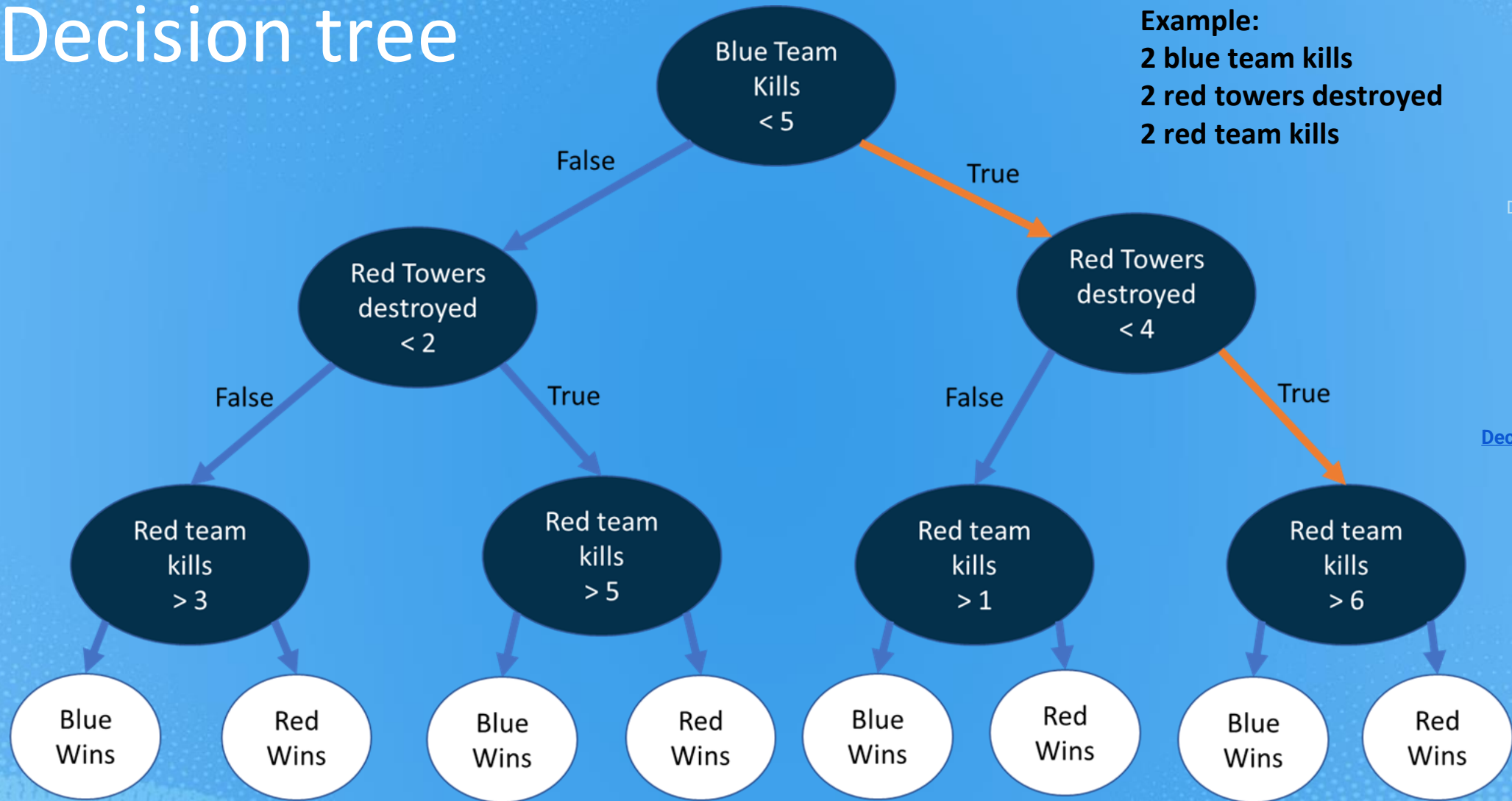
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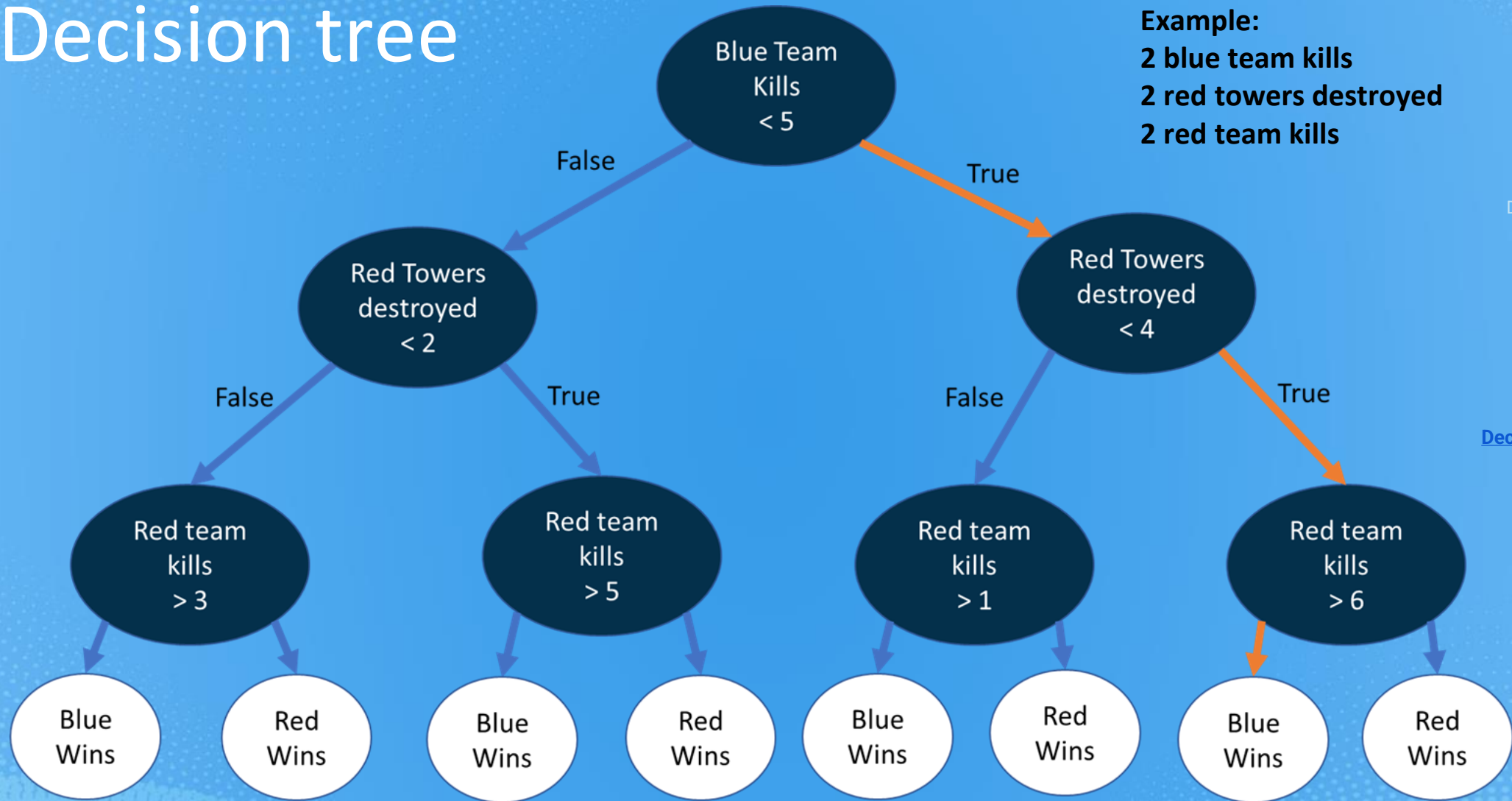
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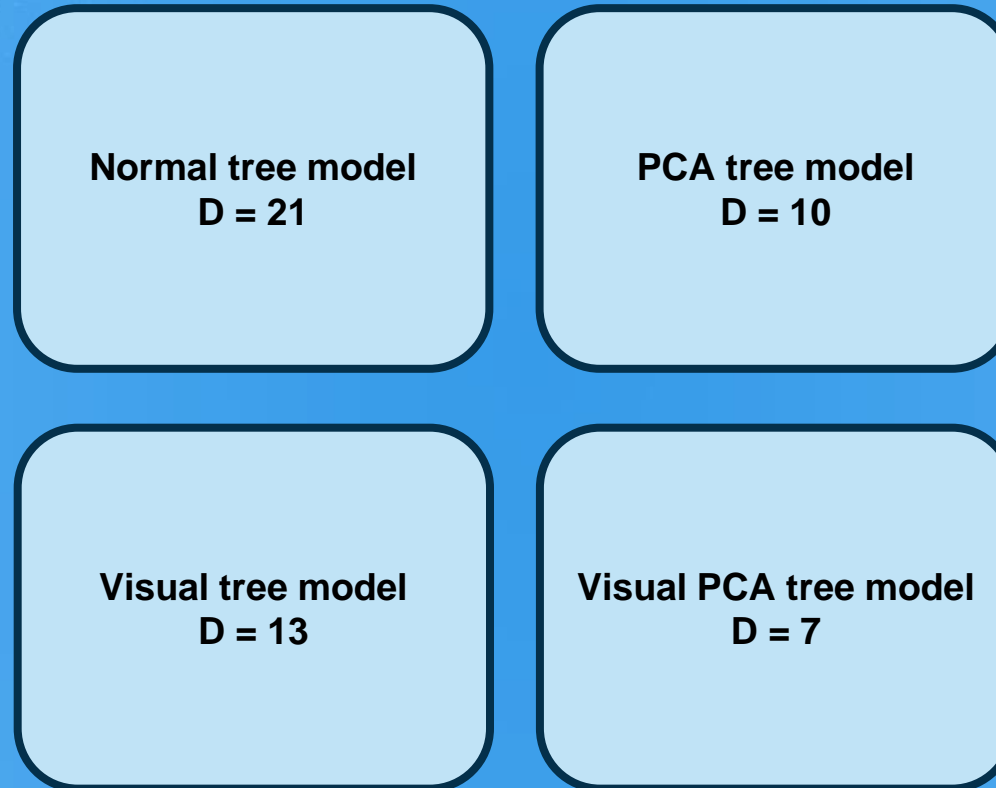
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Decision tree - Models



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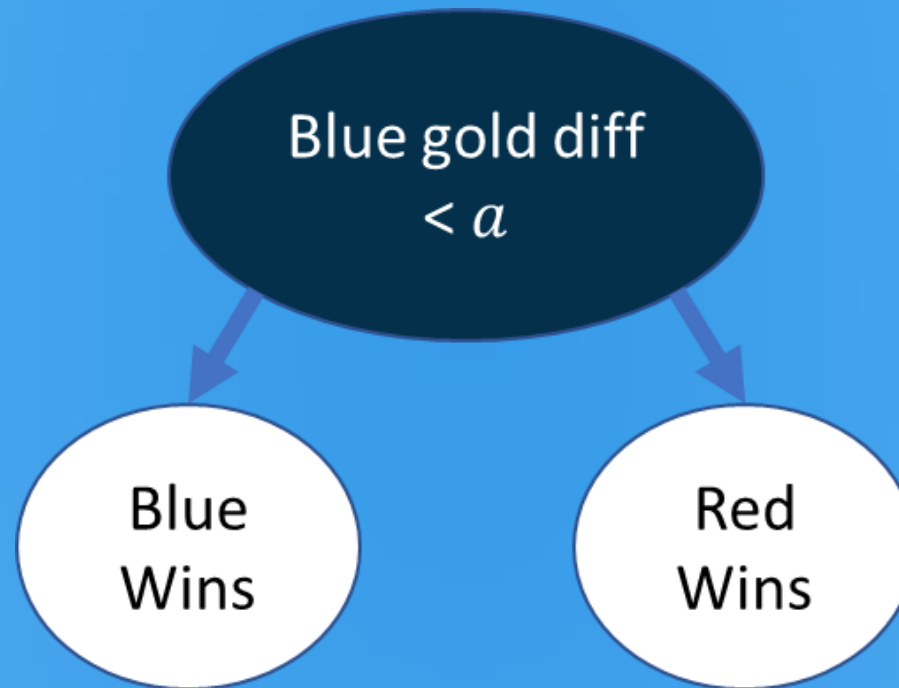
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Decision tree - Baseline



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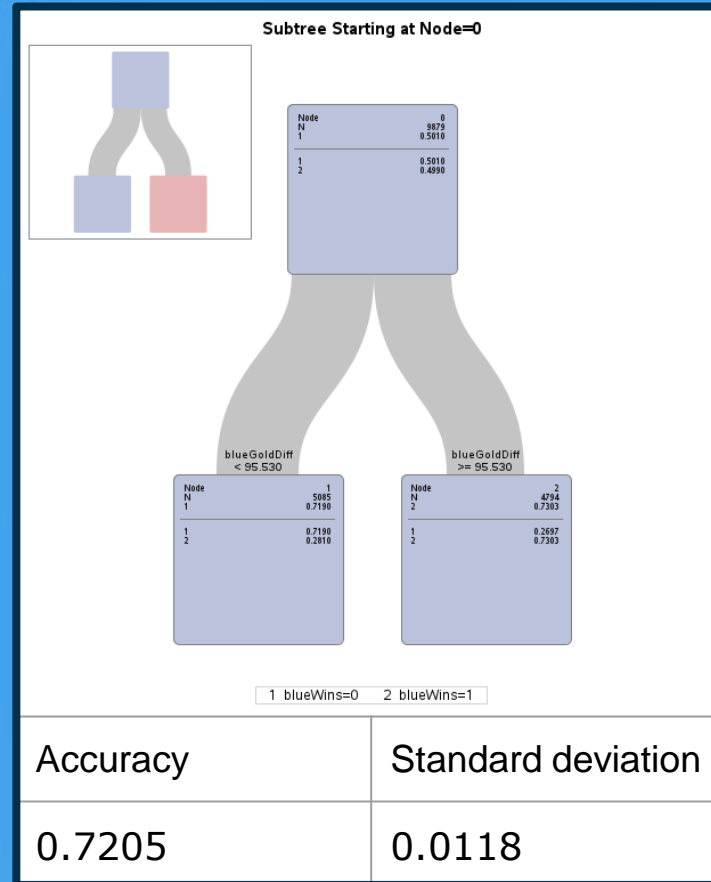
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Analysis - Baseline model



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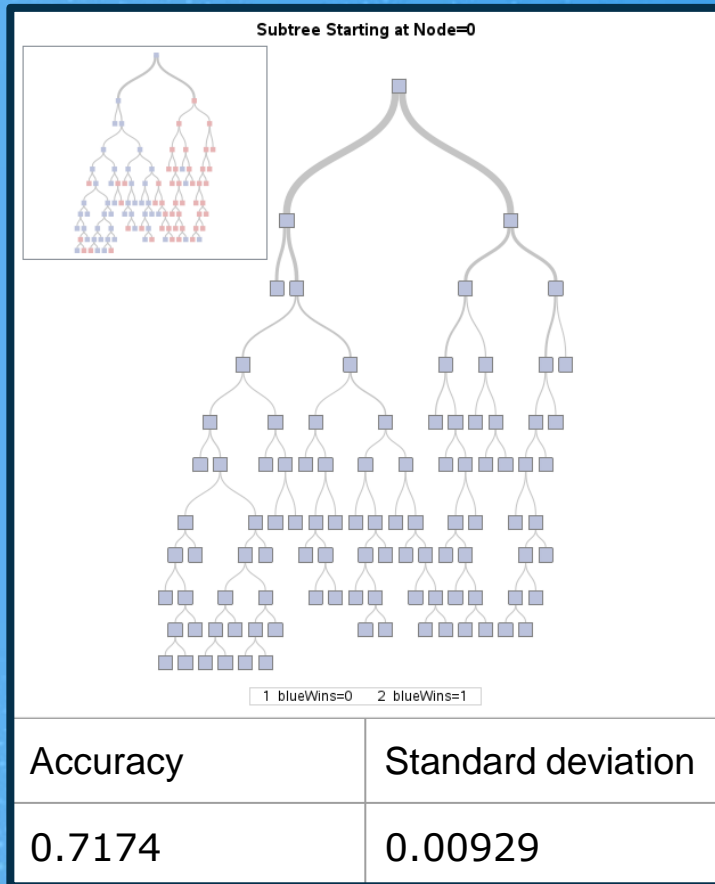
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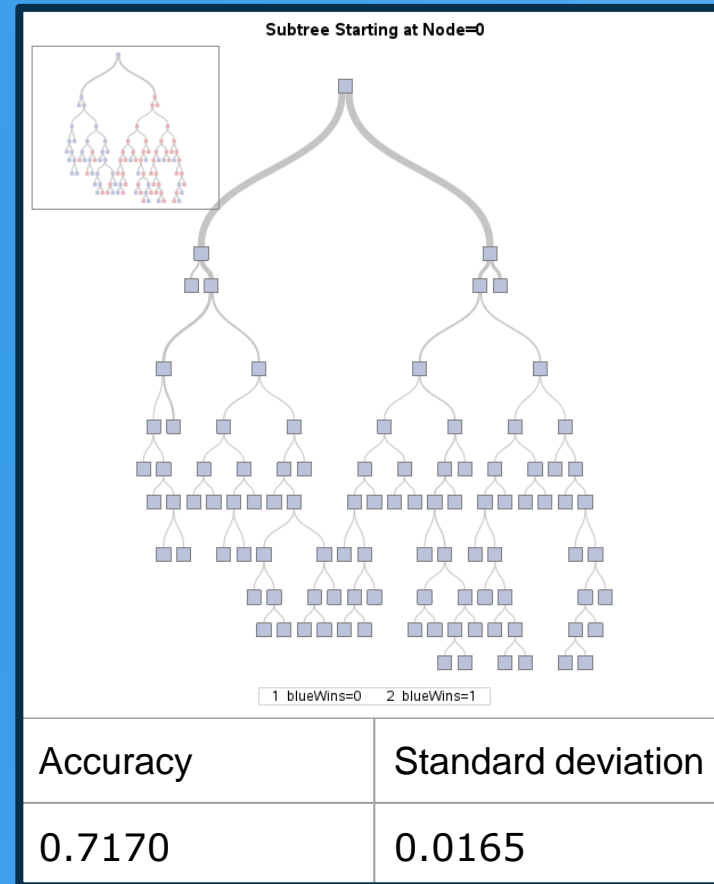
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Future Studies

Analysis - Normal and PCA tree model



Normal tree model



PCA tree model

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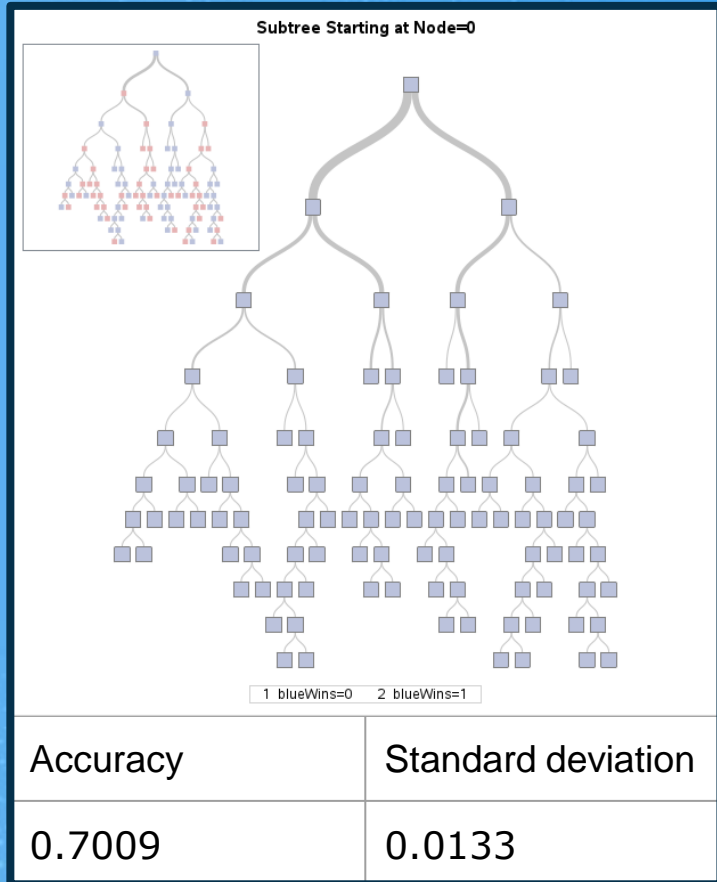
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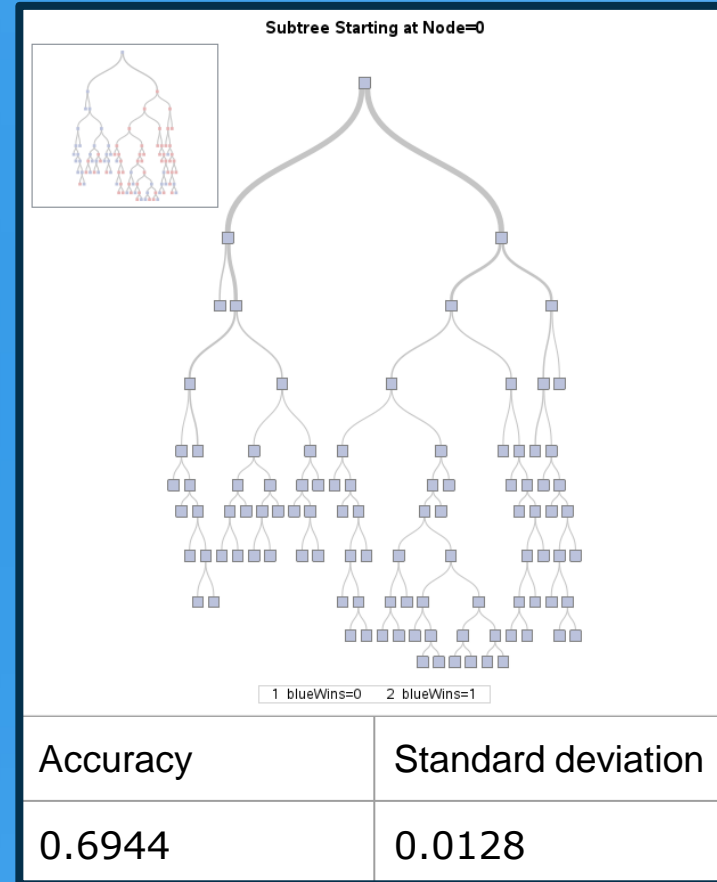
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Analysis - Visual tree models



Visual tree model



Visual PCA tree model

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Analysis - Results

	Accuracy	Standard deviation
Baseline model	0.7205	0.0118
Normal tree model	0.7174	0.00929
PCA tree model	0.7170	0.0165
Visual tree model	0.7009	0.0133
Visual PCA tree model	0.6944	0.0128

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Conclusion

- Gold difference is a strong indicator of the winning team
- The first 10 minutes matter, but the game remains undecided

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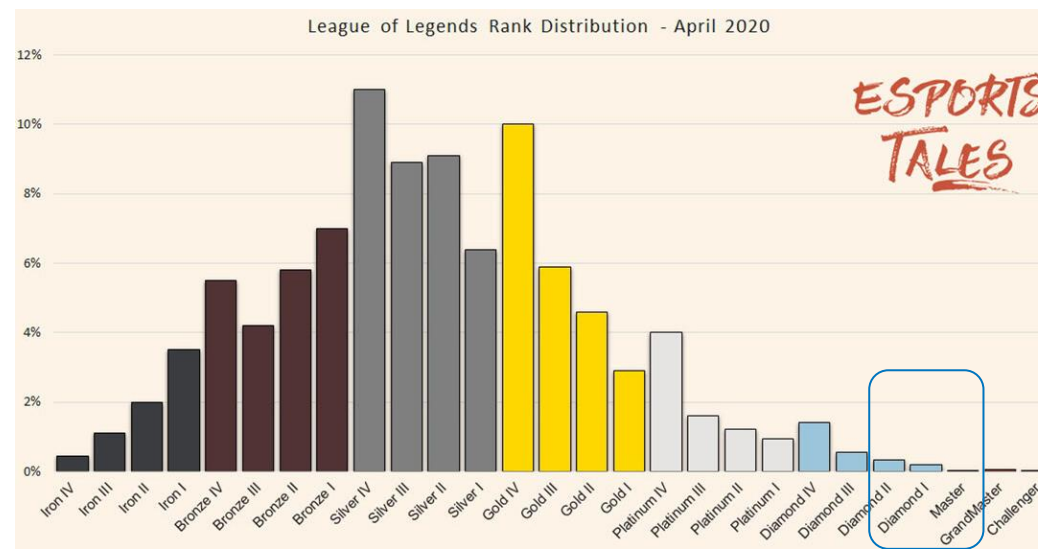
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Future studies

- Looking at data of first 15 min vs. first 10 min.
- Low elo, high elo and pro play



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Thank you!

If you have any questions, feel free to reach out to

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