# Predicting League of Legends Results Based on Character Selection

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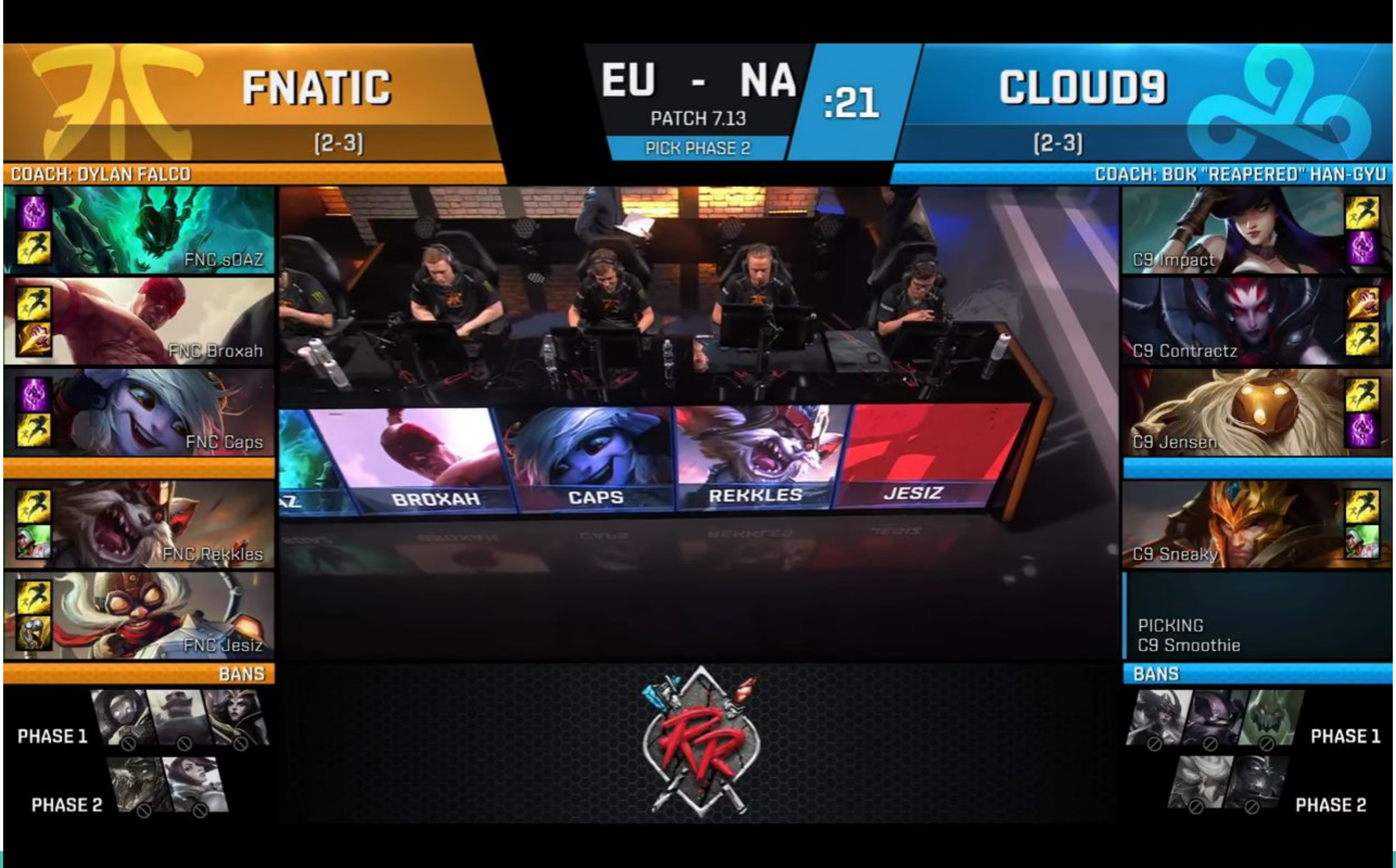
FNATIC
(2-3)
EU - NA
PATCH 7.13
PICK PHASE 2
:21
CLOUD9
(2-3)
COACH: DYLAN FALCO
COACH: BOK "REAPERED" HAN-GYU
FNC sOAZ
FNC Broxah
FNC Caps
FNC Rekkles
FNC Jesiz
BROXAH
CAPS
REKKLES
JESIZ
C9 Impact
C9 Contractz
C9 Jensen
C9 Sneaky
PICKING
C9 Smoothie
BANS
PHASE 1
PHASE 2
BANS
PHASE 1
PHASE 2

# Motivations and Questions

Competitive 5 vs. 5 matches where 10 Players select 10 independent characters from a pool of over 100.

Look at Data of Character Selection in League of Legends.

How well can we predict the winning team from just Character Selection?

# Dataset: League of Legends Ranked Games[1]

Data from over 50,000 matches.

Label: Match winner (1 or 2).

Features include champion selections of each individual player.

Champion ID's: Integers ranging from 1 to 518.

1. https://www.kaggle.com/datasnaek/league-of-legends

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Preprocessing: Restructure the data, make each champion a feature with a value of 0 (not picked), 1 (picked by team 1), or 2 (picked by team 2).

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# Naive Bayes

Naive Bayes Assumption:

$$p(y = k \mid c) \propto p(y = k) * p(c_1 \mid y = k) * p(c_2 \mid y = k) * \ldots * p(c_{518} \mid y = k)$$ [1]

1. Handout 8

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Prediction Accuracy: 54.22%

| | Team 1 (Predicted) | Team 2 (Predicted |
|---|---|---|
| Team 1 | 2883 | 2332 |
| Team 2 | 2382 | 2701 |

1. Handout 8

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Effectively assigns a **score** to each champion.

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1. Handout 8

# Modified Decision Tree

Capture Character matchups: What happens if Character Zed is picked against Character Yi?

Create a Tree with Depth 2.

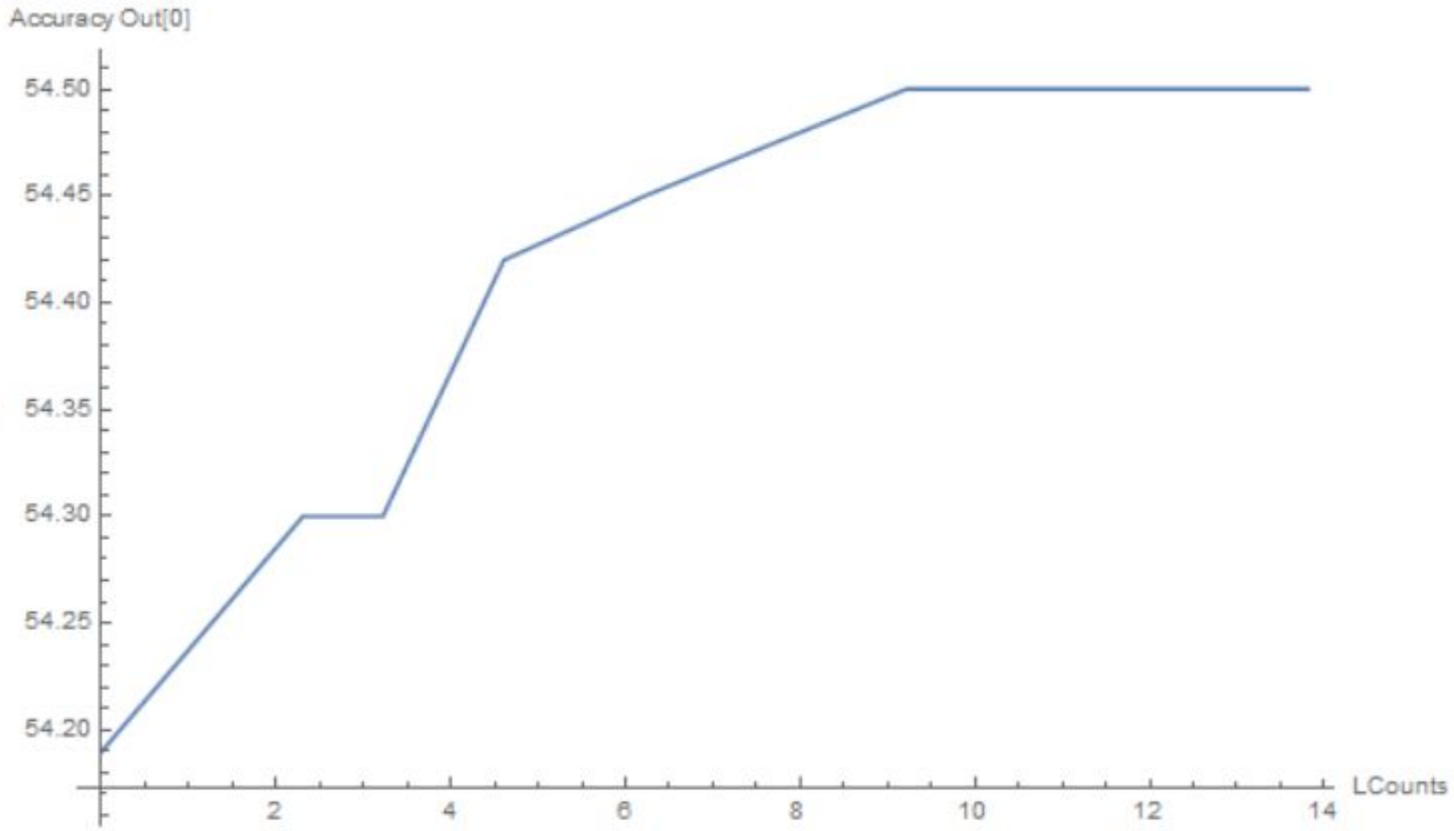
A Branch for Every Champion at Every Node.

Every Leaf counts X = Laplace + Number of Wins of Team A; Y = Laplace + Wins Team B,

Gives (X)/(X+Y) as Win% of Team A for given Character Matchup

Prediction: if Average Win% of all 25 Character Matchups is >50%, Predict Team A Victory.

# Accuracy vs. Log(Laplace Counts)



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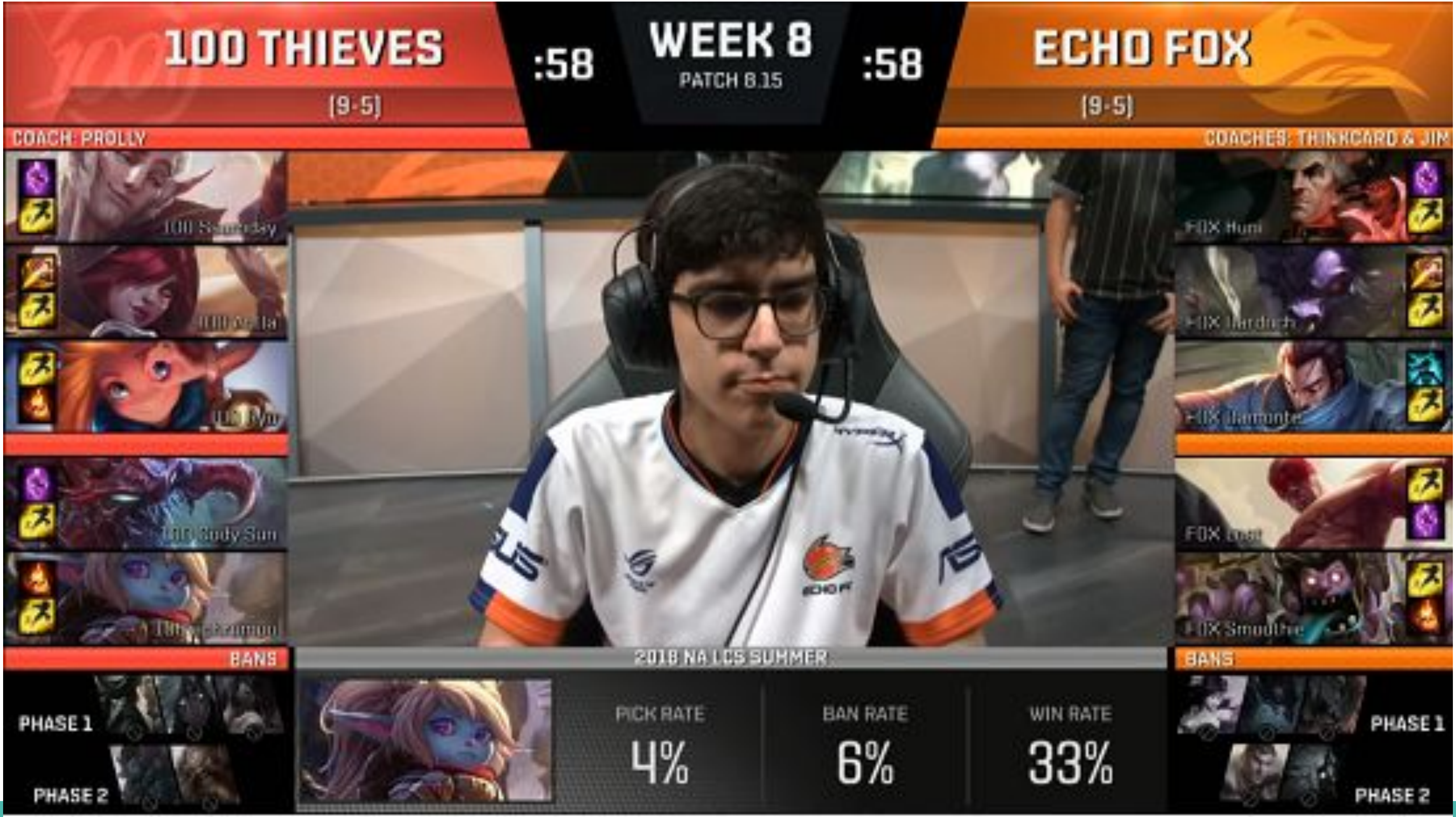
Future Work: A model that can examine interactions between champions on the **same team**.

Use data that is sensitive to **player roles** and **summoner spells.**


100 THIEVES
:58
WEEK 8
PATCH 8.15
:58
ECHO FOX
(9-5)
(9-5)
COACH: PROLLY
COACHES: THINKCARD & JIM
BANS
2018 NA LCS SUMMER
BANS
PHASE 1
PHASE 2
PICK RATE
4%
BAN RATE
6%
WIN RATE
33%
PHASE 1
PHASE 2