

Projecting College Quarterbacks

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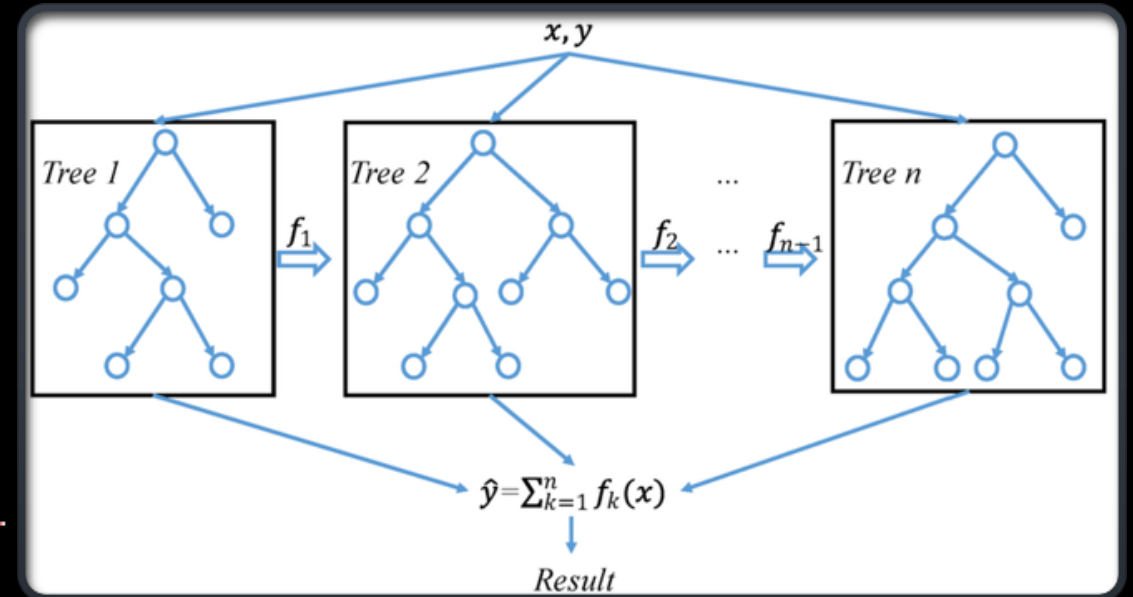
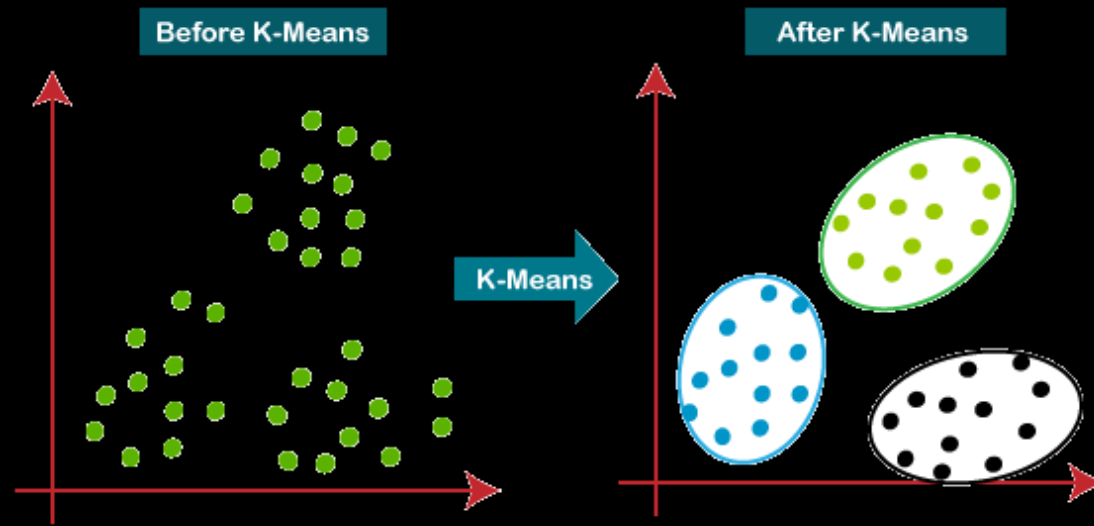


Overview

- Methodology
- Model Overview
- Projecting Scheme Fits
- Risk Profile Analysis
- Concluding Thoughts and Questions



Algorithmic Approach



Scheme Definitions

Scheme 1

- WEST COAST OFFENSE
- ZONE RUNNING GAME
- HIGH SHORT PASS %
- QB MISDIRECTION

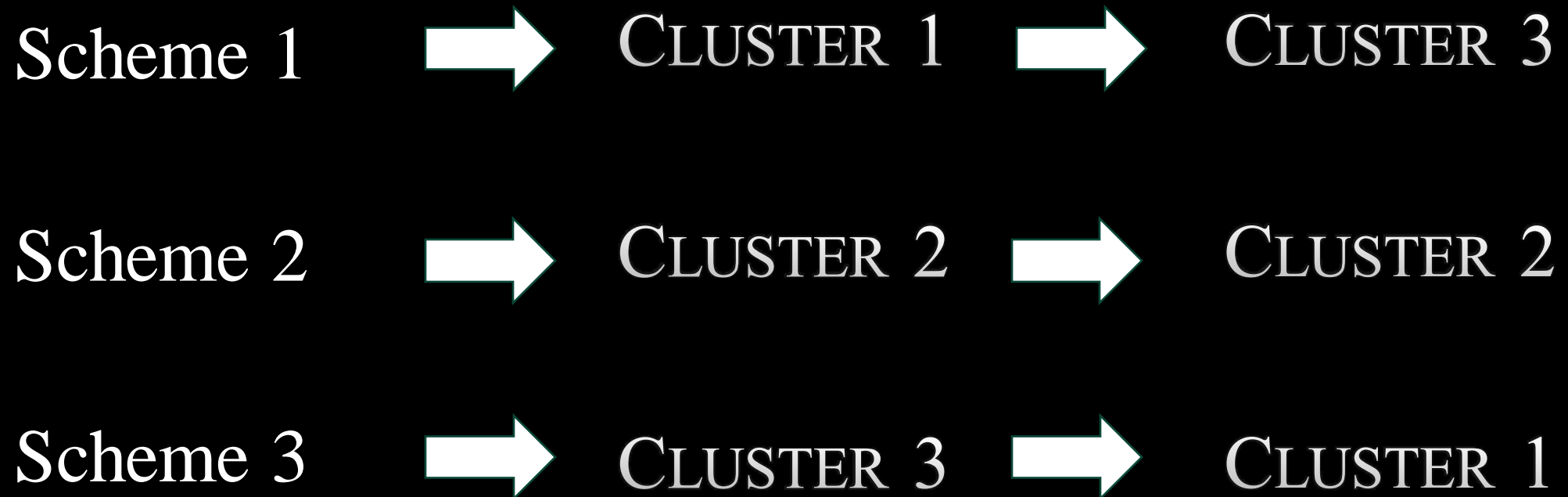
SCHEME 2

- POWER RUN GAME
- HIGH PLAY ACTION %
 - “BULLY BALL”

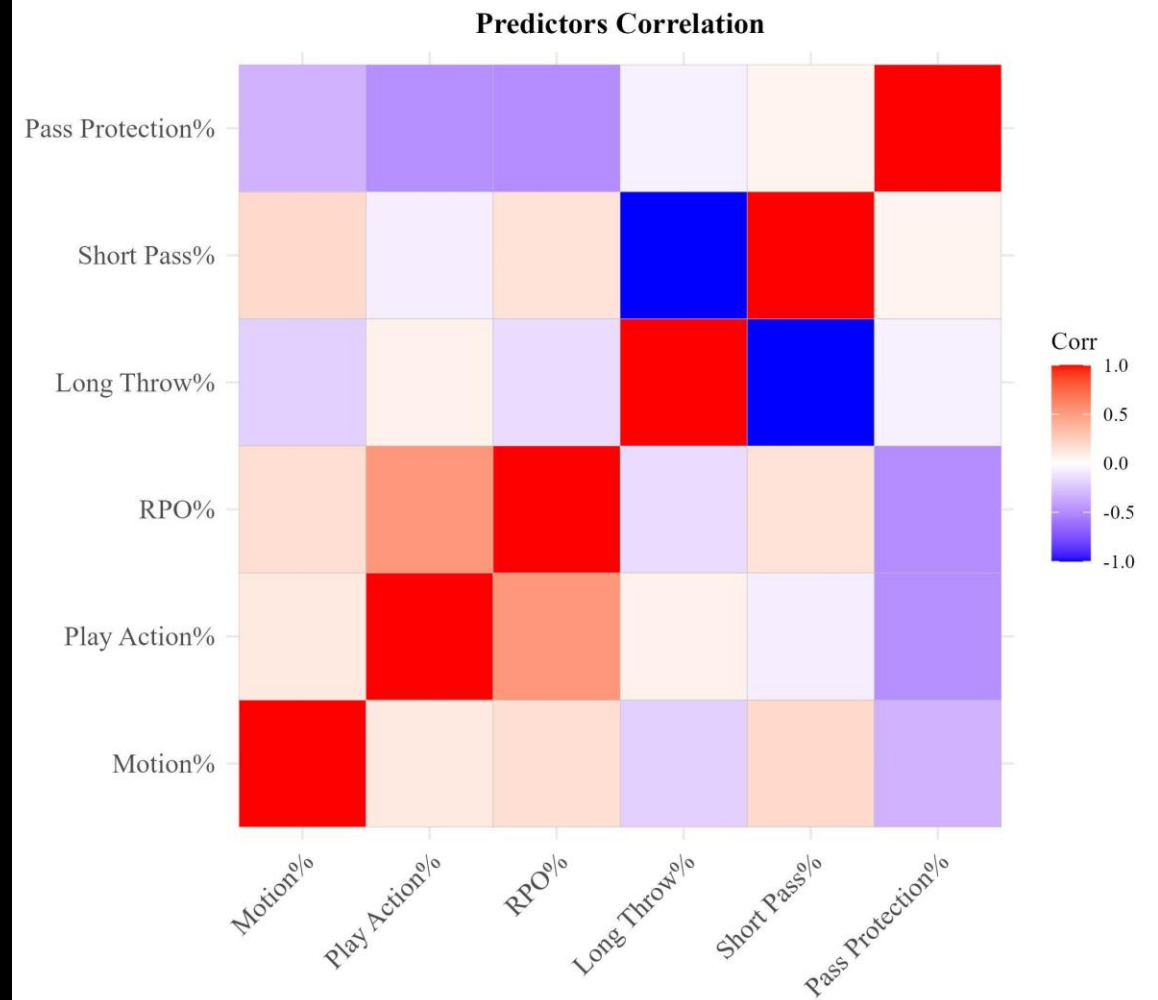
SCHEME 3

- MOTION HEAVY
- HIGH DROP BACK PASSES
 - GAP SCHEME

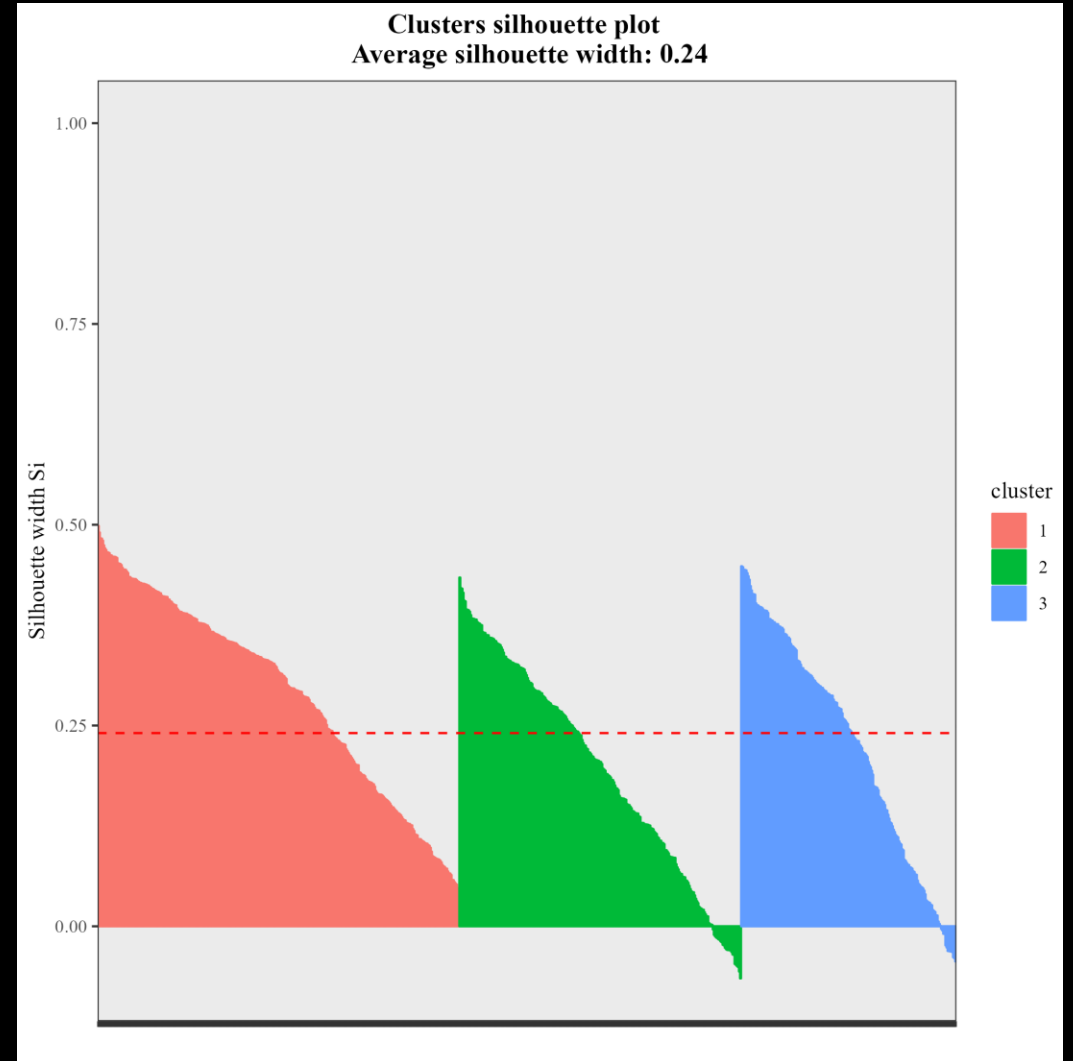
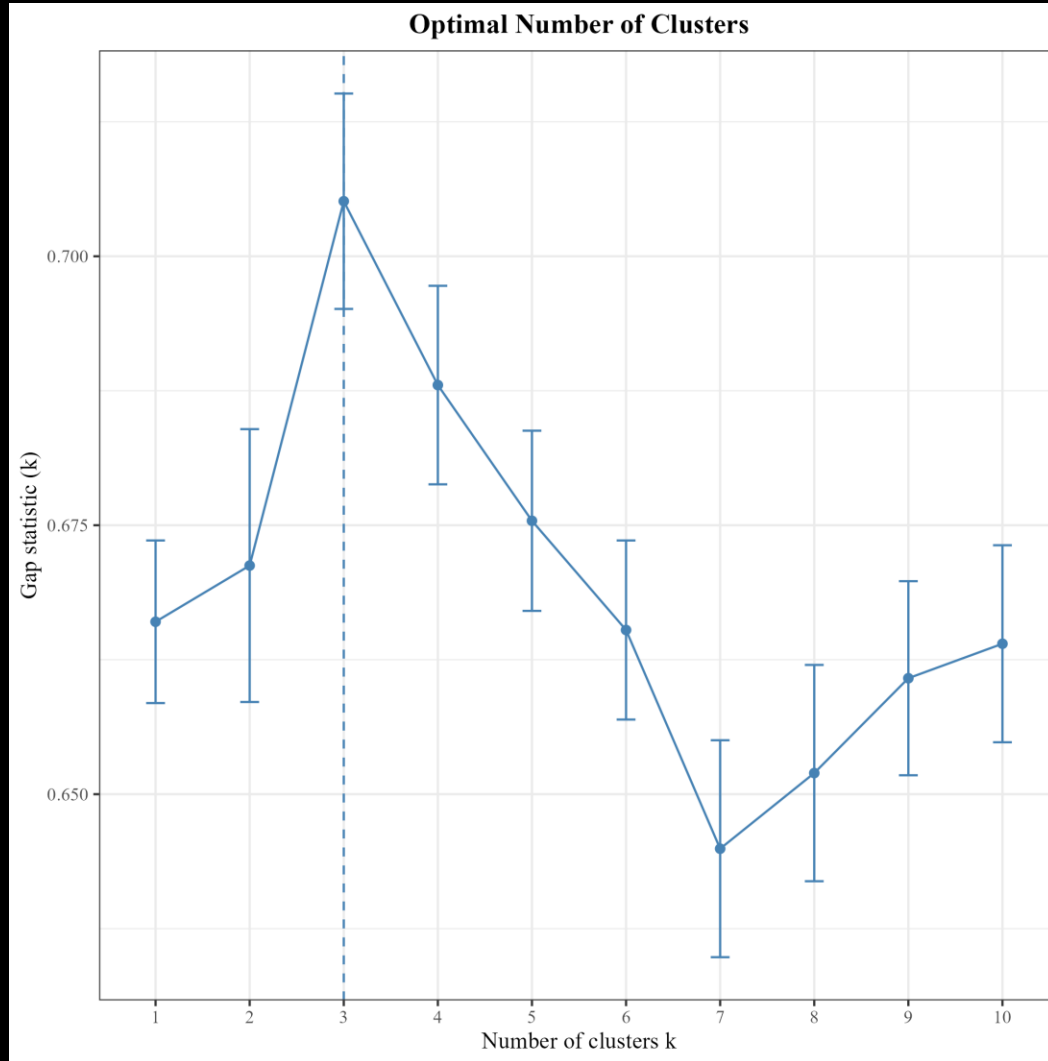
Cluster Overview



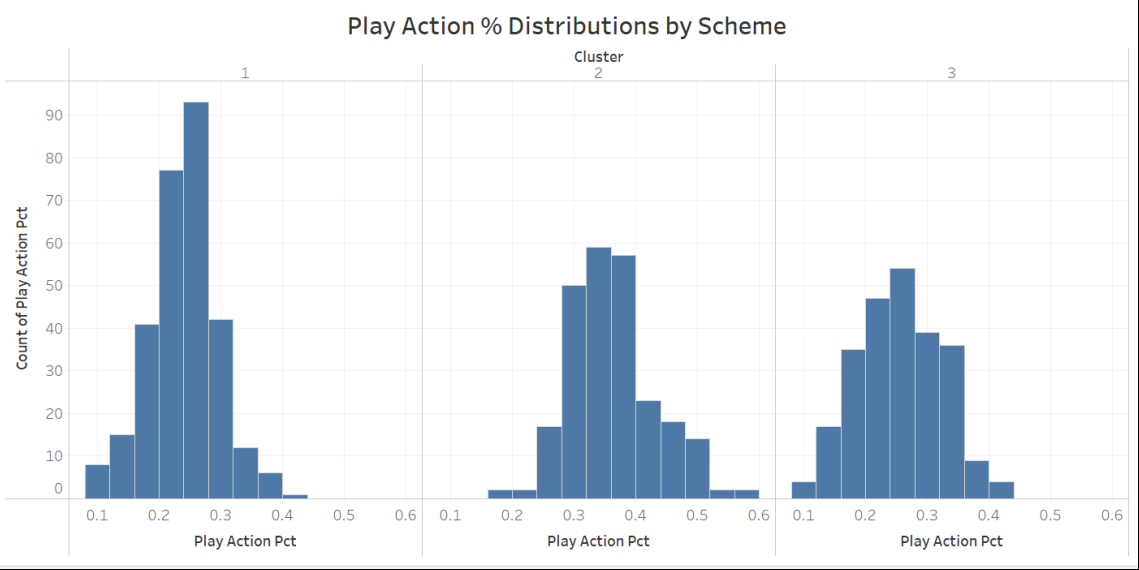
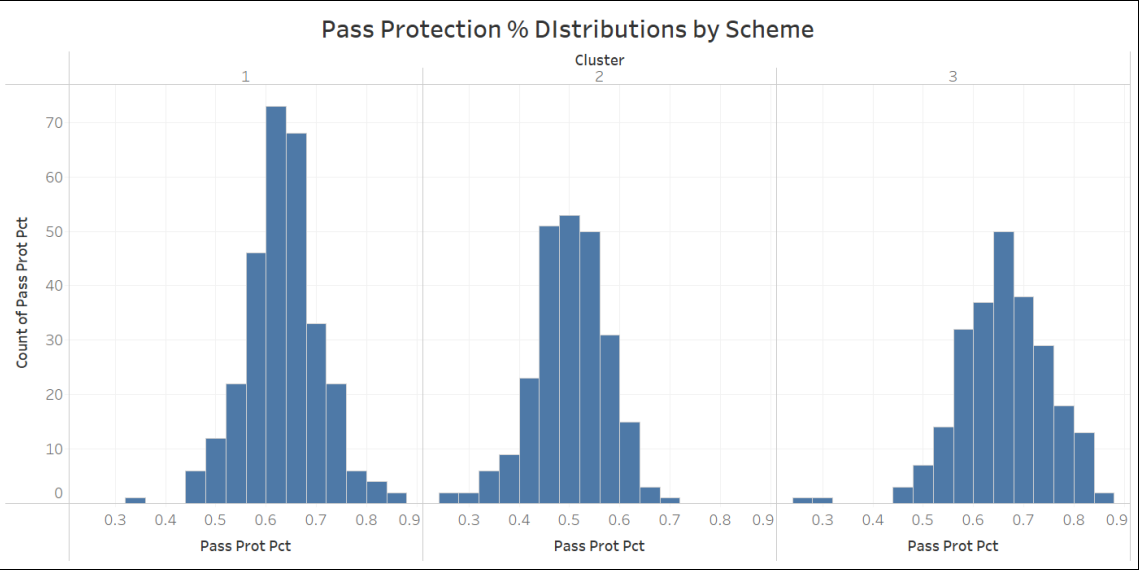
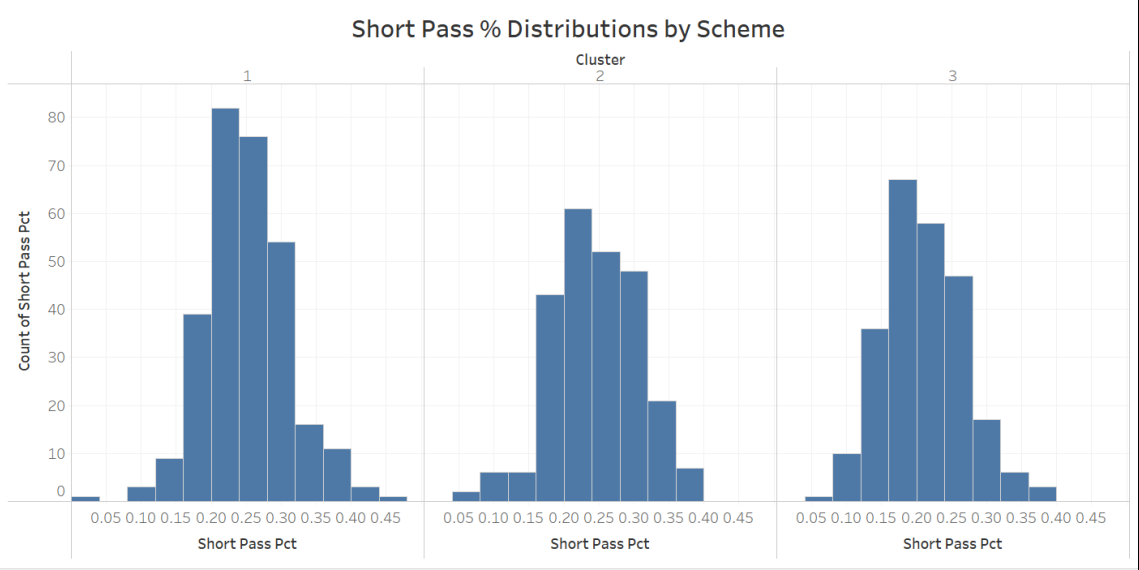
Cluster Predictors



Cluster Performance

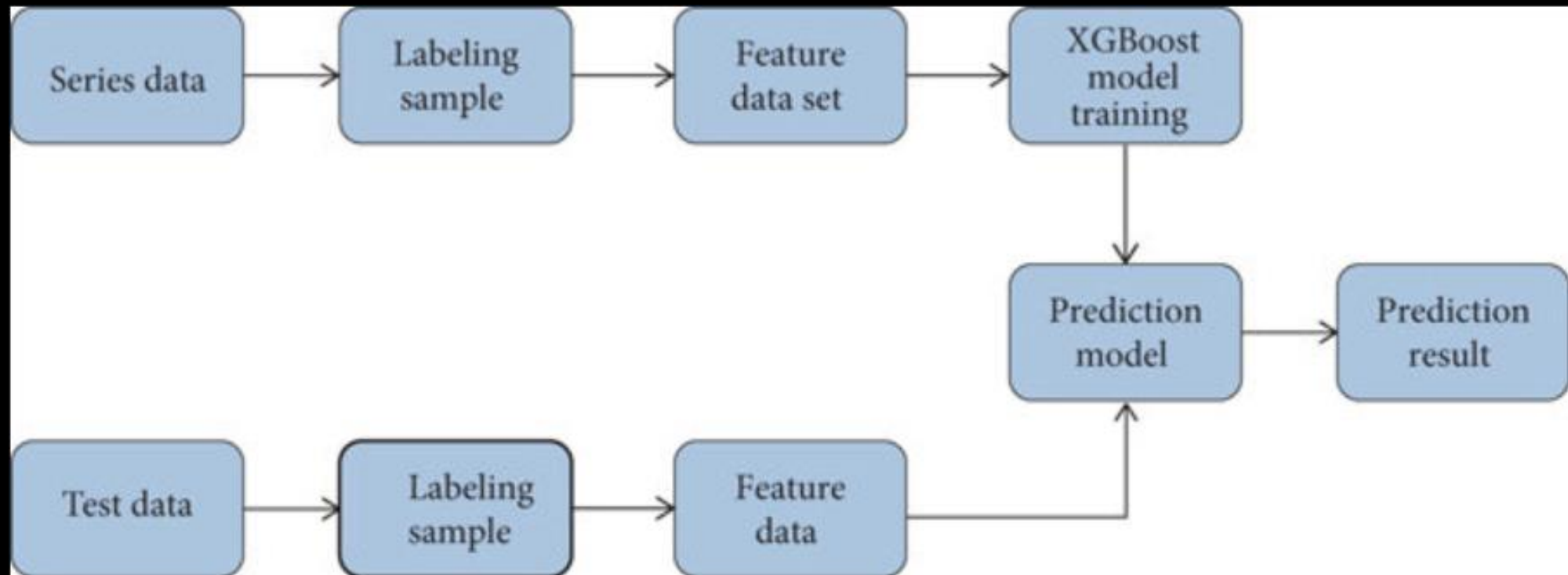


Predictor Distributions by Scheme

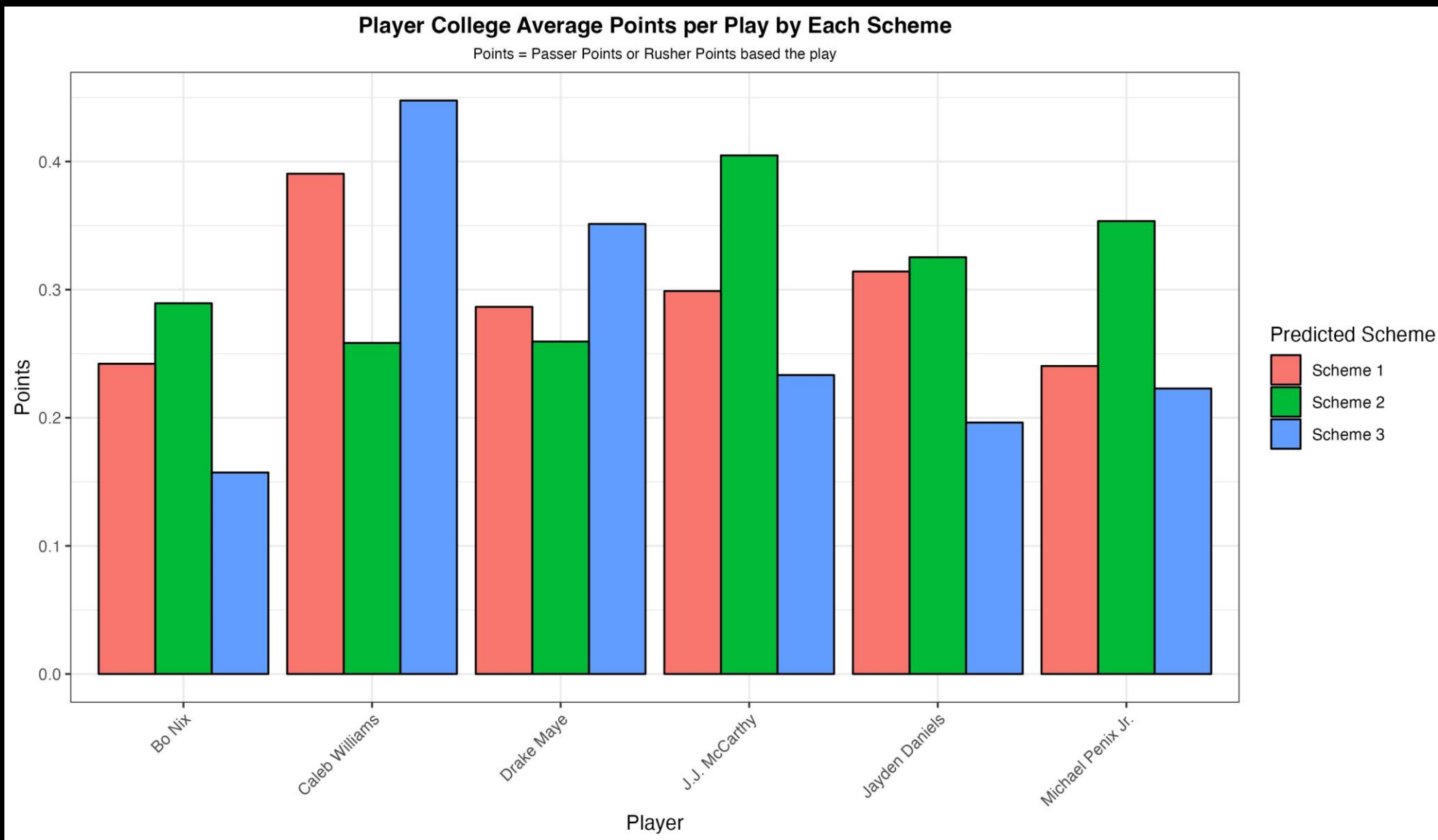


XGBoost

- Classification Model
- SIS NFL Points Model



Scheme Analysis



Scheme 1 Projections

SIS Points per Play and Expected Points Per Play in Scheme 1

PLAYER		PREDICTED SCHEME	SIS POINTS	YEAR 1 PREDICTED POINTS	YEAR 2 PREDICTED POINTS	YEAR 3 PREDICTED POINTS
Caleb Williams		Scheme 1	0.3905143	0.046065755	0.1448188	0.1448188
Jayden Daniels		Scheme 1	0.3141713	0.113171607	0.1686175	0.1686175
J.J. McCarthy		Scheme 1	0.2989240	0.008205133	0.1069582	0.1069582
Drake Maye		Scheme 1	0.2865762	0.324826330	0.2413235	0.2413235
Bo Nix		Scheme 1	0.2421651	-0.411253422	-0.3593771	-0.3593771
Michael Penix Jr.		Scheme 1	0.2404131	0.102024972	0.1674623	0.1674623

Drake Maye





SIS Scheme 1 Points: 0.287
Year 3 Scheme 1 Projection: 0.241

Scheme 1 Possible Fits



Scheme 2 Projections

SIS Points per Play and Expected Points Per Play in Scheme 2

PLAYER		PREDICTED SCHEME	SIS POINTS	YEAR 1 PREDICTED POINTS	YEAR 2 PREDICTED POINTS	YEAR 3 PREDICTED POINTS
J.J. McCarthy		Scheme 2	0.4047950	0.135352060	0.14184706	0.14184706
Michael Penix Jr.		Scheme 2	0.3535139	0.089469790	0.12952562	0.12952562
Jayden Daniels		Scheme 2	0.3253044	0.092148997	0.10138269	0.10138269
Bo Nix		Scheme 2	0.2893611	0.026306206	0.09174360	0.09174360
Drake Maye		Scheme 2	0.2595049	-0.028355338	0.02097779	0.02097779
Caleb Williams		Scheme 2	0.2583932	-0.005436717	0.03042918	0.03042918

J.J. McCarthy









SIS Scheme 2 Points: 0.405
Year 3 Scheme 2 Projection: 0.142

Scheme 2 Possible Fits



Scheme 3 Projections

SIS Points per Play and Expected Points Per Play in Scheme 3

PLAYER		PREDICTED SCHEME	SIS POINTS	YEAR 1 PREDICTED POINTS	YEAR 2 PREDICTED POINTS	YEAR 3 PREDICTED POINTS
Caleb Williams		Scheme 3	0.4476371	0.21687679	0.26742169	0.26742169
Drake Maye		Scheme 3	0.3512970	0.08946979	0.10597610	0.10597610
J.J. McCarthy		Scheme 3	0.2333339	0.15484586	0.17809702	0.17809702
Michael Penix Jr.		Scheme 3	0.2228168	0.28793487	0.26013938	0.26013938
Jayden Daniels		Scheme 3	0.1962751	-0.01262163	0.01062953	0.01062953
Bo Nix		Scheme 3	0.1572680	0.06942073	0.09267189	0.09267189

Caleb Williams



SIS Scheme 3 Points: 0.448
Year 3 Scheme 3 Projection: 0.267

Scheme 3 Possible Fits



2023 Bears: Scheme 2

Jayden Daniels



SIS Scheme 2 Points: 0.325
Year 3 Scheme 2 Projection: 0.101

Possible Fits



Michael Penix Jr.



SIS Scheme 3 Points: 0.223
Year 3 Scheme 3 Projection: 0.260

Best Possible Fits



Bo Nix

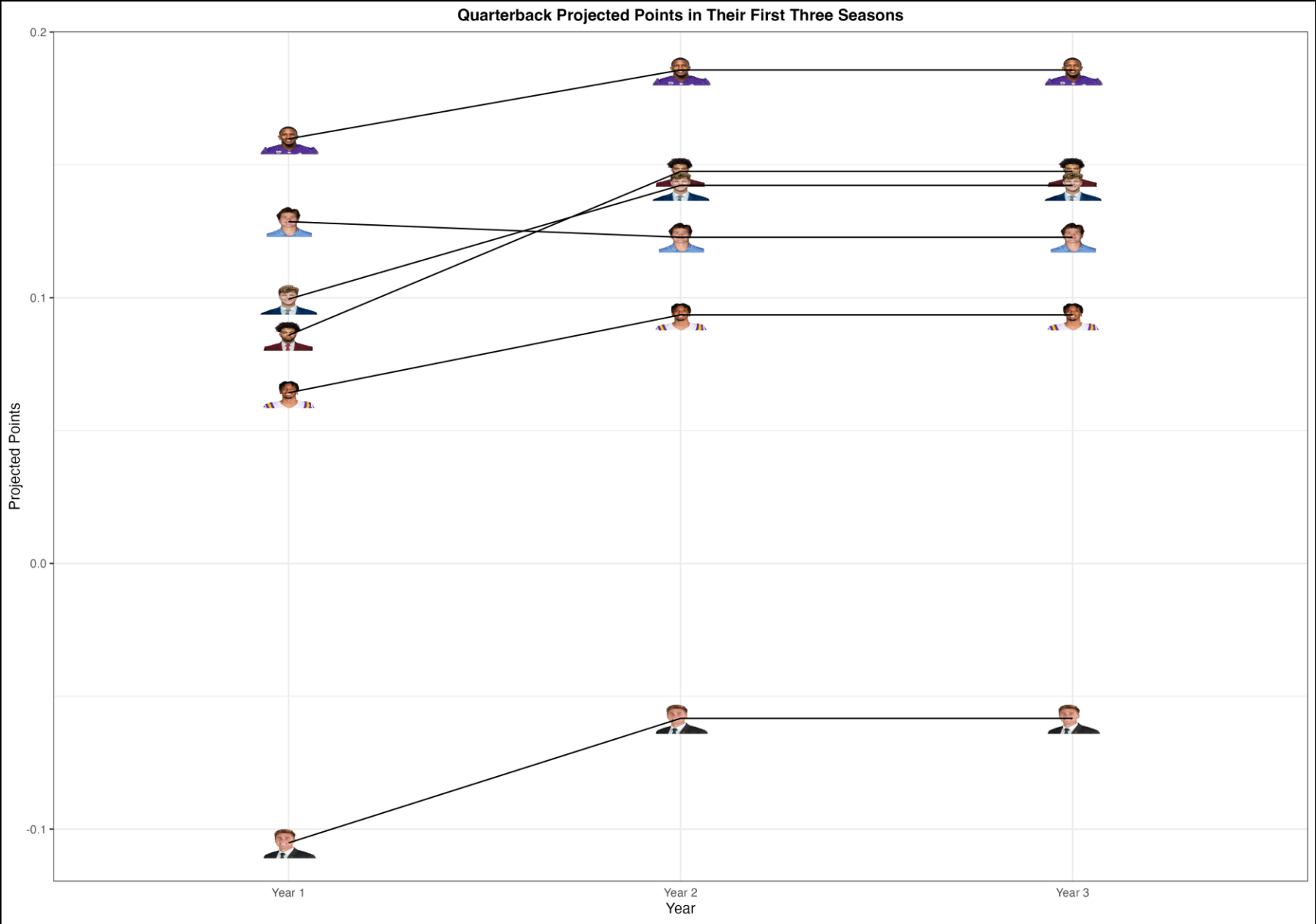


SIS Scheme 3 Points: 0.157
Year 3 Scheme 3 Projection: 0.093







Best Possible Fits



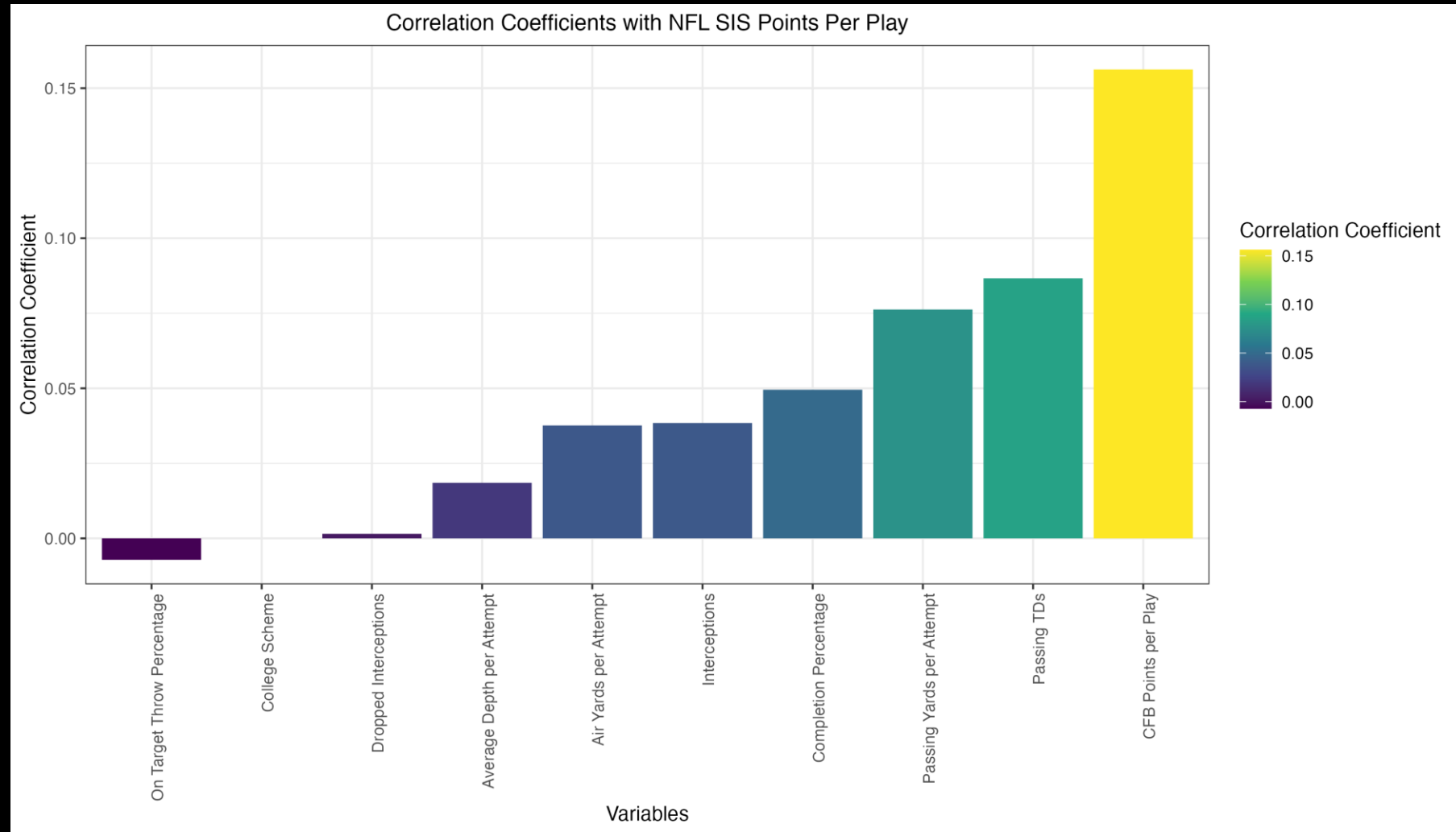
Risk Profile Analysis



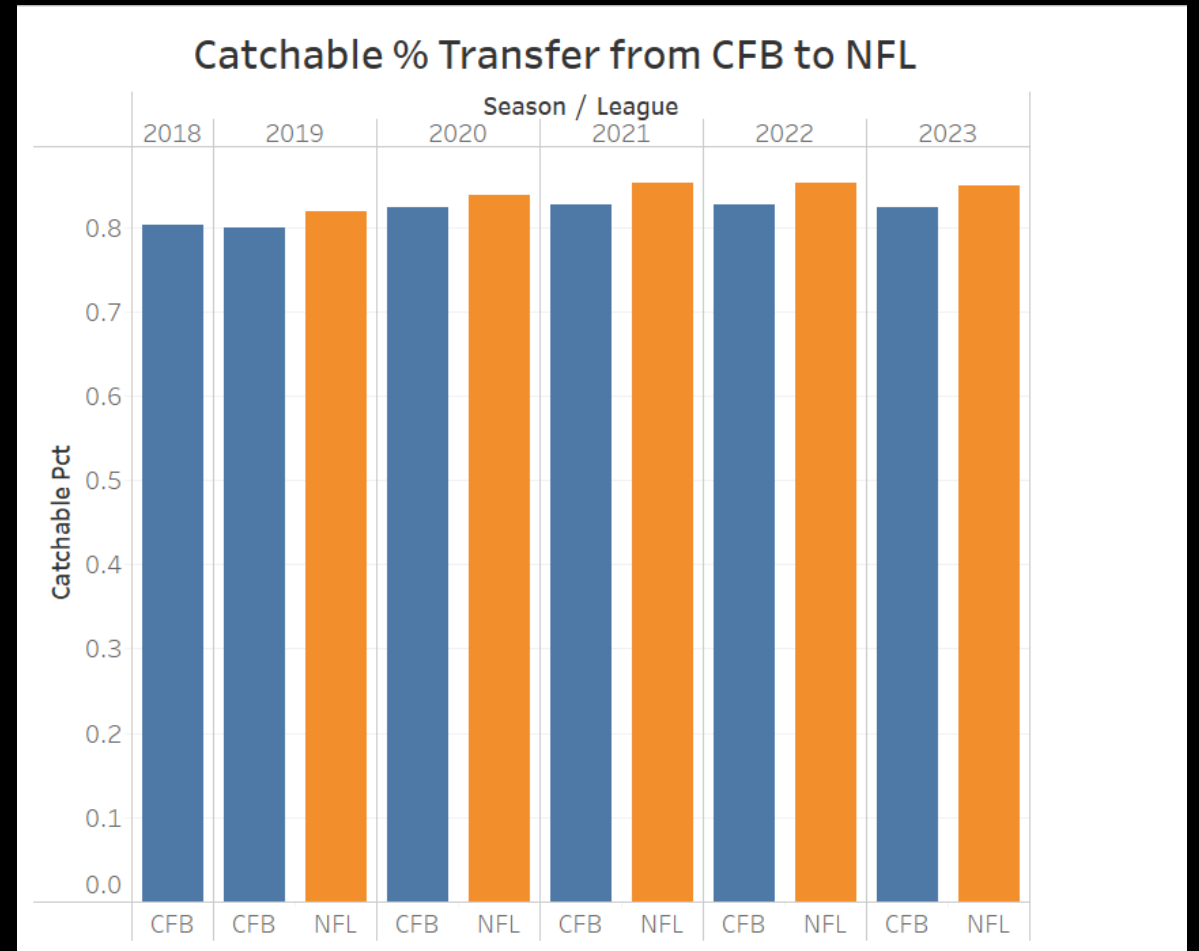
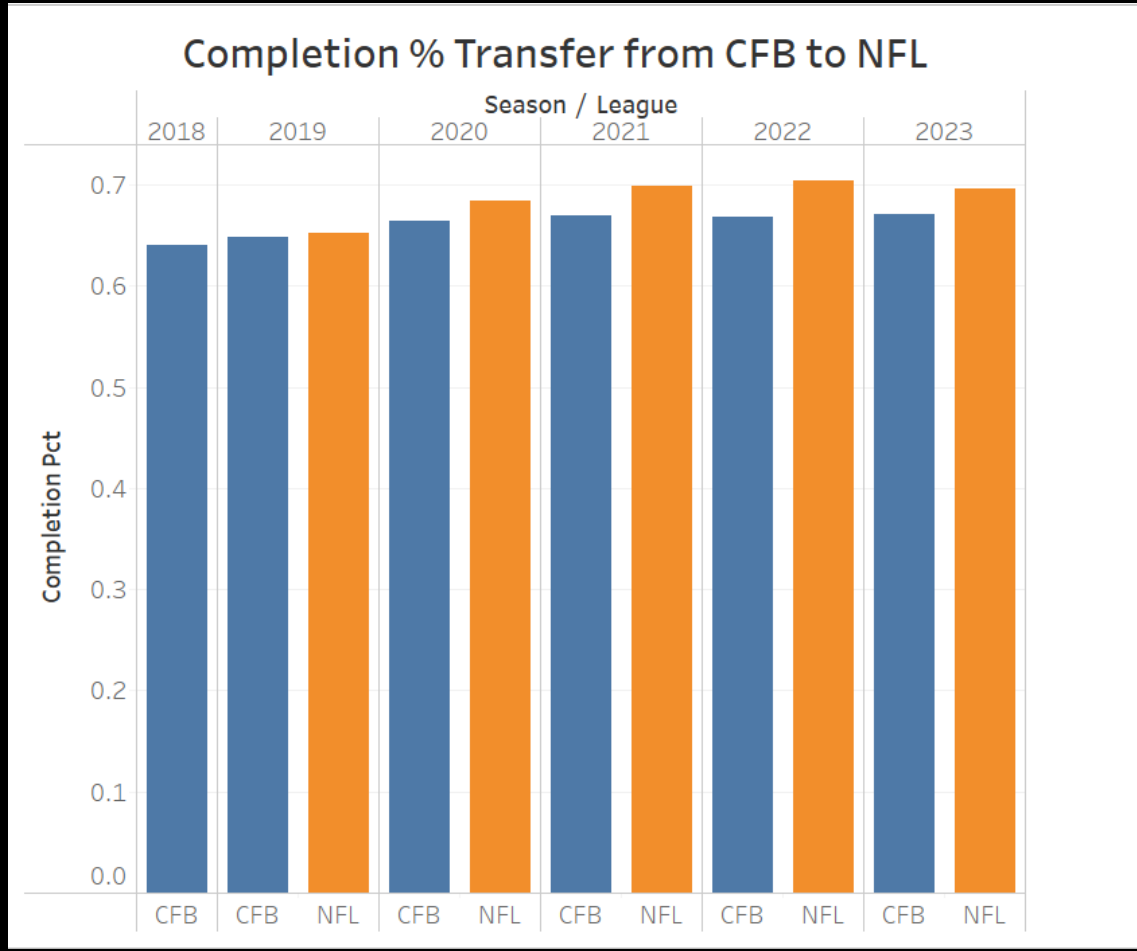
Risk Profile Analysis

Player Average Point Performance					
PLAYER		AVERAGE SIS POINTS	AVERAGE YEAR 1 PREDICTED POINTS	AVERAGE YEAR 2 PREDICTED POINTS	AVERAGE YEAR 3 PREDICTED POINTS
Caleb Williams		0.3655149	0.08583528	0.14755656	0.14755656
J.J. McCarthy		0.3123510	0.09946769	0.14230075	0.14230075
Drake Maye		0.2991260	0.12864693	0.12275914	0.12275914
Jayden Daniels		0.2785836	0.06423299	0.09354325	0.09354325
Michael Penix Jr.		0.2722479	0.15980988	0.18570911	0.18570911
Bo Nix		0.2295981	-0.10517550	-0.05832055	-0.05832055

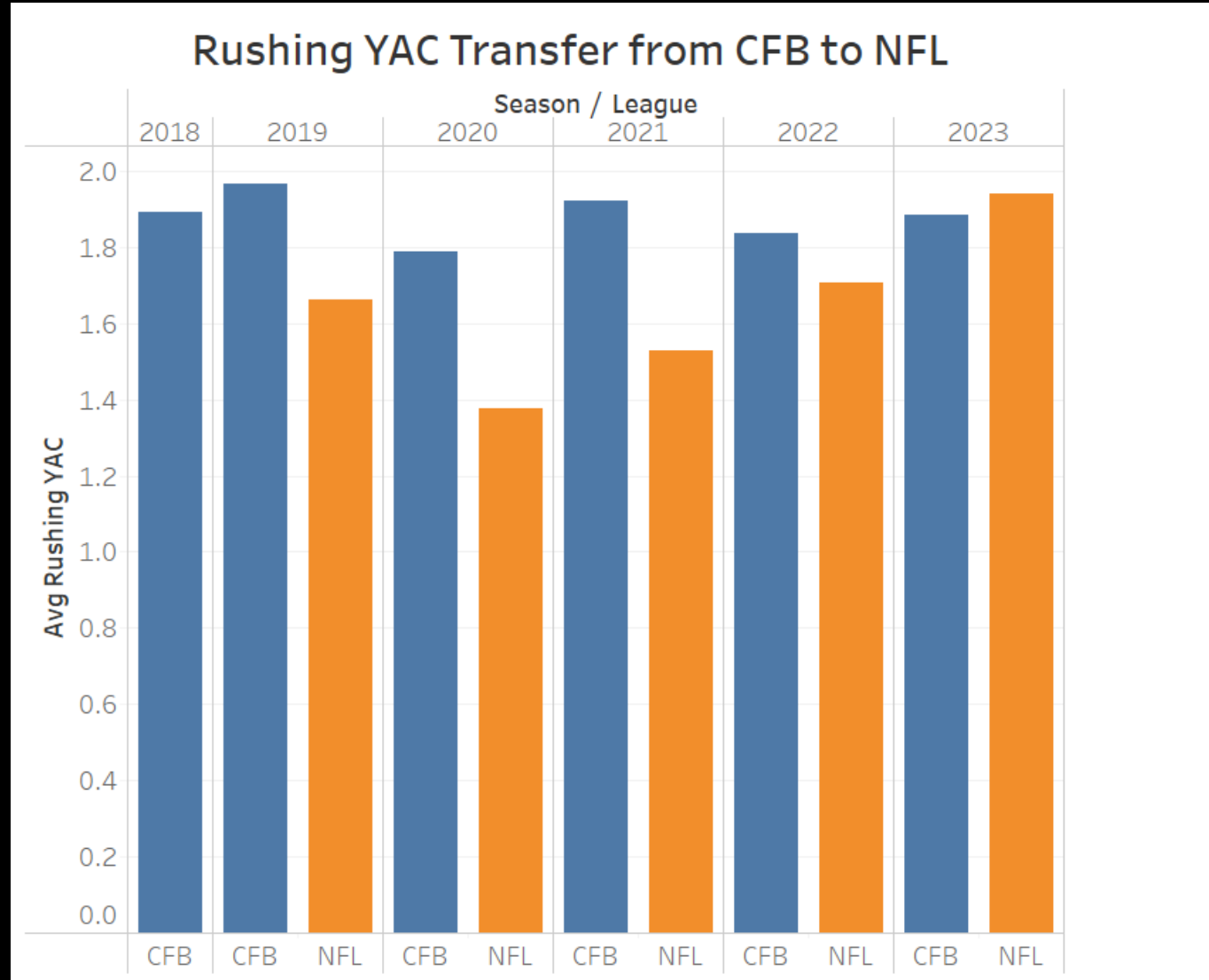
Transferable Results



Transferable Traits



Trending Transferable Traits



Possible
Improvements

Data Selection

Analysis Metric

Feature Selection

Iterative Refinement

Alternative Methods

Questions?

