

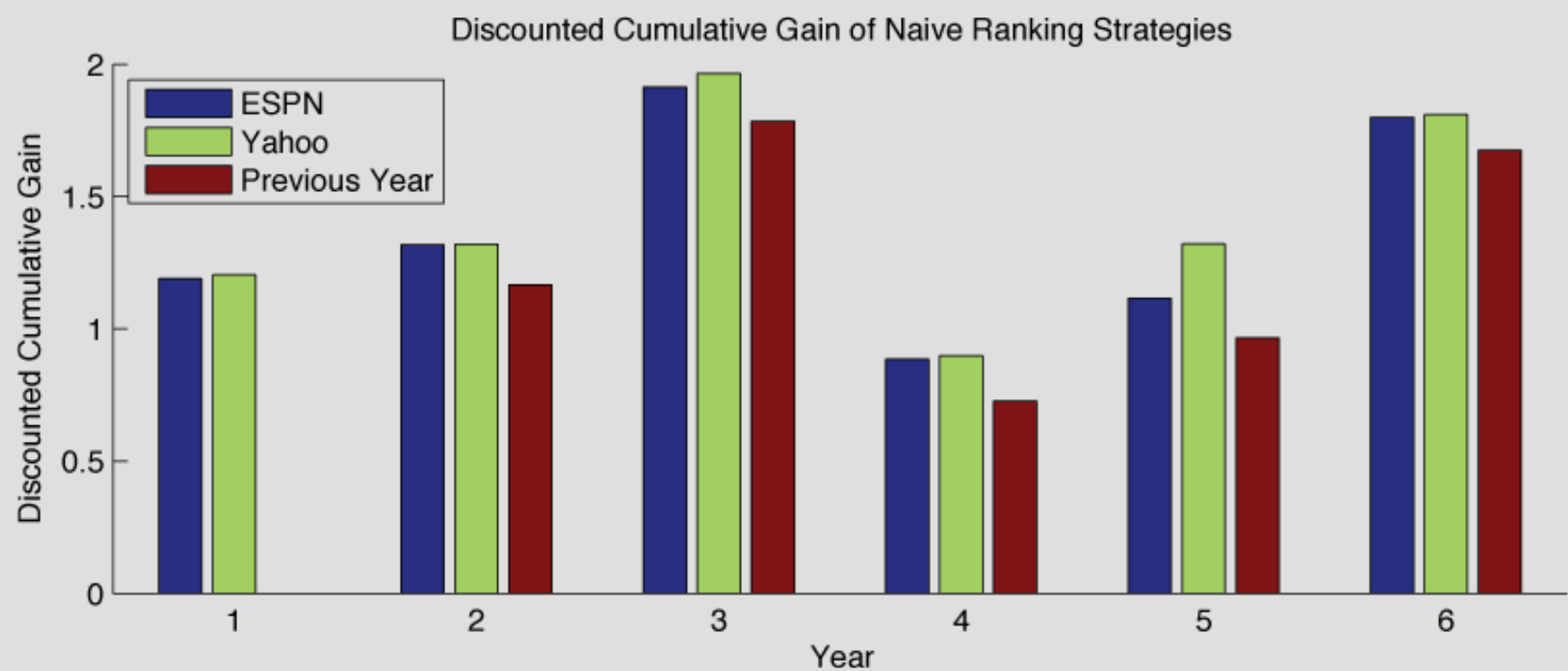
Predicting Fantasy Football Performances

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Motivation

Data



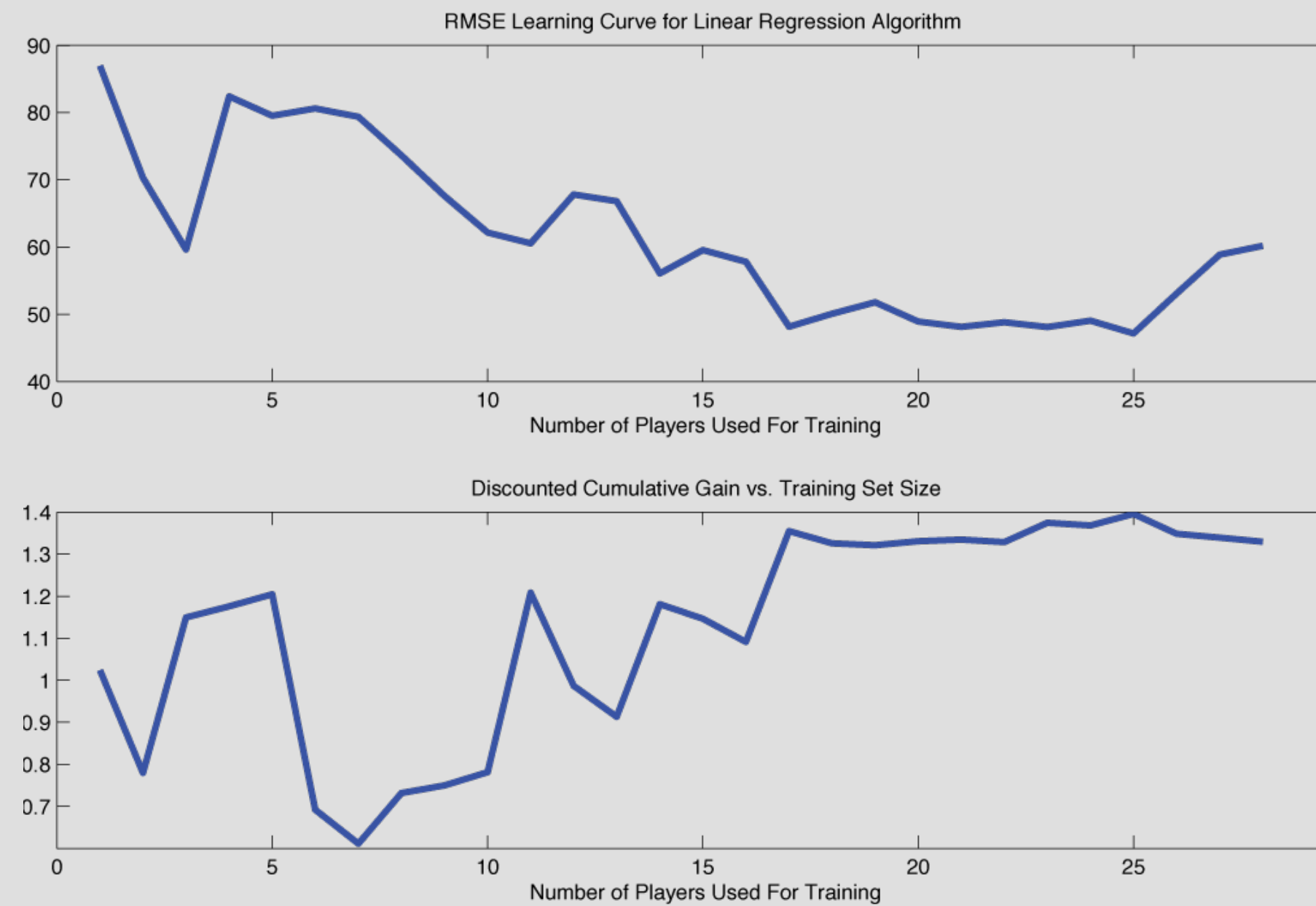
| Expert | Discounted Cumulative Gain for 2012 Predictions |
|-----------------------------|---|
| ESPN Expert (Matthew Berry) | 1.7991 |
| Yahoo Team of Experts | 1.8100 |

Methods

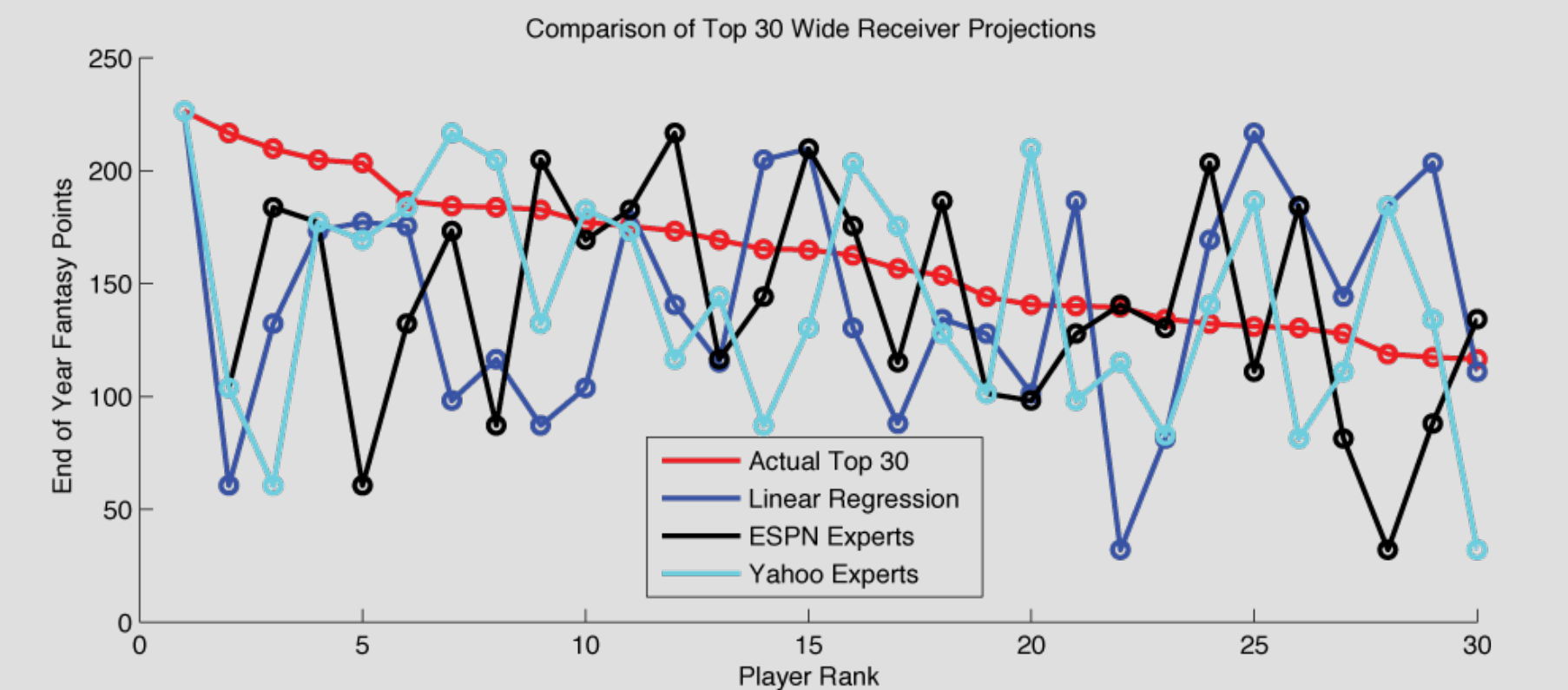
$$\beta = [w_{\text{FantasyPts}} \ w_{\text{RecYds}} \ w_{\text{RecTDs}} \ w_{\text{Targets}} \ w_{\text{Catches}} \ w_{\Delta 1\text{yrRecYds}} \ w_{\Delta 1\text{yrRecTDs}} \ w_{\Delta 2\text{yrRecYds}} \ w_{\Delta 2\text{yrRecTDs}} \ w_{\Delta 3\text{yrRecYds}} \ w_{\Delta 3\text{yrRecTDs}} \ w_{\text{ESPN}} \ w_{\text{Yahoo}}]$$

$$\beta = [w_1 \dots w_L]$$

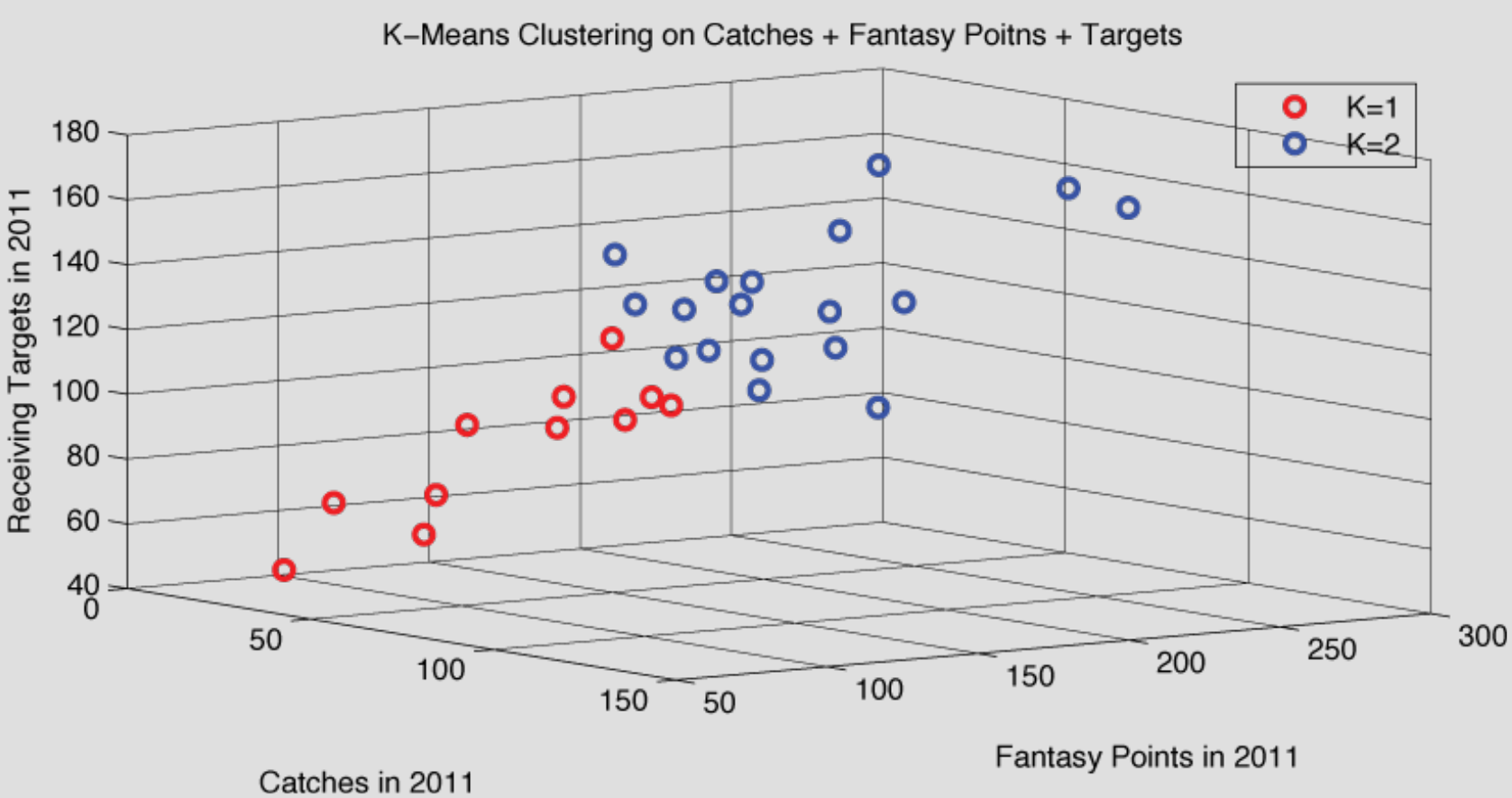
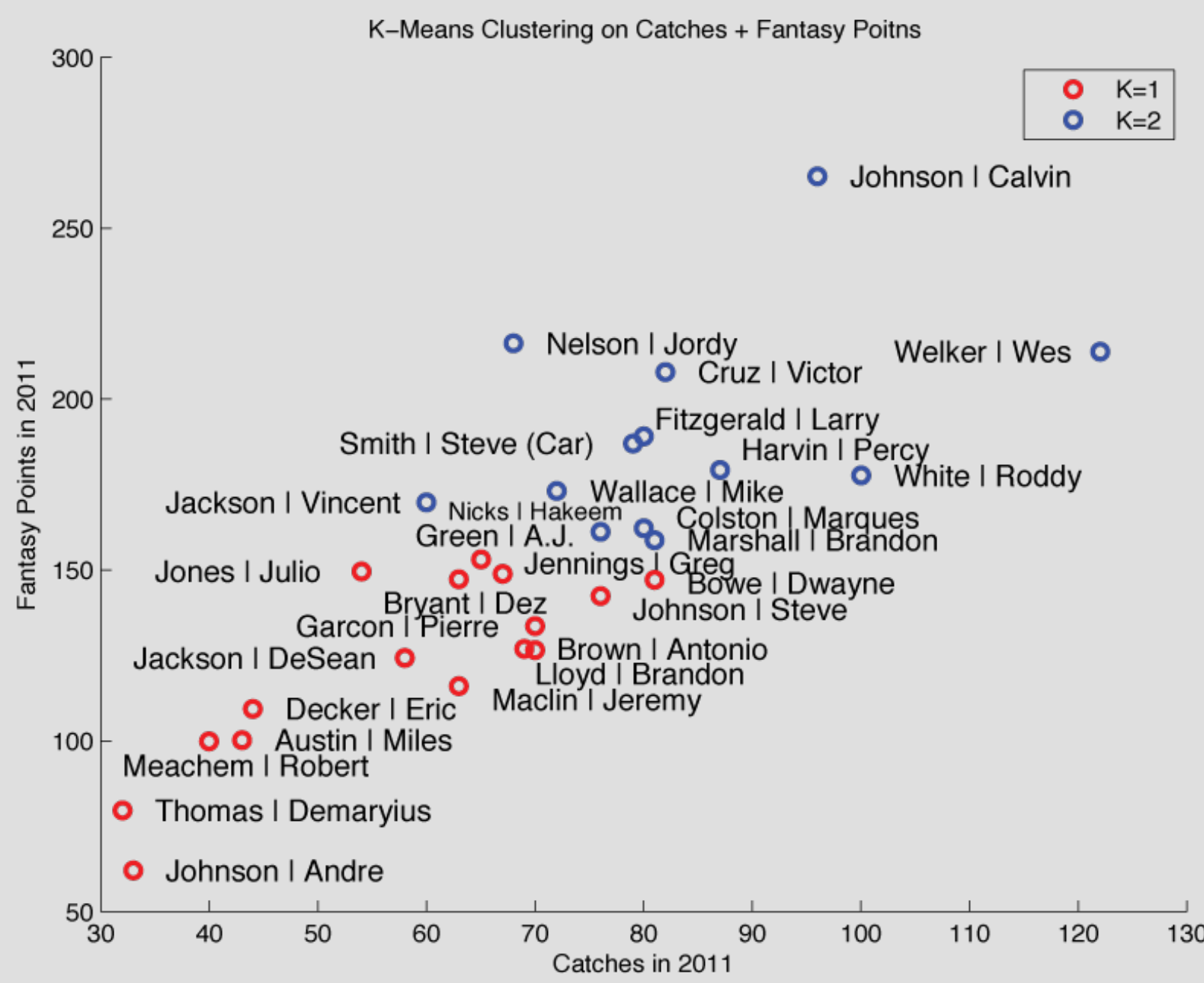
Linear Regression



| Method | β | Discounted Cumulative Gain |
|-------------|--|----------------------------|
| 13 Features | $\beta = [w_{\text{FantasyPts}} \ w_{\text{RecYds}} \ w_{\text{RecTDs}} \ w_{\text{Targets}} \ w_{\text{Catches}} \ w_{\Delta 1\text{yrRecYds}} \ w_{\Delta 1\text{yrRecTDs}} \ w_{\Delta 2\text{yrRecYds}} \ w_{\Delta 2\text{yrRecTDs}} \ w_{\Delta 3\text{yrRecYds}} \ w_{\Delta 3\text{yrRecTDs}} \ w_{\text{ESPN}} \ w_{\text{Yahoo}}]$ | 1.7179 |
| | $\beta = [0.17, 0.059, 12.91, -0.25, 0.18, -0.34, -4.82, -0.031, 0.61, 0.044, -3.36, -1.05, 1.03]$ | |
| 7 Features | $\beta = [w_{\text{FantasyPts}} \ w_{\text{RecYds}} \ w_{\text{RecTDs}} \ w_{\Delta 1\text{yrRecYds}} \ w_{\Delta 1\text{yrRecTDs}} \ w_{\text{ESPN}} \ w_{\text{Yahoo}}]$ $\beta = [-0.18, 0.12, 11.10, -0.056, -3.35, -2.27, 1.67]$ | 1.7722 |
| 6 Features | $\beta = [w_{\text{FantasyPts}} \ w_{\text{RecYds}} \ w_{\text{RecTDs}} \ w_{\Delta 1\text{yrRecYds}} \ w_{\Delta 1\text{yrRecTDs}} \ w_{\text{ESPN}}]$ $\beta = [0.10, 0.079, 10.23, -0.06, -3.09, -0.403]$ | 1.7621 |
| 3 Features | $\beta = [w_{\text{FantasyPts}} \ w_{\text{RecYds}} \ w_{\text{RecTDs}}]$ $\beta = [1.72, -0.061, -5.08]$ | 1.7806 |
| 2 Features | $\beta = [w_{\text{FantasyPts}} \ w_{\text{RecTDs}}]$ $\beta = [1.15, -2.031]$ | 1.7896 |
| 2 Features | $\beta = [w_{\text{FantasyPts}} \ w_{\text{RecYds}}]$ $\beta = [0.92, 0.019]$ | 1.7863 |

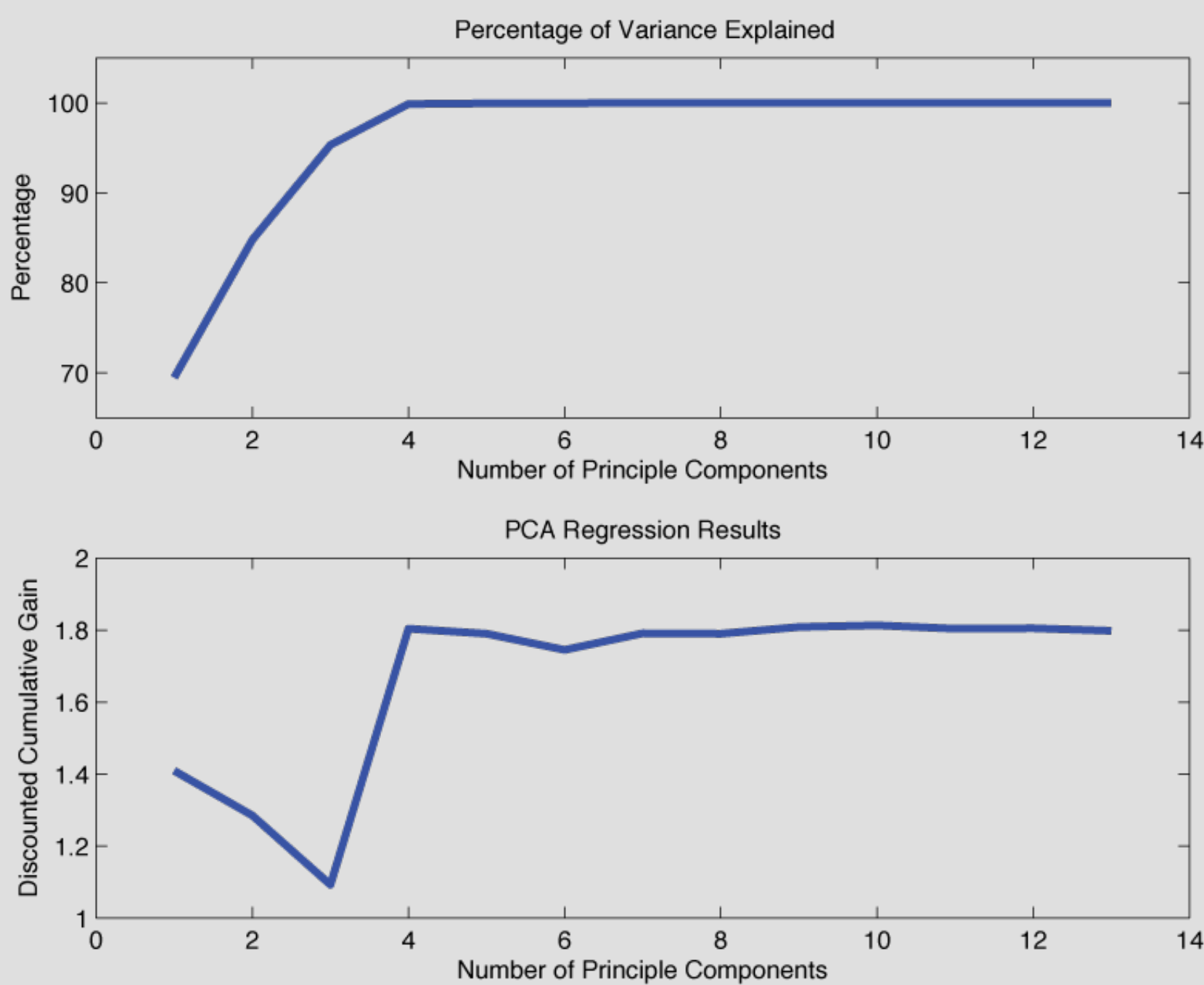


K-Means Mixture Model



| # Mixtures | K Means Features | DCG (6 Features) | DCG (2 Features) |
|------------|--------------------------------------|------------------|------------------|
| 2 | Catches Fantasy Points | 1.7601 | 1.8063 |
| 2 | Fantasy Points | 1.7601 | 1.7925 |
| 3 | Fantasy Points | 1.3621 | 1.7880 |
| 2 | Receiving Targets | 1.2053 | 1.7877 |
| 2 | Catches Fantasy Points Targets | 1.1887 | 1.7863 |
| 2 | Catches | 1.1811 | 1.7814 |
| 2 | Touchdowns | 1.1107 | 1.7747 |
| 2 | Receiving Yards | 1.0857 | 1.4428 |

PCA Regression



| Number of Principle Components | Discounted Cumulative Gain |
|--------------------------------|----------------------------|
| 4 | 1.8040 |
| 10 | 1.8132 |

Conclusion

Show ESPN, Yahoo, My best, Actual. Then color code it

References