Responses to the Mariners 2025 Analytics Intern Problem Set

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Problem 1: Predicting Air Out Probability of Batted Balls

Text here

Data

Notes:

1. include horz exit angle as a 2nd-degree polynomial to capture non-linearities. (intuitively: the probability of an airout goes to zero as the ball flies straight into foul territory) - reference histogram
2. vertical exit angle and exit speed are more informative when combined. For instance, a ball hit at a relatively high exit angle but low exit speed is much more likely to be a fly out than a ball hit at the same exit angle but with a very high exit speed.

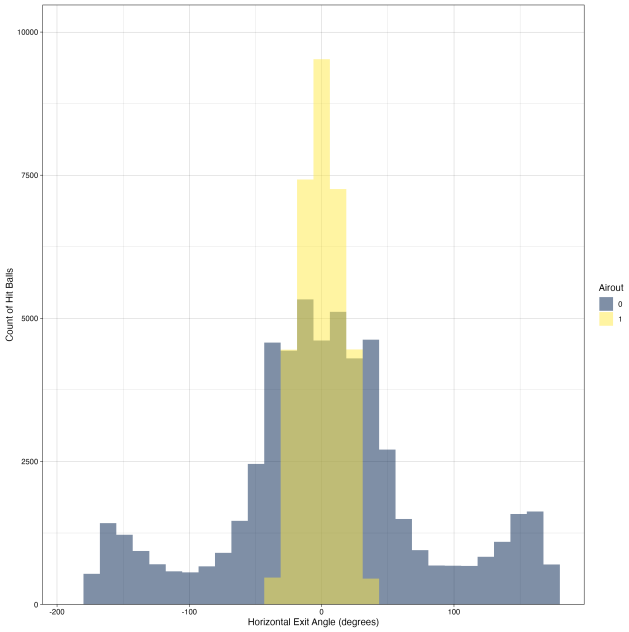

Figure 1: Count of Hit Balls by Horizontal Exit Angle

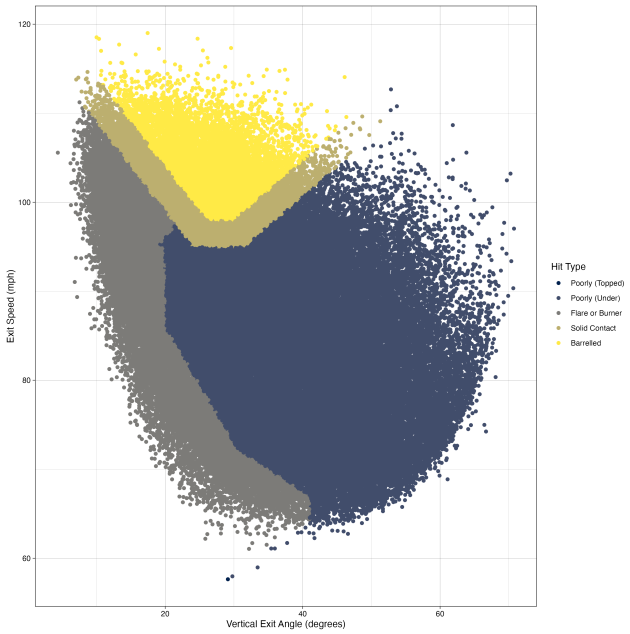

Figure 2: Hit Type by Exit Speed and Vertical Exit Angle

Modeling

Notes here

Results

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Problem 2: Report on Player 15411's Outfield Defense

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Problem 3: A Recent Mistake

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