AI Modeling for Auburn University Baseball Team

User Documentation

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# System Metaphor

Our system involves the creation of a specialized system tailored for the Auburn University Baseball Coaching staff, with the primary objective being the facilitation of easy access to specific statistics concerning pitcher-batter combinations. This system is envisioned to function as the "brain" of the coaches, serving as a central repository of essential data and insights. Our aspect of this system specifically revolves around pitching metrics and allowing the coaches to visualize each player on the roster, thus enabling them to use this information to make decisions.

Key features of our contribution to the system include providing comprehensive pitching performance metrics, historical outcomes, and pitch preferences. Ultimately, the system aims to empower the coaching staff with valuable insights and data-driven decision-making capabilities, thereby optimizing pitcher performance and enhancing the team's overall competitive edge on the field.

# Coach Usage

We intend for coaches to use the system in a way that supplements their everyday lives. The primary goal of the system as a whole is to have a central repository for data, insights, and metrics for the Auburn University Baseball Team, as well as other teams in the league.

For our heat maps specifically, they are fairly intuitive. Each pitcher will have heat maps corresponding to the different types of pitches that they throw. These categories will then have 3 heat maps representing all pitches for that category, successful locations, and a pitch ratio. The first heat map for each category, all pitches heat map, represents the frequency that a ball was thrown in a certain location. The second heat map, successful pitches, highlights the areas where the pitch was deemed a strike; either by the batter swinging, the location, or by a foul ball call. Finally, the third heat map is the pitch ratio. It shows the percentage (ratio) of pitches thrown in a certain area that were successful. Areas that are darker red represent a higher success rate in that location. These three heat maps are generated for each type of pitch that pitcher throws, giving coaches an inside look at how their players are doing.

From these, coaches can develop specialized training programs to alter a pitcher’s frequently located balls. We believe this system will be useful in keeping players and coaches on the same page regarding their performance.

# Player Usage

For players, we believe the system can be used as a way to examine their previous performance and create a training plan for what they can do to improve their personal skills. Because the system shows past as well as present data, they can view their own historic trends, in addition to how they are performing currently. In terms of our contribution specifically, players can use the heat maps to visualize where they are throwing during games.

For example, if a pitcher thinks he favors the upper right corner of the strike zone, he can view his heat map on his player page and make adjustments if necessary. This ability to view the data in a way that makes sense and is intuitive is key to improving performance and identifying strengths and weaknesses.

Additionally, players can utilize the various heat maps we have created. If they, for example, are curious about how many of their curveballs were successful (strikes), then they can view the corresponding heat map on their player page. We also included a pitch ratio heat map for each type of pitch. This heat map shows the percentage (ratio) of pitches thrown in a certain area that were successful. Areas that are darker red represent a higher success rate in that location.