36-493 Sports Analytics Capstone Potential Projects
Spring 2020

- *General: Scheduling, Winning, Resources*

  In regards to scheduling,

  1. Travel distance vs. win percentage/performance for away contests (three hour v. five hour ride, bus v. plane, weekday or weekend).
  2. Performance Midweek vs. weekend contests
  3. Contests during testing periods (midterms, finals, etc.)
  4. Spring break trips, NCAA weekends Home v. away
  5. Performance in games immediately following long travel (5 hour bus ride, emory, washU, Chicago planes). How does UAA travel impact our athletes?
  6. Teams travel distance vs. GPAs, win percentage, goals per game et.
  7. Correlations between resources and performance (gear $, travel radius, assistant coaches)

- *Softball*

  1. Monthly Hitting Heat Map (Larger Class Project): Using raw data from Diamond Kinetics, construct an app that will synthesize the data into a heat map for the players to use to track their hitting progression to show where their hot and cool zones are based on their ability to hit the ball well. Diamond Kinetics data will provide applied power, distance in the zone, hand speed, etc.
  2. Pitcher Efficiency: Using reports that we generate (pitching chart that charts every pitch thrown in a game and summary chart that adds up all of the pitches and summarizes the game) and game play-by-play generated by SIDs, create an output that would graphically represent the efficiency of our pitching staff on the season (breakdown by pitch, by counts, runners in scoring position, etc.)
  3. Break Even Percentages: Replicate DI data to get break even percentage charts for DIII in same scenarios. Would also like this for UAA opponents if data is available.

- *Golf:*

  Summarize/characterize information about the player practices to assess performance, trends, etc. Includes stroke results from Putting, Fairways, Greens, Approach Shots, Locations, TimeStamps, PlayerIDs, Scores, etc

- *Aquatics:*

  Design and build tracking analytics for aquatics/pool area for usage. (Paper-pen data exist now). Integrating overall pool usage by combining data sets from teams, clubs, intramural groups, and rec swim. Summarize/characterize/model the usage.

- *Tennis:*

  Using video of spring matches to record tennis match statistics; creation of stat sheets for players; preparation for a larger USTA/CMU project that is kicking off soon.