



# Sports Analytics III

Produced by Dr. Mario  
UNC STOR 538

# Industry Past

- Sports Analytics Use Survey (2013)
- Sample of 27 People (NFL, MLB, NBA, EPL)
- How Many Different Sources?
  - 1-2 (6.7%)
  - 3-4 (33.3%)
  - 5-6 (13.3%)
  - >6 (46.71%)



# Industry Past

- How Much Data is Centralized?
  - All (31.3%)
  - Most (37.4%)
  - Some (31.3%)
- How Much Data is Dependent on One Person?
  - Some (50.0%)
  - Most (43.7%)
  - All Data Centralized (6.3%)



# Industry Past

- Is Data Checked for Errors?
  - Always (31.3%)
  - Usually (37.5%)
  - Sometimes (18.8%)
  - Occasionally (6.1%)
  - Rarely (6.3%)
- How Many Database Programmers are Employed?
  - 0 (37.5%)
  - 1-2 (50.0%)
  - 3-4 (0.0%)
  - >5 (12.5%)





# Industry Past

- How Many Statistical Analysts are Employed?
  - 0 (20.0%)
  - 1-2 (66.6%)
  - 3-4 (0.0%)
  - >5 (13.3%)
- Roadblock: Difficulty Identifying Strong Applicant
- Difficulty in Both Hiring and Evaluating



# Industry Past

- Clear Process for Hiring/Evaluating Analysts
  - Strongly Agree (13.3%/14.3%)
  - Somewhat Agree (13.3%/14.3%)
  - Neutral (26.7%/28.6%)
  - Somewhat Disagree (13.4%/21.4%)
  - Strongly Disagree (33.3%/21.4%)
- Analytic Resources in Line with Strategic Game Plan
  - Strongly Agree (26.7%)
  - Somewhat Agree (33.3%)
  - Neutral (33.3%)
  - Strongly Disagree (6.7%)



# Industry Past

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  - Strongly Disagree (6.7%)





# Industry Present

- Article by Russell Karp (ITProPortal.com)
  - Global Sports Industry \$600B-\$700B (KPMG)
  - Including All Business Dedicated to Sports \$1.3T
  - Global Sports Analytics Market

**\$135.23M**

2016



**\$2.43B**

2025

Projections in 2024 According to MarketWatch.com





# Industry Present

- Modern Applications of Sports Analytics
  - Helping the Team Win
    - Automated Video Analysis (Lincoln City, UK Football)
    - 3D Depth Camera (NBA)
    - Wearable Technology (NBA, NHL)
  - Improving the Fan Experience
    - Analysis of Digital Engagement
    - Sentiment in Social Media
    - Analysis of Fan Behavior in Stadium (New England Patriots)
    - Wireless Internet and Phone Apps
    - Apps Supply Game Analytics, Parking Information, Promotions, and Traffic Information to the Fans (NFL)



# Industry Present

- Modern Applications of Sports Analytics
  - Benefiting Other Stakeholders
    - Tracking Fan Behavior Outside the Stadium
    - Telecommunication, Retailers, Payment Providers, Ticket Agencies, and Sponsorships
    - Adapt to Quick Changes in Consumer Behavior
  - Optimizing the Back-Office
    - HR Practices
    - Game Scheduling
    - Supply Chain Management and Logistics
    - Marketing and Promotions
    - Procurement of Goods and Services



# Industry Present

- Modern Applications of Sports Analytics
  - Advancing Sports Gambling
    - Supreme Court Ruling Previous Statute Violated 10<sup>th</sup> Amendment (Murphy v. National Collegiate Athletic Association)
    - States Free to Legislate Gambling
    - Improvement of Gambling Products
    - Data Aggregation and Visualization for Bettors
    - Develop Daily Fantasy Sports
    - Worth Over \$5B According to Nevada Gaming Control Board (NGCB)





# Your Industry Future

- Prerequisites by Howard Hamilton (Soccermetrics)
  - Technical Skills
    - Mathematics (Linear Algebra/Probability Essential)
    - Statistics (Frequentist and Bayesian Perspectives)
    - Machine Learning (Supervised and Unsupervised)
    - Programming (R/Python, Data Structures, OOP)
    - Databases
    - Visualization
  - Socials Skills, Ethics, and the Law
  - Knowledgeable About All Aspects of the Sport



# Your Industry Future

- Real Jobs (Indeed)
  - Quantitative Sports Researcher for SIG
    - Build Statistical Forecasting Models
    - Implement Models and Simulate Outcomes
    - Demonstrated Experience with Sports Analytics Projects
    - Python, C++, Matlab and/or R
    - PhD Preferred
  - Analyst for the Cleveland Indians
    - Mission is to win a World Series (LOL)
    - Design New Strategies, Tools, and Tactics
    - Understand Statistics and Experience with Regression
    - Tableau, SQL, and R



# Your Industry Future

- Real Jobs (Indeed)
  - Part-time Faculty for Syracuse
    - Introductory Sports Science Analytics
    - Master's with 10+ Years Industry Experience
  - Strategy Analyst for Skillz Inc.
    - Accelerate the Convergence of Sports, Video Games, & Media
    - Run A/B Experiments to Optimize the User Experience
    - Lead Analytics Projects
    - Honesty in Developing and Sharing Insights from User Data
    - Experience Using Data Visualization Platforms





# Your Industry Future

- Real Jobs (Indeed)
  - Sports Statistical Analyst for CBS
    - Synthesize Sports Data and Statistics
    - Understand How Stats are Used to Make Predictions
    - Season Long and Daily Fantasy Sports Player
    - Knowledge of Sports Betting and Handicapping Stats
  - Revenue and Forecasting Associate for FanDuel
    - Forecast Daily Revenue and Historical Trends
    - Track Live Contest Performance
    - Create Dashboards and Reports for Stakeholders
    - Regression, Cohort Analysis, Clustering, A/B Testing
    - Experience with SQL, Excel, R, and/or Python



# Your Industry Future

- Real Jobs (Indeed)
  - Quantitative Ticket Trader and Analyst for SeatSnob
    - Use Analytics Platform to Identify Buying Opportunities
    - Improve and Refine Quantitative Tools
    - Bachelor's with Strong Numerical/Quantitative Skills
    - Strong in Excel
    - Knowledge of R/Python
  - Valuation & Analytics Intern at IPG360
    - Build Content Database for Quarterly Insights Report
    - Market and Industry Research Assistance
    - 3.0 GPA and Strong Software Skills (Microsoft Office)



# Your Industry Future

- Real Jobs (Indeed)
  - Associate Data Scientist for Tokio Marine HCC
    - Provide Specialized Insurance Products for Sports
    - Disciplines: Business, Math, and IT
    - Tied to Actuarial Topics and Ideas
    - Python, R, SQL, JSON, XML, C#, Excel, and VBA
    - Data Visualization Technologies
    - Bachelor's Degree





# Your Industry Future

- Conferences

- Sports Industry Networking and Career Conference, February 18-19
- MIT Sloan Sports Analytics Conference, April 8-9
- Basketball Analytics Summit, April 16
- International Conference on Sports Analytics and Performance Evaluation, June 24-25
- International Conference on Machine Learning and Data Mining for Sports, June 28-29
- Disney Data & Analytics Conference, August 17-18
- Sport & Entertainment Analytics Conference, TBD

Compiled by [statsheetstuffers.com](http://statsheetstuffers.com) and [sportsanalyticsconferences.com](http://sportsanalyticsconferences.com)





# Final Inspiration

Defense wins championships.  
Offense wins contracts.  
Be offensive.

- Mahatma Mario