

Data & Analytics in College Athletics

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Agenda

- Job functions & roles in sports analytics
- Analytics team structures
- Notre Dame Athletics Business Intelligence structure
- Real examples & projects
- Job postings, resources & considerations in sports business



Job Functions & Focus Areas

- Technical roles - heavy in technical skill sets/languages, understanding and/or building ETLs, managing data warehouses/lakes
 - Data Scientist, Sports Performance Scientist
 - Data Warehouse Developer
 - Data Engineer
- Technical/Analytics (Prep) Roles
 - Analytics Engineer
 - Data Analyst
 - Sports Performance Analyst
- “Last Mile” Roles - analyses, communications, delivery to end users, data storytelling & presentation
 - Data Analyst
 - Data Visualization Specialist
 - Business Analyst



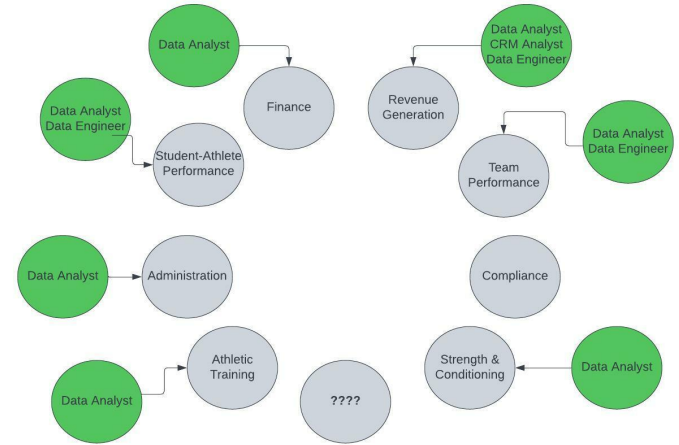
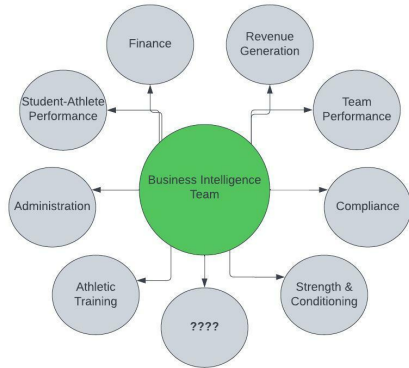
Organizations with Data Roles (College Athletics)

- College or University
 - Mid-major or small schools - broad exposure to topics and departments within college athletics - smaller staff size = an opportunity to learn more across an organization
 - Group of 5 and Power 5 - roles are usually focused on one particular department or team (business office, ticket sales, Men's Basketball) - more resources but you operate with some natural blinders on
- Partners and Vendors - the “agency” model - exposure to X number of clients who *all* do the same thing in a slightly different manner (ticketing companies, technology/platforms that support teams, sponsorship partners, etc.)
- Conferences - similar “agency” model - support fixed # of schools - balance between managing the interests of the schools, Conference goals & objectives and NCAA legislation
 - Some conferences have analytics teams that focus internal to the conference office while others directly support the member institutions



Analytics Team Structures (College/University)

- Centralized - analysts & data team sit centrally to the organization, pool resources, best practices, standards etc.
- Decentralized - analysts & data professionals sit on each functional team and support just that team

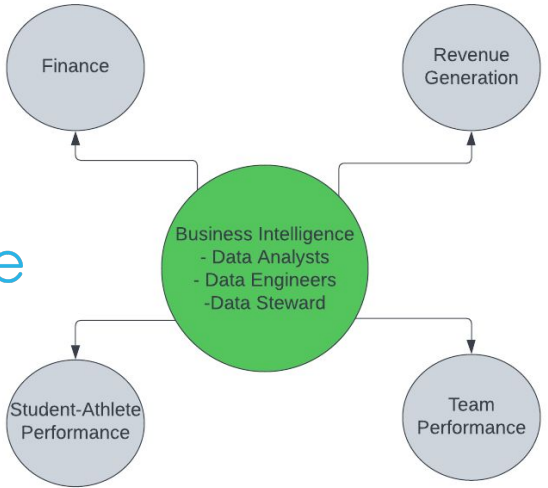
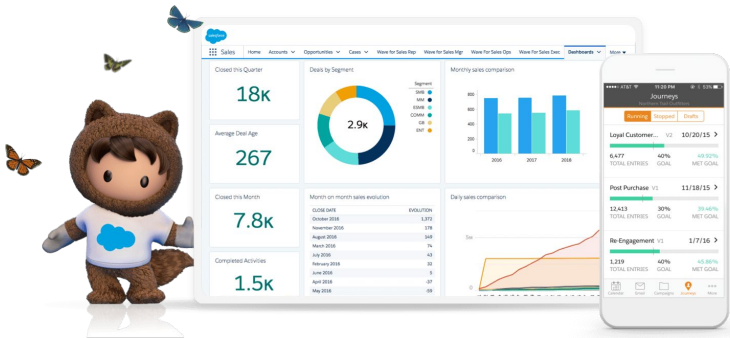


Notre Dame Athletics - Business Intelligence

- 3+ years ago Athletics leadership determined that they needed to build out a data & analytics department to help them make data-driven and informed decisions across the department
 - A formal assessment was done - it was clear that people across the department are interested in using data & analytics
- 4 main domain areas are being built out
 - Revenue Generation
 - Business & Finance
 - Team Performance
 - Student-Athlete well-being and performance



Business Intelligence @ ND



powered by 

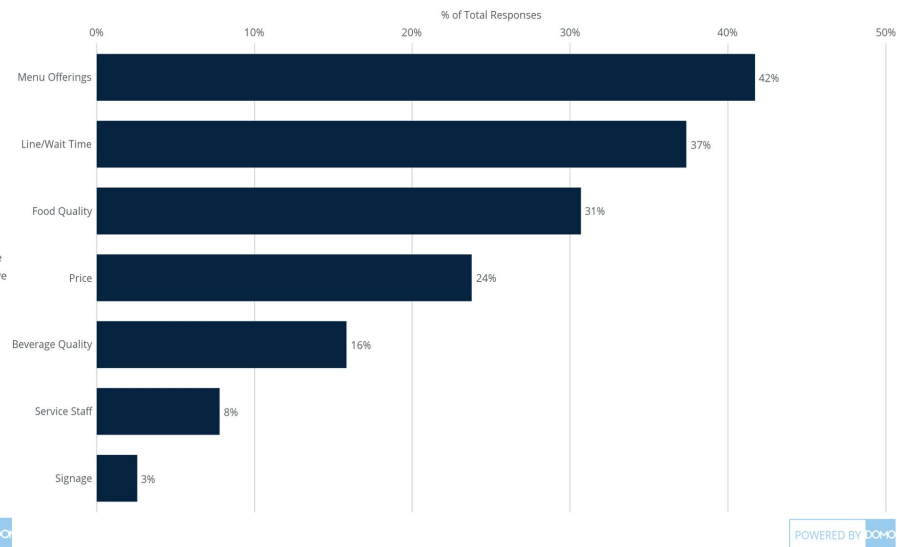
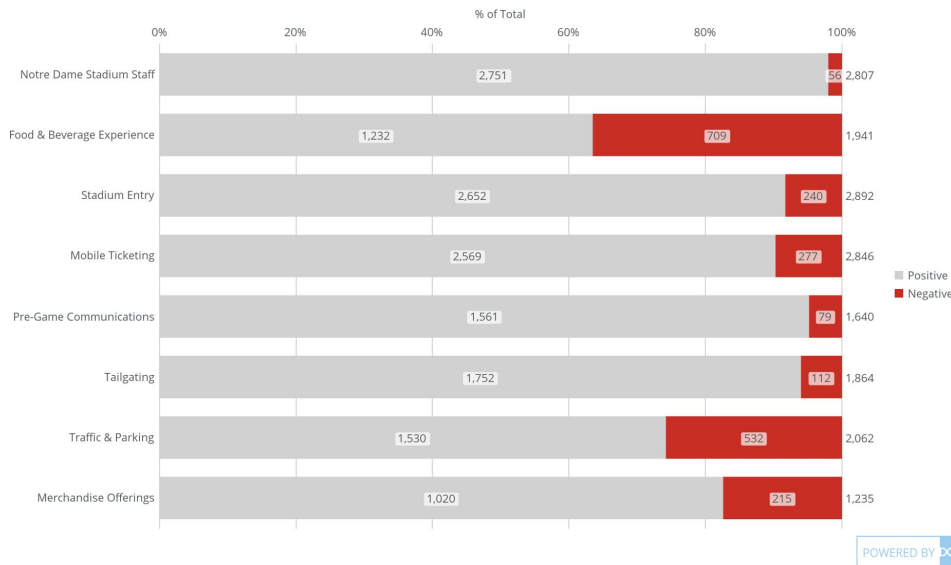


Real Project Examples

- Post Game Surveys & Sentiment Analysis
- Season Ticket Renewal Modeling - predicting renewals or at-risk accounts
- Sport Supervisor dashboards
- Equipment
- Team & student-athlete performance



Post Game Surveys & Sentiment Analysis



Post Game Surveys & Sentiment Analysis



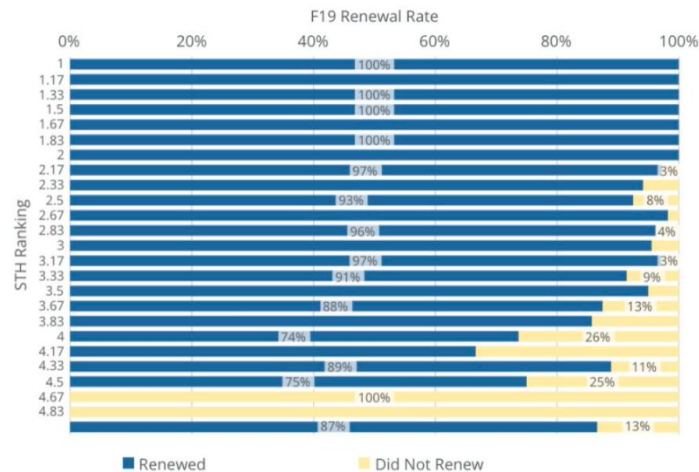
Sentiment Analysis - Social Listening

306 Comments



Season Ticket Renewal Modeling

Scoring Summary



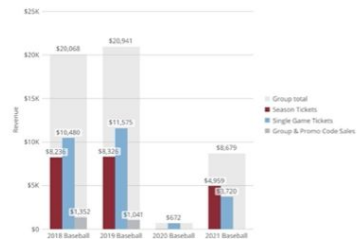
**All numbers are fake*



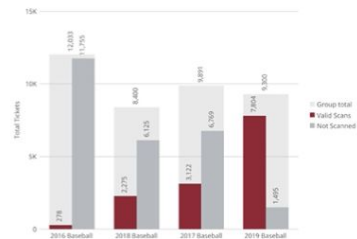
Sport Supervisor Dashboards

Ticket Sales

FAKE - Baseball Ticket Sales by Type YoY



FAKE - Baseball Ticket Utilization YoY (Click to Interact)



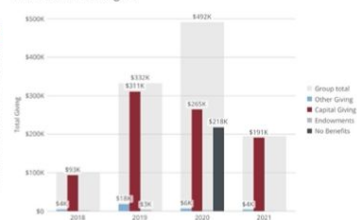
Development

FAKE - Baseball Donations by Usage (Click to Interact)

Total Usage Codes

Year	Usage Name	Distinct Donors	Total Donations
2020	Baseball Clubhouse Project	6.77	\$514.7K
2020	Baseball Capital Projects	0.43	\$29.7K
2020	Baseball	16.70	\$4.4K
2020	Athletic Director's Fund for Baseball Excellence	0.13	\$6K
2020	FC Bobo Brayton Baseball Endowment Fund	1.58	\$3.8K
2020	Lee Wiggins Endowed Baseball Scholarship	1.82	\$2.9K
2020	Baseball Capital Projects	0.33	\$6K
2020	F.C. "Bobo" Brayton Baseball Endowment Fund	0.06	1K
2020	Baseball Facility Fund	0.09	1K
GRAND TOTAL		4.81	\$645.2K

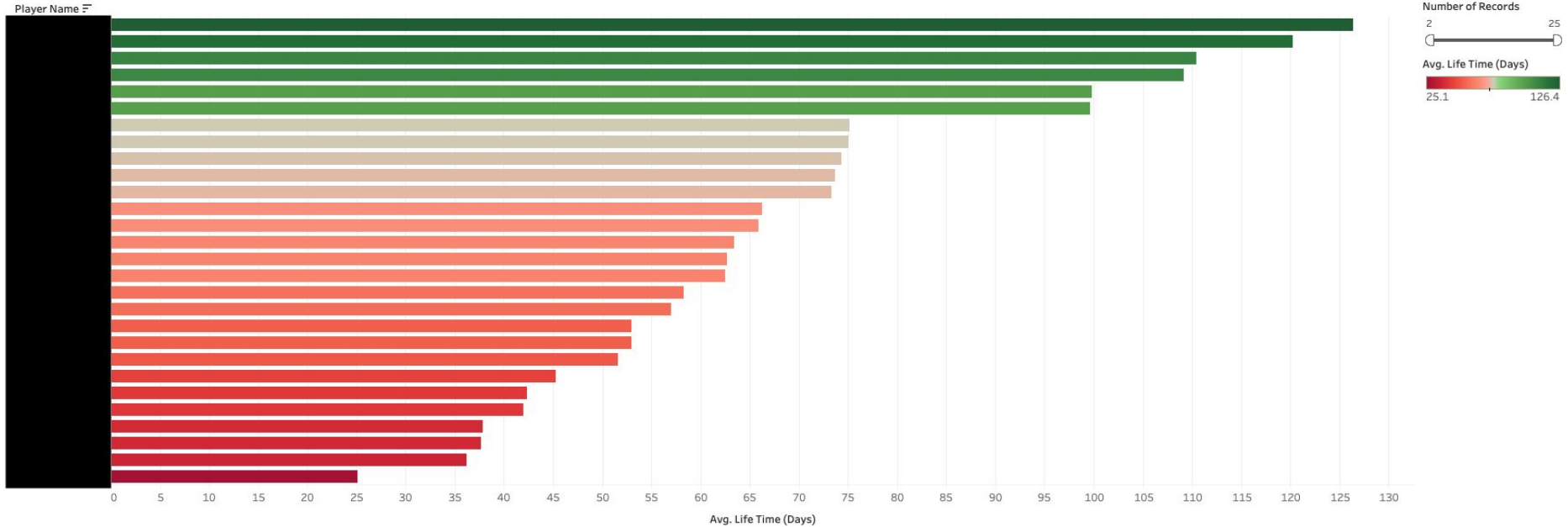
FAKE - Baseball Giving YoY

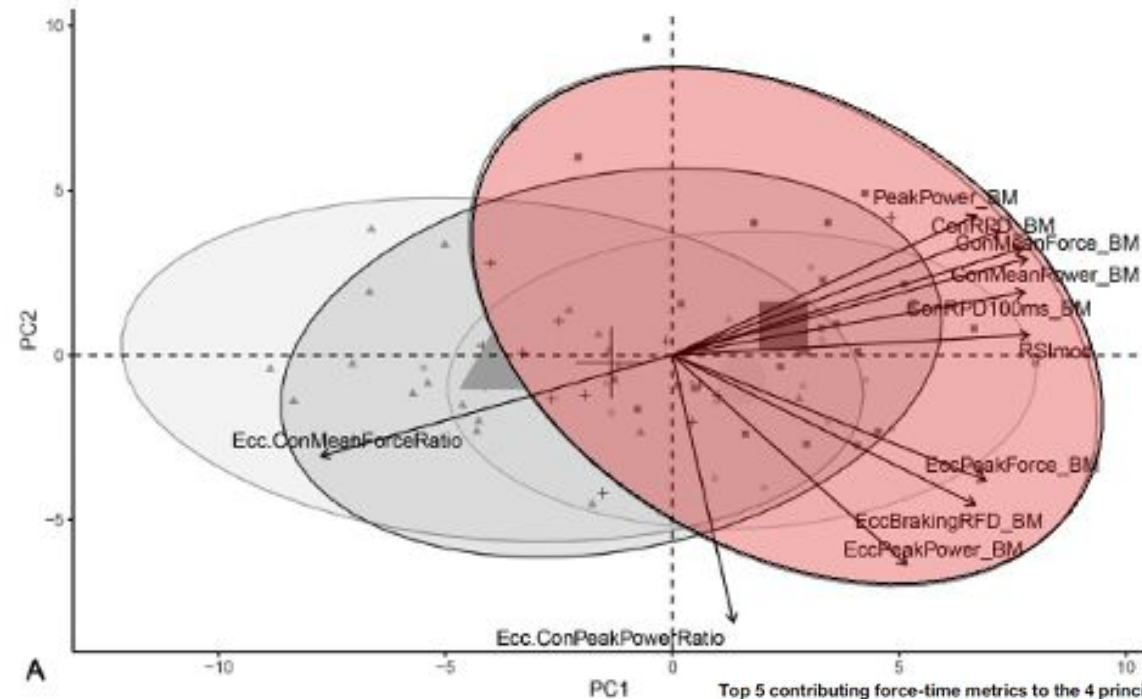


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Average Lifetime of a Hockey Stick





WHAT DO POINT GUARDS HAVE IN COMMON?

Top 5 contributing force-time metrics to the 4 principal components of force-time metrics.*†

	Principal component 1	Principal component 2	Principal component 3	Principal component 4			
	Explosive transferability to concentric power	Powerful eccentric loading	Counter movement strategy	Jump height and power output			
RSI _{MOD}	0.85	Ecc:Con power	0.90	Counter depth	0.61	Deceleration RFD	0.14
Con mean power	0.84	Ecc peak velocity	0.63	Braking duration	0.51	Con peak velocity	0.11
Con RPD 50ms	0.83	Ecc:Con duration	0.59	Ecc duration	0.48	Braking RFD100	0.11
Con RPD 100ms	0.83	Ecc mean power	0.56	Braking RFD100	0.24	Jump height	0.11
Ecc:Con force	0.82	Ecc peak power	0.55	Ecc mean power	0.14	Peak power	0.10

*RSI_{MOD} = modified reactive strength index; Concentric = Con; Eccentric = Ecc; Eccentric to Concentric phase ratio = Ecc:Con; RPD100 = rate of force development from 0 to 100 ms; RFD = rate of force development; RFD = rate of power development.

†Values are cor^2 .



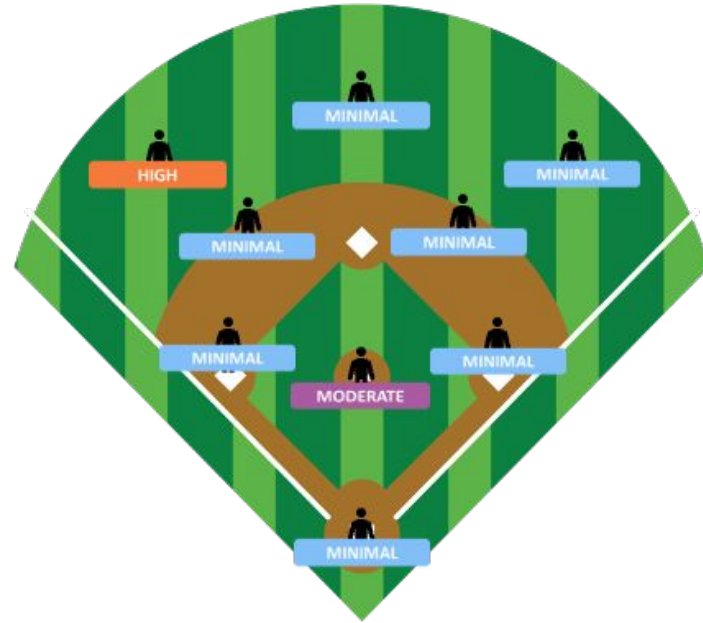


Offense

Wide Receivers

	Player	Running	High Speed	Max Velo	Impacts	Density	Player	Recent
	PLAYER	835	515	18.08 (88)	17	3.60	432	Typical
	PLAYER	1,194	806	19.23 (92)	41	5.99	757	Elevated
	CLASHMORE	1,136	850	18.33 (83)	35	5.22	643	Typical
	PLAYER	1,306	586	17.9 (83)	15	4.65	536	Typical
	PLAYER	1,199	973	18.59 (85)	28	5.12	633	Elevated
	PLAYER	1,022	980	17.88 (83)	30	4.74	597	Elevated
	PLAYER	776	394	17.24 (86)	37	4.00	486	Typical



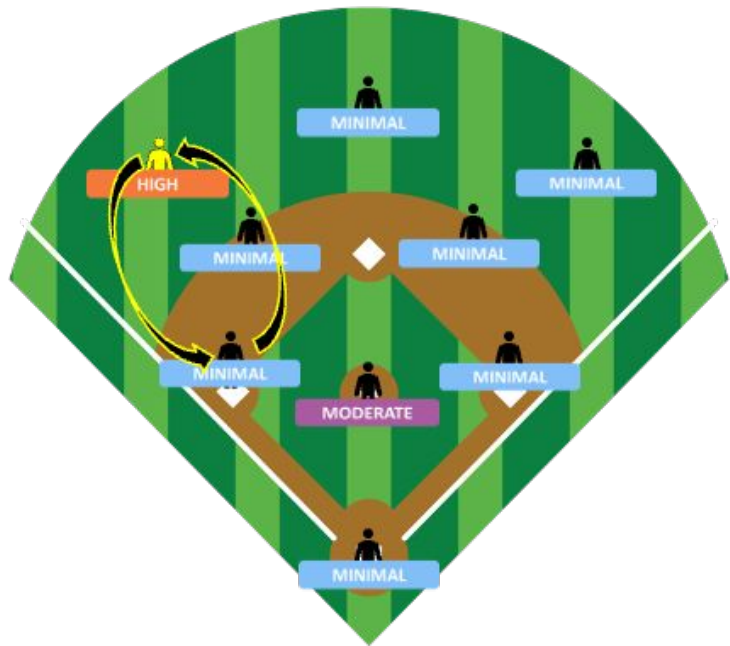


HIGH

MODERATE

MINIMAL





HIGH

MODERATE

MINIMAL



Job Postings & Opportunities

- Before applying, think through what functional area(s) you might want to focus on
- Evaluate what type of organization (mid-major, P5, G5, vendor/partner)
 - Keep in mind you don't need to (or likely want to) land at your dream organization with your dream role right away
- Notice just how many skill sets, platforms, certifications a posting asks for
 - If an organization asks for a full 'kitchen sink' of skill sets & platform experience, they may not know what they're looking for
- There may be a gap in perceived salary ranges vs required skill sets and what an organization is willing to pay



Resources & Considerations to Land the Job

- Develop an online portfolio
 - Participate in a weekly/regular challenge to build out your portfolio and skillset
 - #MakeoverMonday, #WorkoutWednesday, #SportsVizSunday
 - Find other publicly-available dataset you may be interested in
- Attend conferences
- LinkedIn stalk (politely)
- Sports Data, Analytics & Technology Association (Sports D.A.T.A.)
- Determine hard/soft limits of what you're willing to do and *where* you're willing to live
- Determine if you want to be a utility player with range or a specialty player who focuses on just one area of the business
- Consider adjacent roles & opportunities - it's not a career ladder





Questions?