

SDS PODCAST

EPISODE 874:

HOW AI IS

TRANSFORMING

BASEBALL

(WITH LESSONS FOR

ALL OF US)



Jon Krohn:	00:05	This is episode number 874 on how AI is transforming the sport of baseball.
	00:19	Welcome back to the SuperDataScience Podcast. I'm your host, John Krohn. Let's start off with some recent reviews of the show. The first one's an Apple Podcasts review from Remnasa, someone username Remnasa, who says that they've been listening to the SuperDataScience Podcast for a couple years now, and that the content is always fascinating. I'm glad you feel that way. They say that the show is sometimes a bit over their head, but you can bet that they're looking up the information and learning with every episode. That's super cool. It sounds like they're also a subscriber to the related company, superdatascience.com, that has a learning platform. They say that they like the site, so presumably that's what they're talking about. And our second review here, also an Apple Podcasts review. It comes from SaleATX, who says that this podcast is a fantastic way to keep up with the world of AI and the people who work in the industry. The guests are spot on and always interesting. That's super cool.
	01:18	Thanks to Remnasa and SaleATX for the recent ratings and feedback on Apple Podcasts. Whatever podcasting platform you use, I greatly appreciate you giving reviews and having likes and comments on our YouTube videos. I brought this up maybe a month or two ago, but as a bit of friendly competition, regular listeners may know that I've guest co-hosted another excellent podcast called Last Week in AI half a dozen times. And both regular hosts of that show, Andre and Jeremy, have been my guests on the SuperDataScience podcast. Well, despite their show being many years younger than the SuperDataScience Podcast, they are now closing in on us in terms of number of Apple Podcast ratings. They always make a shout-out at the beginning of episodes, and so I'd like to try to stay ahead of them.

- 02:10 At the time of recording, we have 287 ratings in the US and they're at 264. That means, relative to the last time I checked, they're closing the gap on us. So, help us stay ahead of Andre and Jeremy by heading to your podcast app and rating the SuperDataScience Podcast. I recently realized that I only see ratings and reviews in the US because that's where my Apple Podcasts is set up, and so my apologies if I'm missing reviews in other countries. I'm not ignoring you on purpose, I just don't see your reviews, so I don't know if there's some way... But obviously, the ratings and reviews in any country end up being helpful, so thank you for that. If you leave written feedback and I see it, if it's in the US Apple podcast platform, I'll be sure to read your feedback on air like I did today.
- 03:02 All right. Onto the heart of today's episode on fun applications of AI to sports, specifically baseball. Baseball has always been a game of numbers. For decades, teams have poured over stats like batting averages and a statistic in baseball called earned run averages. So, teams have always poured over stats like those to gain an edge, but in recent years, artificial intelligence has taken baseball analytics to new heights. In today's episode, we'll explore how AI is revolutionizing baseball from scouting and player performance to in-game strategy, and even the fan experience, and what all that means for the future of sports, as well as other industries, including whatever yours is. To appreciate AI's impact, it helps to recall the Moneyball era.
- 03:48 In the early 2000s, the Oakland Athletics Baseball Club famously used data analytics to identify undervalued players and field a competitive team on a very tight budget. That Moneyball approach pioneered by the American baseball writer, historian, and statistician, Bill James, was made famous by Michael Lewis in his bestselling book, Moneyball. And was later turned into a popular film starring Brad Pitt. And this approach proved

that objective, data-driven decisions could beat old school intuition on who the best players to acquire for your team are. Fast-forward to today, data analytics and baseball is no longer a quirky experiment, but it's standard practice across every team in Major League Baseball.

04:33 Every MLB team, the major professional league in the US now employs data scientists and front offices treat analytics like an arms race. The data for such analytics have exploded in both volume and in detail. In 2015, Major League Baseball introduced Statcast, a system of high-speed cameras and radar in every ballpark, that tracks the trajectory of every pitch, swing and catch. Statcast generates an astonishing seven terabytes of data per game, capturing everything from a pitch's spin rate to a fielder's exact movement. Human analysts alone can't possibly sift through a fire hose of seven terabytes of data per game, and this is where AI shines.

05:19 As most listeners to this podcast are surely aware, machine learning algorithms thrive on large volumes of data, finding patterns and insights that humans would miss in these mountains of information. In other words, teams that leverage AI to make sense of all these data gain a competitive edge, while those that don't risk falling behind. One major way AI is transforming Major League Baseball is by making scouting and player analysis far more sophisticated. Traditionally, scouts relied on radar, guns and gut instinct, often focusing on a few headline numbers. For example, a pitcher's earned runs average or a hitter's batting average. Now, teams feed machine learning models a vast of player data, college and minor league stats, biomechanical measurements, even video analysis of playing style to project how young players might perform in the majors.

06:07 These models consider dozens of features that a human might overlook. For example, instead of just looking at

home runs or RBIs, an AI model will factor in nuanced metrics like a batter's exit velocity and launch angle and that, which means how fast and at what angle the ball comes off the bat, or a pitcher's spin rate on each type of pitch. Incorporating these modern metrics dramatically improves the accuracy of performance projections.

AI-driven scouting can unearth hidden gems. Perhaps the prospect doesn't have a high batting average, but the data show he consistently hits the ball hard. He has a high exit velocity. This is a sign of potential success that old stats might mask. By recognizing patterns in historical player data, machine learning models can find players who were undervalued by traditional scouting. This data-driven approach is what helped fuel the Moneyball era with simpler stats and today's AI tools take it to another level.

06:58 In addition to identifying talent, baseball teams are leveraging AI to tailor player development. AI systems analyze a player's strengths, and weaknesses, and suggest personalized training programs for each individual. For instance, if an analysis of a hitter's swing reveals he struggles with high fastballs, coaches can design drills informed by AI feedback to correct that. If a pitcher's mechanics data show an odd arm angle on his curveball, an AI system can flag it and prevent a small issue from becoming a major flaw. In short, AI is helping teams both find talent and mold it with decisions backed by far more data than ever before. The influence of AI extends to the dugout and on-field decisions as well. Baseball has always been a strategy-heavy sport, managers deciding when to change pitchers, how to set the lineup, where to field fielders, where to position fielders.

07:47 In the past, these decisions were guided by experience, hunches, and basic statistics. Today, they're increasingly informed by predictive analytics. Teams use AI to

simulate countless what-if scenarios and match-ups before and during games. Want to know the best pitcher to bring in against a particular batter in the seventh inning, AI models can analyze years of data on similar match-ups, including how that batter handles pitchers with similar styles, the weather, the ballpark dimensions, and things like that. And then it gives a probabilistic answer and finds the best pitcher or batter for that particular scenario. Managers now consult win probability tables and real-time model predictions as much as they do their lineup cards.

08:26 One example from an analytics report described using AI to predict the outcome of a specific pitcher versus batter duel based on their stats and current form, something that would've sounded like science fiction a decade or two ago, but is now available at the fingertips of managers on a tablet that they consult in real-time right on the field. Defensive strategy has also been revamped by data. In recent years, teams began employing radical defensive shifts, like moving infielders to one side against pull hitters, thanks to spray chart data. AI takes us further. By crunching huge data sets of where every ball lands, some teams have used deep learning to optimize fielder positioning in ways humans hadn't tried.

09:06 This AI-driven strategy was so effective that Major League Baseball created new rules that limit extreme shifts, but the use of data to position players more effectively isn't going away. Instead, it evolves and becomes more nuanced. All these AI tools don't replace managers and coaches, rather they augment them. The best teams blend human intuition with machine predictions. Coaches still consider player psychology and on-the-day factors, but they now have a wealth of analytical insight to support or sometimes question their instincts. It's common now to see players and coaches in the dugout looking at iPads mid-game, studying the latest analytics on opponents.

- 09:44 Baseball has effectively gained a high-tech co-pilot. AI crunches the numbers in real time, while humans make the final call. And when those calls are made with better information, the odds of winning go up. On top of all these types of machine-learning-driven advances for coaches and players, AI is also enriching the fan experience. If you've watched a baseball broadcast or checked stats on a sports app lately, you've probably seen the fingerprints of AI. For example, a win probability graph can be displayed on screen to show each team's chances of winning in real time. Every time a run is scored or an out is made, these probabilities update based on a machine-learning model trained on thousands of games. This adds context and excitement for fans, turning abstract data into a dramatic storyline.
- 10:29 Similarly, advanced metrics like catch probability, the likelihood that a fielder would catch a particular fly ball are computed using analytics of ball trajectory and fielder speed, then shown on replays to illustrate how tough a play really was. As recently as a few years ago, such insights weren't available during games. Now, they're part of the standard commentary, giving fans a deeper appreciation of the skills on display. Even the game rules are feeling AI's touch. Major League Baseball has been experimenting with an automated ball strike system, essentially a robo umpire that uses AI and vision technology to call balls and strikes, instead of relying on humans who after all are human and so make mistakes.
- 11:13 During 2025's spring training, Major League Baseball let players challenge human umpire calls and have the automated system adjudicate. And the system received mostly positive reviews. While purists debate the loss of some human element, many fans and players welcome the consistency and fairness AI brings to officiating. It's another example of how AI can enhance the game without changing its score. By making sure the calls are accurate,

the focus stays on the player's skills. Beyond the ballpark, baseball's AI evolution carries an inspiring message for all of us because we can use it to hit a metaphorical home run in any industry. This is a sport deeply rooted in tradition and intuition, yet it has embraced data and AI to gain a competitive edge and the results speak for themselves.

11:59 The big takeaway for AI professionals is that any field, no matter how traditional, can be transformed by a data-driven approach. If America's oldest major sport can reinvent itself with data and machine learning models, then industries like finance, healthcare, manufacturing, retail, you name it, can do the same. The key is to augment domain expertise, human intuition and experience that experts have built over years, with the power of AI, the ability to crunch vast data and uncover hidden patterns. In baseball, the teams that best blended scouting wisdom with algorithmic analysis became champions. In business, organizations that similarly marry their industry know-how with AI insights, will outperform the competition. Another lesson from baseball is the importance of open-mindedness and adaptation. Early adopters of AI gained a huge advantage until others caught up.

12:47 We see the same in every industry. Those who innovate with AI can leap ahead, while those who resist change risk falling behind. Ultimately, AI is a tool that extends human capabilities. It doesn't replace the coaches, players, or managers in baseball. It augments their decisions with better information. The same holds in other domains. For the foreseeable future, AI won't replace product managers, physicians or supply chain planners, but it will arm them with insights to make smarter decisions. In summary, baseball's experience with AI shows how embracing technology can elevate performance while preserving the heart of the enterprise.



- 13:22 The game on the field is still baseball, human athletes competing, but it's enhanced by an invisible layer of intelligence guiding decisions. Likewise, any industry can maintain its human core while leveraging AI for optimal outcomes. As AI professionals, we should encourage our organizations to take a cue from baseball, experiment with data, trust the analytics, prototype AI-driven functionality, keep an open mind to change, and continuously iterate. That's how you hit a home run with AI in your own industry, by using the best of both worlds, human and machine, to drive innovation and success.
- 13:55 All right. That's it for today's episode. If you enjoyed it or know someone who might, consider sharing this episode with them, leave a review of the show on your favorite podcasting platform. Tag me in a LinkedIn or Twitter post with your thoughts. And if you aren't already, be sure to subscribe to the show. Most importantly, however, we just hope you'll keep on listening. Until next time, keep on rocking it out there, and I'm looking forward to enjoying another round of the SuperDataScience Podcast with you very soon.