

Court Report

A tool for predicting NBA injuries



Hamed Abdi

Injuries significantly lower a team's odds of success

- Can we predict the risk of injury of NBA players?
- Backups for players with high risk of injury
- Hiring players with low risk of injury



Data collected by scraping NBA databases

- Players data from 2010 to 2018 scraped from basketball-reference.com
- Injury data scraped from prosportstransactions.com



Date	Team	Acquired	Relinquished	Notes
2004-01-20	Cavaliers		• LeBron James	sprained right ankle (DNP)
2004-01-22	Cavaliers		• LeBron James	sprained right ankle (DNP)
2004-01-24	Cavaliers		• LeBron James	sprained right ankle (DNP)
2005-01-28	Cavaliers		• LeBron James	sprained left ankle (DNP)
2005-01-30	Cavaliers		• LeBron James	sprained left ankle (DNP)
2005-10-11	Cavaliers		• LeBron James	strained left pectoral muscle (missed pre-season game)
2007-11-30	Cavaliers		• LeBron James	sprained left index finger (DNP)
2007-12-02	Cavaliers		• LeBron James	sprained left index finger (DNP)
2007-12-04	Cavaliers		• LeBron James	sprained left index finger (DNP)
2007-12-05	Cavaliers		• LeBron James	sprained left index finger (DNP)
2007-12-08	Cavaliers		• LeBron James	sprained left index finger (DNP)
2009-04-15	Cavaliers		• LeBron James	rest (DNP)
2009-06-02	Cavaliers		• LeBron James	surgery on right jaw to remove benign growth
2010-03-06	Cavaliers		• LeBron James	sore right ankle (DTD)




LeBron James

LeBron Raymonte James • [Twitter: KingJames](#)

(King James, LBJ, Chosen One, Bron-Bron, The Little Emperor, The Akron Hammer)

Position: Shooting Guard and Small Forward and Power Forward • **Shoots:** Right
6-8, 250lb (203cm, 113kg)

Team: [Los Angeles Lakers](#)

Born: [December 30, 1984](#) (Age: 34-280d) in Akron, [Ohio](#) 

High School: Saint Vincent-Saint Mary in Akron, [Ohio](#)

Recruiting Rank: [2003](#) (1)

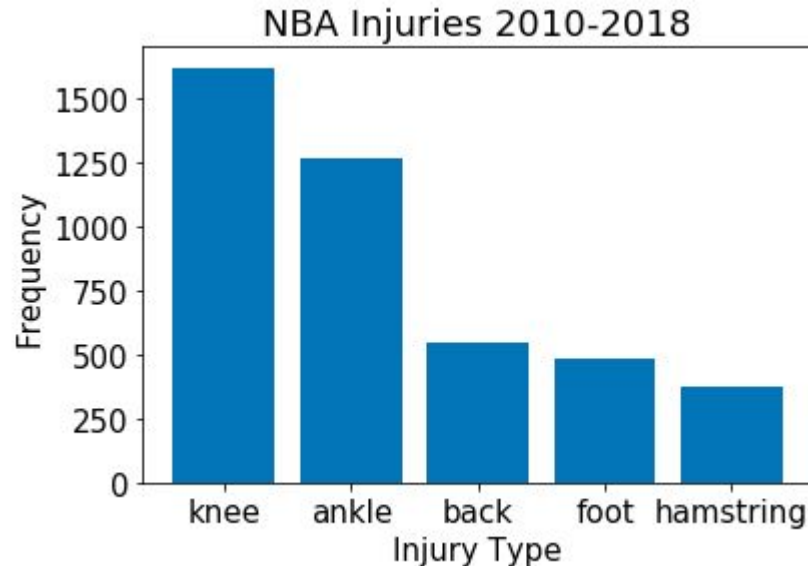
Draft: [Cleveland Cavaliers](#), 1st round (1st pick, 1st overall), [2003 NBA Draft](#)

NBA Debut: [October 29, 2003](#)

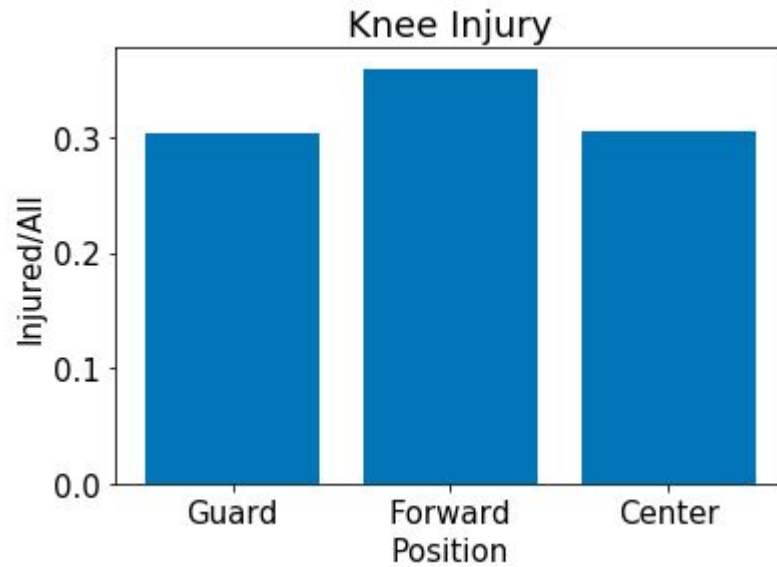
Experience: 16 years

The most frequent injury in NBA is knee injury

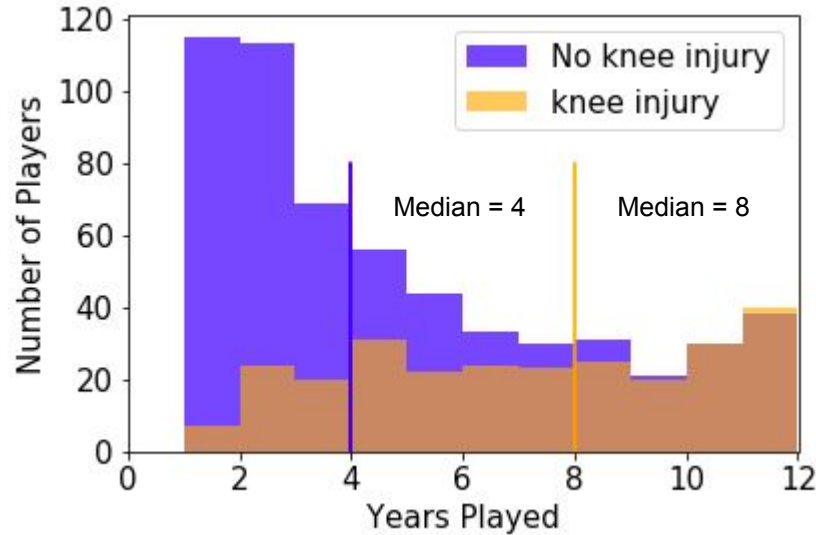
- Total players: ~1000, players with knee injuries: ~350



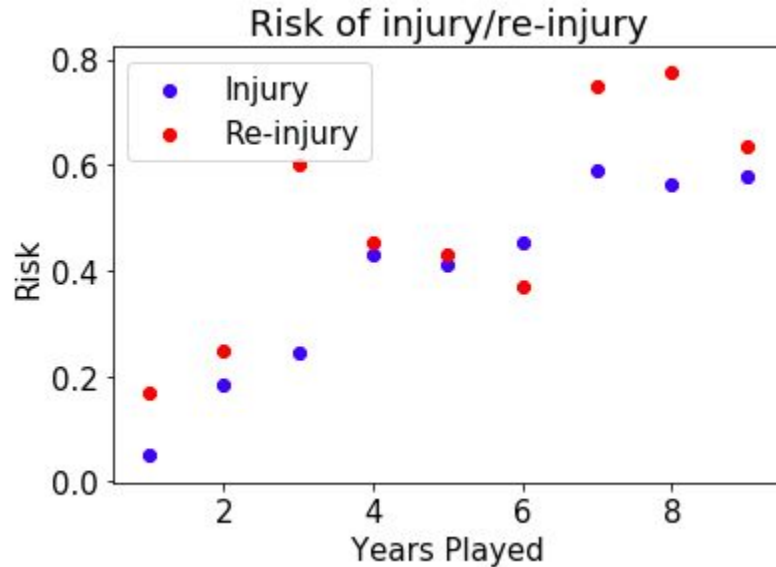
Forwards are at a higher risk of knee injury



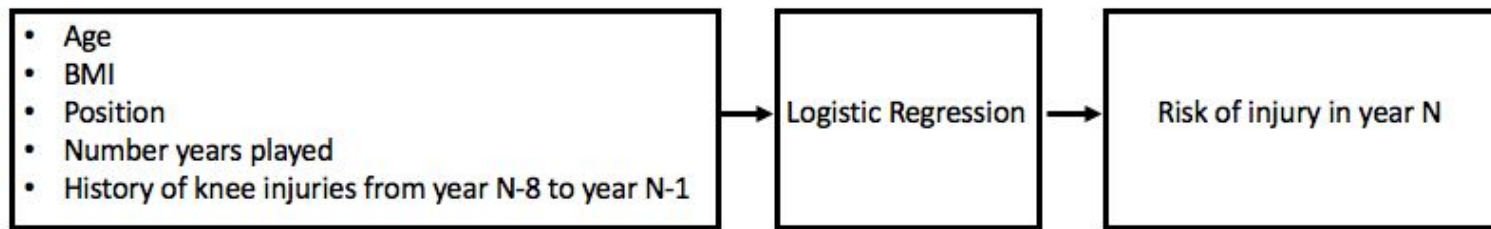
Median injured player has played 4 years longer than the median uninjured player



If you get injured once, you're more likely to get injured again



Logistic Regression performs 2.5x better than the baseline model



Outcome: an app that predicts NBA injuries

<https://court-report.herokuapp.com/>

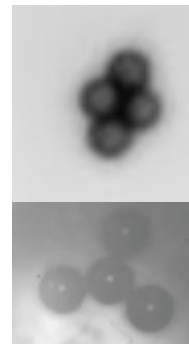
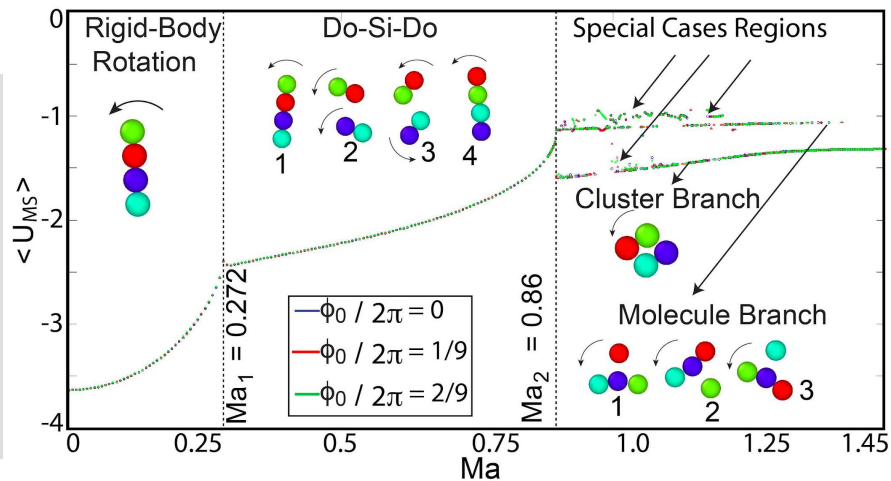
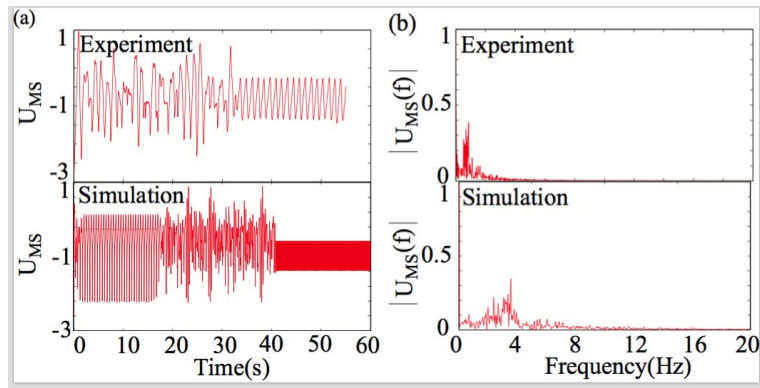
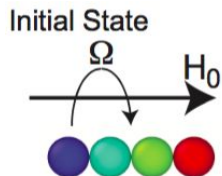


Hamed Abdi

Data Scientist

PhD in Mechanical Engineering

Specialized in computational soft matter modeling



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Enter past injuries: ☐ 2011 ☐ 2012 ☐ 2013 ☐ 2014 ☐ 2015 ☐ 2016 ☐ 2017 ☐ 2018

Risk of Injury: None

Boost the model performance by collecting more data

- More data points
- Player stats per season
 - Total games played
 - Total points scored
 - Total rebounds
 - Total assists
 - Player efficiency rate
 - Player win shares
- Player stats per game
- Most confronted opponent stats per game