Josh Hejka

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EXPERIENCE

R&D Analyst
Nov 2022 - Present

Driveline Baseball | Seattle, WA; Tampa, FL

- Created state-of-the-art pitch quality metrics using gradient-boosted machine learning models [Python]
- Created advanced pitch type and location usage recommendation models for major league clients [Python]
- Contributed to creation of arsenal quality models using novel machine learning methodology; team presented research at Sabersem 2024 [Python]
- Contributed to creation of the most advanced pitch design tool in the industry; team presented research at Sabersem 2025 [Python]
- Modernized physics engine for IMU-based wearable, improving accuracy and significantly decreasing error rate [C]
- Co-host of the Driveline R&D Podcast, discussing player development, baseball analytics, and the latest research in sports science

Professional Baseball Player
Jun 2019 - Feb 2025 (NYM), Feb 2025 - Jun 2025 (PHI)

New York Mets, Philadelphia Phillies | Various: NY, NJ, PA, FL

- Built personal website to consolidate stats, videos, and information for MLB scouts and front offices, leading to playing contract
- Career 3.58 ERA and 87 xERA- through levels up to Triple-A
- Utilized wearables such as PULSE to optimize throwing workload and Oura/Whoop to optimize sleep and performance
- Worked closely with pitching, analytics, and sports science departments to improve biomechanics, pitch arsenal, and pitch selection
- Presented plans for organizational improvement in systems, analytics, pitching evaluation, and player development

Baseball Systems/Analytics Intern
Oct 2021 - Feb 2022 (Systems), Oct 2022 - Feb 2023 (Analytics)

New York Mets | New York, NY

- Maintained legacy stats portal [PHP]
- Collaborated with team on project design, documentation, and implementation of future stats portal [React]
- Led project design, implementation, and documentation of mobile app for pitchers [React Native]
- Led project design, implementation, and documentation of pitch usage optimization tool using novel methodology [Python]

Junior Software Engineer
Jun 2017 - Sep 2017, Sep 2019 - Mar 2020

DiCorp | Forest Hill, MD

- Developed web applications and forms for trauma centers [JS]
- Developed full-stack web application for nutritionist client [Flask, HTML, CSS, JS]
- Created automation programs for internal development [Python]
- Documented processes, SOPs, and code

Player, Assistant Pitching Coach
Aug 2015 - May 2019 (Player), Sep 2019 - Feb 2021 (Coach)

Johns Hopkins Baseball | Baltimore, MD

- Served as assistant pitching coach after record-setting playing career
- Operated Rapsodo, Trackman, and Edgertronic camera on a daily basis
- Updated and documented team pitching philosophy
- Designed individual performance plans for 23 pitchers

EDUCATION

Johns Hopkins University — Aug 2015 - May 2019
BS in Computer Science

SKILLS

Python / SQL / Swift/iOS / C / React/React Native / HTML/CSS/JS / Git / Machine Learning / Computer Vision / Signal Processing / Large Language Models / Trackman / Rapsodo / Edgertronic / Trajekt

PROJECTS

Solving Ball Flight Physics

First-hand research using Trajekt, Trackman, and Rapsodo to solve open questions in ball flight physics about the lift/drag coefficients and non-Magnus acceleration. To be presented at SABR 2026.
Python / Trackman / Rapsodo / Trajekt

Projecting Pitch Design

A major advancement in the pitch design process, predicting what pitch types a pitcher is capable of throwing and generating usage recommendations based on game state. Presented at Sabersem 2025.
Python / Machine Learning

Quantifying Arsenal Effects

The industry's first arsenal quality models, created using novel machine learning methodology. An advancement over previous attempts at grading arsenal quality that only considered pitches in isolation. Presented at Sabersem 2024.
Python / Machine Learning

NYM Analytics Project

Pitch usage optimization model for pitchers. Generated individual reports using advanced mathematical modeling for recommendations.
Python / Machine Learning

NYM Systems Project

Mobile app for pitchers. Populated screens with data from database, accepted user input, and performed analysis on data with custom model.
React Native / SQL