Patrick Kough McFarlane

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GitHub ‖ Website ‖ Twitter ‖ LinkedIn

EDUCATION

Massachusetts Institute of Technology
Master of Science in Air Transportation
Feb 2016 | Cambridge, MA

University of Notre Dame
Bachelor of Science in Aerospace Engineering
May 2014 | Notre Dame, IN
GPA: 3.88/4.0
Dean's List: All semesters
Engineering Honors Program

PUBLIC WORK

-**Evaluating NBA end-of-game decision-making**, *Journal of Sports Analytics*, 2019
-**py_ball** Python API wrapper for stats.nba.com with a focus on NBA and WNBA applications

SKILLS

-Advanced Probability and Statistics
-Data Mining
-Machine Learning
-Natural Language Processing
-Optimization
-Statistical Modeling
-Stochastic Processes
-Python
—> **Data Science**: pandas, numpy, scikit-learn, statsmodels
—> **Data Visualization**: Plotly, Matplotlib, Plotnine
—> **Deep Learning**: TensorFlow, Keras, OpenCV, spaCy, NLTK
—> **App Development**: Flask, Dash
—> **MLOps**: MLFlow, PyCaret
-R
-SQL
-Google Cloud Platform, BigQuery
-Apache Airflow
-Docker
-GitHub, GitHub Actions

EXPERIENCE

Philadelphia Phillies
Assistant Director, Baseball Research & Development
January 2022 - Present

-Directing the work of ten quantitative analysts and ensuring technical projects maintain high quality and provide value.
-Working with baseball operations leadership to establish and carry out the strategic vision for the Baseball Research & Development department.
-Leading the efforts to recruit and hire data scientists to grow the technical breadth and depth of the department.

Lead Quantitative Analyst - Player Evaluation
January 2020 - January 2022

-Leveraged player tracking, performance, and scouting data to build, maintain, and monitor predictive models to forecast future player performance for amateurs and professionals throughout the world.
-Consulted on potential player acquisitions for the entirety of the baseball calendar.
-Directed and managed the work of several analysts in support of player evaluation efforts.

Quantitative Analyst
January 2018 - January 2020

-Developed machine learning models to inform all aspects of baseball operations, including defensive positioning and defensive evaluation.
-Worked closely with stakeholders on implementation of research, models, and findings from the Baseball Research & Development department.

Bloomberg LP - *Data Engineer*
January 2017 - October 2017

The MITRE Corporation - *Senior Systems Engineer*
February 2016 - December 2016

Beacon - *Revenue Management Intern*
Boston, MA, August 2015 - February 2016

Charlotte Hornets - *Basketball Analyst Intern*
April 2015 - August 2015