

# Joseph C. Kearney

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## WORK EXPERIENCE

**Millennium Management** | March 2016 – Current

*Team Lead, Engineering and Analytics*

I lead a team of 3 engineers building flagship, an application suite of custom data products. We use data generated from products we build to analyze behavior and investment decisions of our portfolio teams.

### Engineering

- Launched 6 products within flagship. Use dynamic role-based auth to support 10+ different teams that rely on the platform daily.
- Designed database architecture using Postgres and Elasticsearch. Built application backend and APIs in Node and Python.
- Developed ETL in Python to source, connect, and analyze various internal and external datasets. Managed with airflow and Jenkins.

### Analytics

- Built firm-wide metrics engine in Python. Implemented as both a package and service. Used by flagship and numerous other teams.
- Developed original algorithm using sampling and simulation methods to redefine the way Millennium ranks research analysts. Trusted by senior management as gold standard for evaluation.
- Composed large scale network analysis to track and analyze interactions between Millennium teams and research providers.
- Designing algorithm to predict future factor crowding risk based off data generated from flagship product suite.

**Morgan Stanley** | June 2014 – March 2016

*Product Manager and Data Analyst: Fixed Income*

Matrix is a proprietary application for institutional clients. I ran product management for the municipal and credit divisions. I also led user analytics for Matrix and its research distribution channels.

### Product Management

- Partnered with business stakeholders, wrote technical product specifications, and oversaw SDLC from concept to production.
- Devised system for structuring municipal trusts, which received over \$200MM from clients within its first 8 weeks of launch.
- Developed a debt profile tool to identify refunding opportunities in municipals and predict default risks across corporates.
- Led account management for largest clients. Traveled nationwide to engage with users, lead demos, and provide technical support.

### Data Analysis

- Built the first user intelligence dashboard, creating custom metrics to profile users based on how they interacted with Matrix.
- Utilized metrics to develop recommendation engine to automate marketing research to clients. Designed a hybrid algorithm utilizing k-means and item-to-item collaborative filtering.
- Grew user base ~20%, increased daily users ~10%, and saw ~15% higher readership among cohorts receiving ideas from recommendation engine.

## EDUCATION

**University of Chicago** | June 2019

MS: Analytics; GPA: 3.975

Completed degree in 2 years. Worked full time in NY, commuted to class in Chicago.

**Harvard University** | May 2014

BA: Economics; GPA: 3.75

Four-year letterman, Varsity Soccer

Wrote 70p study on marketing & analytics. Supervised by HBS prof. John Deighton.

## PROJECTS

**Autoimpute** | January 2019 – Current

Developed Python package offering end-to-end framework for handling missing data.

Important links for the package include:

[PyPI](#) • [github](#) • [docs](#) • [website](#)

**Analysis** | August 2017 – June 2019

[Analysis of UST curves](#) (regression, PCA)

[Plant malfunctions](#) (distributions, copulas)

[Online dropout rates](#) (classification, LCA)

## CONFERENCE TALKS

**PyData LA** | December 2019

Invited to give a talk about Autoimpute.

Given 30-minute slot in main conference.

**PyData NYC** | November 2019

Invited to give a talk about Autoimpute.

Given slot in “New and Upcoming” section.

## TECHNICAL SKILLS

**Languages** | Python, R, JS, C#, F#, VBA

**Databases** | MSSQL, Postgres, Elastic, Redis, MongoDB, KDB+; SQL, T-SQL, Q

**Libraries** | numPy, sciPy, pandas, dask, statsmodels, scikit-learn, pymc3, celery, airflow, D3, Node, Express, React, .NET

**Tools** | Vim, Git, Jenkins, Spark, Hadoop, Tableau, Kibana, Filebeat, Logstash

## OTHER INTERESTS

**Soccer** | Played collegiately at Harvard.

Starter for the LA Galaxy U-16 and U-18.

Extensive international experience.

**Music** | With my father, have ~8-10k records. Making website to map networks of music from around world.