Joe Redmond

New York, NY

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Education

Columbia University **New York, NY**
MS, Computer Science, Machine Learning. GPA 3.5 *Sept 2020 – July 2022*

Princeton University **Princeton, NJ**
BSE, Biological Engineering (CBE). Minor in Computer Science (PAC). GPA 3.2 *Aug 2014 – May 2018*

Skills

Languages Python, Go, R, C, Java, SQL, Matlab
Packages Python: PyTorch, sklearn, NumPy. R: tidyverse, ggplot2, plumber. C: sockets API, kernel libs
Tools GCP, git, vim, SQL databases (IBM, Microsoft), LaTeX, Adobe Creative Suite

Professional Experience

Memorial Sloan Kettering Cancer Center **New York, NY**
Data Scientist *June 2021 (Current)*

- Built near-real-time pipeline to serve random forest regression predictions into Electronic Health Record using R (plumber), Linux, and IBM DB2 to realize operating room scheduling accuracy improvement of 17%.
- Led adaptation of HL7 FHIR health data standard for 6 developers across 4 teams for above application to ensure robust pipeline integration. Wrote serialization specification to integrate model accurately.
- Added in-memory caching and error recovery logic to application, improving time-to-prediction by 83% and reliability by 4%. Designed telemetry system to monitor system performance.
- Led development for company-wide R package interfacing with vendor APIs to help analysts to perform I/O operations, notably with Microsoft Teams via MS Graph API. Managed issues and changes from 6 developers.

Data Analyst *Sept 2019 – June 2021*

- Deployed infrastructure within 2 days for what is now most-viewed Covid-19 dashboard in hospital (>4000 views). Project helped leadership know when to re-open operating rooms while protecting ICU utilization.
- Designed separation of front and back end for Covid-19 dashboard, allowing team to work in parallel. Built back end in R, bash, and SQL consisting of 4 web scrapes, 2 database ETLs, and 3 web API data feeds.

Precision Xtract **Stamford, CT**
Analyst: Introduced web scraping framework to generate physician-hospital crosswalk. *Sept 2018 – Sept 2019*

Academic Experience

Courses Deep Learning Systems, Distributed Systems, Algorithms, OS, Machine Learning Theory

Teaching Assistant, Artificial Intelligence *Fall 2021*

- Hosted office hours and graded student work for masters-level survey course, including search (heuristic, adversarial, backtracking) and machine learning (SVMs, decision trees). Student implementations in Python.

Distributed Key Value Database (Go) https://tinyurl.com/yckrascc

- Designed a distributed key-value storage database that includes both sharded load balancing and shard replication.
- Used Paxos consensus algorithm to implement replicated write-ahead log to ensure serializable consistency.

From-Scratch Neural Network Image Reconstruction (Python) https://git.io/JcvP8

- Wrote vectorized feed-forward neural network in Numpy to reconstruct images, using Adaptive Momentum (Adam) gradient descent to train weight and bias parameters.

Activities

President, Princeton Triangle Club, a 125-year-old, 65-member collegiate musical comedy troupe (2017 – 2018)