

Christopher H. Greer, Ph.D

Basic Information

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Professional Experience

Children's Hospital Colorado

Aurora, Colorado

Data Scientist Advanced

November, 2019 – Present

As the senior data scientist in the Analytics Resource Center, I lead initiatives implementing real-time machine-learning models into the electronic health record for biomedical research and clinical decision support. I also provide expertise around software engineering and devops best practices, as well as piloting the use of new technologies for clinical applications (e.g. LLMs).

- Designed and built a pipeline for custom model implementation into the production Epic electronic health record to predict: risk of complications from influenza, risk of septic shock, and risk of serious bacterial infection.
- Co-author on clinical trial results for the sepsis models, speaking engagements to national audiences on implementation and MLOps pipelines for custom models.
- Hospital subject matter expert on scientific computing.
- Replaced existing NLP process to analyze employee sentiment results using ChatGPT (via the Azure OpenAI Service), realizing savings of 400 developer hours per year.
- Designed and built a process to use ChatGPT to build patient cohorts using information contained in natural language notes, doubling the precision of existing NLP techniques and realizing clinician savings of 16 hours per 1000 patients.
- Supervised junior team members to design and develop two models predicting the risk of hospital acquired conditions and a time series epidemiology model to predict respiratory-season hospital volumes.

Oracle

Broomfield, Colorado

Principle Data Scientist

February, 2017 – November, 2019

- Incorporated geolocation data into the modeling layer of the Oracle Data Cloud Identity Graph (using Apache Spark on AWS).
- Rebuilt a privacy-preserving record linkage algorithm between incoming and fulfilled datasets, improving the quality of the match by 45%, scale by 30%, and standardizing the approach across 1000s of datasets.
- Designed and built a graph-quality measurement algorithm using a Monte-Carlo approach, demonstrating a factor of ~ 6 improvement over deterministic graph approaches.

KPMG

Denver, Colorado

Sr. Associate Data Scientist

October, 2015 – February, 2017

- Built a comprehensive data classification tool for end users using Apache OpenNLP, Spark, Hadoop, Sqoop, Hive, Python, Elasticsearch, and Java.
- Built of suite of distributed tools to augment publicly available NLP packages.
- Used these tools for information security and control for KPMG as well as data separation for large, multinational clients across millions of documents hundreds of TB in size.

Steward Observatory, The University of Arizona

Tucson, Arizona

Postdoctoral Research Associate

July, 2012 – September, 2015

- 2020 Breakthrough Prize in Fundamental Physics Laureate for contributions to the Event Horizon Telescope project on the South Pole Telescope.
- Responsible for the receiver control and monitoring operating system using custom electronics (in C).
- Responsible for the optics design that integrated the receiver onto the telescope.

Skills

Machine Learning: Linear Models, Decision Trees, SVM, Clustering, Deep Learning, Survival Analysis

CI/CD: Jenkins, Airflow, Docker

Software and Computing: Open Source Contributor, Python, DataBricks, MLflow, SQL, AWS/GCP, Spark, and other cloud computing applications

Leadership: Experience organizing and leading workshops and collaboration meetings, Teaching and mentoring junior team members, Eagle Scout.

Education

University of Chicago, Chicago, IL

- Ph.D., Astronomy and Astrophysics, 2012
- M.S., Astronomy and Astrophysics, 2004

Northwestern University, Evanston, IL

- B.A., Physics and Mathematics, 2002