DAVID RAYMOND KEARNEY

Senior Data Scientist

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SKILLS

- **Languages**: Python, SQL, R, Unix/Bash, Git, JSON
- **Machine Learning Techniques**: Pyspark, Dask, XGBoost, Random Forest, h2o, NLP, LDA, Hyperperameter tuning, Cross-Validation, exposure to Keras, TensorFlow, Pytorch, Prophet, Sparkling Water, DataRobot.
- **Statistics**: Experimental Design, Randomized Control Trials, Bootstrapping, ANOVA, t-tests
- **Tools**: Spark, Hadoop, Hive, Pandas, Jupyter-Lab, NumPy, SciPy, Plotly, Seaborn, Matplotlib, Scikit-Learn

EXPERIENCE

Senior Data Scientist

CVS Health

2019- | Greater Chicago Area

- Created automated member and provider engagement campaigns that leverage e-mail, IVR, SMS and live calls to increase medication adherence.
- Designed experiments and employed randomized control trials to consistently improve campaigns by identifying the most effective campaign variants. Implemented campaigns with JSON and evaluated with bootstrapping, ANOVA & t-tests.
- Productionlized machine learning models to identify members at risk of behaving in a way that contributes to poor health outcomes and most likely to benefit from campaigns.
- This includes training, hyperperameter-tuning and deploying adherence models with 3B+ observations to predict medication adherence using Pyspark, h2o, XGBoost & Hive on Hadoop clusters.

Insight Data Science Fellow

Fenix International Consulting Project

2019 | Remote (Durham, NC)

- Queried PostgreSQL 350GB Amazon Redshift database for 50K+ accounts and 80K+ GSM enabled solar kits. Developed a predictive classification model for Fenix International to predict probability of missing first loan payment using Python, NumPy, Pandas, Jupyter Notebooks, scikit-learn, Matplotlib, Seaborn & Plotly.
- Trained Random Forest Classifier valided model with k-fold cross-validation. Improved previous accuracy baseline by 25% and previous precision baseline by 40%.
- Further trained and validated Random Forest Regression model to predict the amount repaid on loan at 30, 60, and 90 days.

Ph.D. Candidate and Researcher

Duke University

2013 - 2019 | Durham, NC

- Developed and presented NLP and LDA analysis of the manuscript texts of New Faces Conference from 2000 to 2018 using Python, NumPy, Pandas, Seaborn, Matplotlib & Jupyter Notebooks as well as n-grams and named-entity recognition. Delivered analytical report based on the analysis to the 2019 New Faces Conference.

EDUCATION

Ph.D. in Political Science

Duke University

May 2019 | Durham, NC

M.A. in Political Science

Duke University

May 2016 | Durham, NC

B.A. in Political Science & International Studies

Summa Cum Laude

Iowa State University

May 2012 | Ames, IA

PROJECTS

Analysis of Chinese Economic and Fiscal Data (Dissertation)

- Investigated the relationship between political connections & the distribution of billions of USD in yearly fiscal transfers.
- Retrieved & cleaned biographical, fiscal & economic data & stored them in a database with 35K+ observations & 100+ features.
- Employed linear & logistic regression analysis to evaluate the impact of political connections on the distribution of fiscal transfers Python, NumPy, Pandas, Jupyter Notebooks, Plotly, R, & dplyr.
- Trained Random Forest Regression model to predict the distribution of fiscal transfers. Valided model with k-fold cross-validation.

Analysis of Chinese Development Assistance to Africa

- Employed Python and R to engage in linear & logistic regression analysis on database of 1.9K+ Chinese development finance projects in 3.5K+ locations in 50 African states between 2000-2011.
- Combined & analyzed with public opinion metrics derived from representative sample of African citizens covering the same period.
- Implemented data cleaning, management of multiple data sources & visualization with GIS tools & ggplot2.

HONORS & AWARDS

- Emerging Leaders Institute (Selective Professional Development Program), Duke Graduate School, 2018
- Society of Duke Fellows (Selective Honor Society for Duke Graduate Students), 2016