Christopher Daigle

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Data scientist specializing in machine learning and software engineering • Army Veteran • Open source contributor • Leadership ranging from small team project management, running a startup, and lead pilot in Afghanistan • Comfortable with ambiguity and driving results with little oversight

Key Skills

Technology: Python • R • Oracle SQL • Git & GitHub • Bash / Unix / Shell • Stata • MATLAB / Octave • Pandas • NumPy • SciKit-Learn • Plotly & Seaborn • PyTorch • Keras & Tensorflow • Markdown & LaTeX
Quantitative: Machine Learning • Statistical Analysis & Predictive Modeling • Supervised Learning • Unsupervised Learning • Natural Language Processing (NLP) • Dimensionality Reduction • Hypothesis Testing

Professional Experience

The Hartford Financial Services Group, Inc. – *Senior Data Scientist*   Jul 20 – Pres.
- Minimize cost by creating models to route workers compensation claims to appropriate clinicians
- Designed metrics of complexity for claims such that disparate claim types can be compared

Pratt & Whitney – *Manager, Data Scientist*   Jan 19 – Jul 20
- Helped reduce cost by $29 million by identifying the optimal allocation of 75,000+ distinct part numbers sold by 5,000+ vendors by creating an algorithm and engineering software
- Increased analysis speed critical to mitigating COVID-19 from 1.5 months to less than 1 minute by creating an algorithm, engineering an API, and deploying a web app resulting in continued global aviation operation

Boise Analytics – *Data Scientist*   Dec 17 – Jan 19
- Assisted 43 non-profits and small businesses in solving data problems by applying data science solutions
- Increased company talent by interviewing 38 data analysts
- Increased capability by mentoring teams of 20 data analysts and scientists on data science methods

University of Connecticut – *Economics Instructor*   Aug 16 – Aug 18
- Instructed microeconomics and economic research methods to undergraduates

Boise State University – *Economic Researcher*   Jan 14 – May 16
- Mined and structured data from disparate sources to create unique datasets for novel research in economics
- Produced economic research in partnership with Yale's Agricultural Economics Department on proxies for measuring GDP with satellite imagery of night-time lights in China and India
- Measured returns to investment in education with hierarchical linear models (HLM) on panel (longitudinal) data for students in Idaho, partnered with Boise State University's Economics Department and Idaho Voices for Children

Projects / Products

Rebate Optimization *Software Engineering* (proprietary software)
  Purpose: increase rebates from suppliers, reduce spending, and reduce overall cost
  Outcome: application to determine the optimal allocation of spending at the part level for 5,000+ vendors over 75,000+ jet engine components
  Technology: Python, NumPy, Pandas, Oracle SQL, PyInstaller
  Award: Special Award for Innovation at Pratt & Whitney – awarded to a maximum of 5 people a year

Alternative Vendor Identification *Software Engineering* (proprietary software)
  Purpose: mitigate impact of COVID-19 on global flight operations
  Outcome: application that identifies vendors having shared capability or sole source for repairs – performs for entire supply base in <1 minute what used to take 5 senior sourcing professional 1.5 months to analyze for a single vendor
  Technology: Python, NumPy, Pandas, Oracle SQL, Flask

Commodity Classification Innovation *Natural Language Processing, Classification* (proprietary software)

    Purpose: identify jet engine commodities from purchase orders executed by global supply buyers

    Outcome: model that classifies 90%, up from 60%, of $16 billion worth of purchase orders

    Technology: Python, SQL, Pandas, NumPy, NLTK, SciKit-Learn (sklearn), Tensorflow and Keras

    Machine Learning: Multinomial Naïve Bayes, AdaBoost, Bagging, Random Forest, TF-IDF

    Performance: 94% F-1 Score, 96% Recall, 93% Precision

Find Donors for Charity *Supervised Learning* quantchris.com/project/Donor-Classification/

    Purpose: maximize the likelihood of receiving donations by predicting if a person receives income exceeding 50k/year

    Technology: Python, Scikit-Learn (sklearn), Pandas, NumPy, Seaborn, Plotly, PyCharm, Jupyter Notebook

    Machine Learning: Ensemble Methods (ADABoost, Random Forest, Gradient Boosting), Logistic Regression, KNN, Naïve Bayes, Grid Search, Feature Scaling (Standardization, Normalization, Logarithmic Transform), One-Hot-Encoding (OHE)

    Performance: 87.26% Accuracy, 76.05% F-0.5 Score

Predicting Movements in Social Security Filings *Supervised Learning,* quantchris.com/project/sup-ss-move

    Purpose: determine if movements in social security filings can be predicted from economic and financial indicators

    Technology: R, R-Studio, Python, beautifulsoup, Pandas

    Machine Learning: Logistic Regression, Limited Dependent Variable (LDV), Greedy Selection Methods (Backward, Forward, Sequential Replacement), Hypothesis Testing (Augmented Dickey-Fuller, Likelihood-Ratio Test)

    Performance: 93% Accuracy; 92% F1-Score

Identify Customer Segments *Unsupervised Learning, Clustering* quantchris.com/project/unsup-cust/

    Purpose: determine Bertelsmann Arvato Analytics' customer segments to optimize outreach through mailings

    Technology: Python, NumPy, Pandas, Seaborn, SciKit-Learn

    Machine Learning: K-Means, Dimensionality Reduction (Principle Component Analysis - PCA), Feature Scaling (Standardization, Normalization), Imputation

Predict Clothing Items *Deep Learning, Classification* tinyurl.com/DLCloth

    Purpose: create an application that can be trained on any set of labeled images to predict the contents of an image

    Technology: Python, PyTorch, argparse, PIL, Scikit-Learn, Pandas, NumPy, Seaborn

    Machine Learning: Artificial Neural Networks (ANN), Transfer Learning (VGG11), Dropout, Rectified Linear Unit (ReLU)

Education

MS, Quantitative Economics (STEM), University of Connecticut, CT (Maj. GPA 3.95)

Certifications

Nanodegree, Data Scientist, Udacity (In Progress)

Certificate, SAFe Scrum Master (SSM - 92474883-9992), Scaled Agile

Nanodegree, Machine Learning – Introduction, Udacity

Certificate, Natural Language Processing with Python, Udemy