P. Christopher J. Daigle

+1 (520) 203-6290 | pcjdaigle@gmail.com
quantchris.com | linkedin.com/in/christopherdaigle
Wethersfield CT, 06109, USA

Data scientist with experience ranging from industry and startups to academia • Leadership experience ranging from small team project management, running a startup, and lead pilot in Afghanistan responsible for operations and personnel • Master of Science in Quantitative Economics • Army Veteran

Key Skills

Technology: Python • R • Oracle SQL / HiveQL • Git & GitHub • Bash / Unix / Shell • Stata • MATLAB / Octave • Pandas • NumPy • SciKit-Learn • Plotly / Seaborn • PyTorch • Keras & Tensorflow • LaTeX

Strategic: Algorithm Design • Iterative & Scalable Process Creation • Public Speaking • Technical Writing • Team Leadership & Training • Project Management • Research Methodology

Quantitative: Machine Learning • Classification • Regression • Supervised Learning • Unsupervised Learning • Deep Learning • Natural Language Processing (NLP) • Ensemble Methods • Dimensionality Reduction • Hypothesis Testing • Predictive Modeling • Statistical Analysis & Modeling

Professional Experience

Pratt & Whitney – *Manager, Data Scientist* Jan 19 – Pres.

- Received UTC's Innovation Award for providing solutions with software engineering, machine learning, and data science to Commercial Engines' Aftermarket Supply Chain that have resulted in increases in rebates, reductions in time to complete routine process, and increases in integrity of data products
- Improved development operations by identifying and implementing best practices with version control, server management, and general development environment standardization resulting in reduced re-work and increased output of developers
- Managed projects from requirements gathering to product deployment related to Aftermarket Supply Chain

Boise Analytics – *Partner* Dec 17 – Jan 19

- Determined markets for data analytics products, evangelized technologies to build client relationships, recruited talent, and managed projects to solve small and medium sized organizations' data problems
- Mentored data scientists and data analysts on best statistical and data science practices to increase the company's capabilities for increasingly complex data, computational, and statistical problems

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

- Produced professional academic research for economic questions related to education and development in partnership with non-profit organizations and Yale University

Veterans Affairs – *Work Study* Apr 13 – May 14
AAI Corporation – *Lead Pilot F-227* Oct 10 – Apr 13
US Army – *Sergeant / Drone Pilot* Sep 04 – Oct 10

Education

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

PhD Course Work: Microeconomic Theory I & II, Macroeconomic Theory I & II, Econometrics I & II, Industrial Organization I, Advanced Mathematical Economics

MS Course Work: Applied Econometrics II, Python Programming, R Programming, Big Data (Machine Learning), Convex Optimization with Python, Panel (Longitudinal) Data

BA, Honors degree, Economics with a Quantitative Emphasis; Minors: Mathematics & Applied Mathematics, Boise State University, ID (Cum. GPA 3.691)

Calculus I, II, & III, Differential Equations, Linear Algebra, Numerical Analysis, Probability & Statistics, Computational Mathematics

Honors: Econometrics, Money & Banking, Quantitative Methods, Senior Thesis

Certifications

Nanodegree, Machine Learning – Introduction, Udacity

Linear Regression, Perceptron Algorithm, Decision Trees, Naïve Bayes, Support Vector Machines (SVM), Ensemble Methods, Model Evaluation Metrics, Gradient Descent, Neural Networks, PyTorch, Clustering, Gaussian Mixture Models, Dimensionality Reduction

Certificate, Natural Language Processing with Python, Udemy

NLTK, spaCy, VADER, Non-Negative Matrix Factorization (NMF), Word2Vec, Latent Dirichlet Allocation (LDiA), Long Short-Term Memory (LSTM), QA Chat Bot, Generative Text

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, HQL, 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 / HQL, 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

Predicting Movements in Social Security Filings *Supervised Learning, Classification* tinyurl.com/predSS

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

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

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

Performance: 87% Accuracy, 75.68% F-0.5 Score

Identify Customer Segments *Unsupervised Learning, Clustering* tinyurl.com/KmeansCust

Purpose: determine Arvato Financial Services' 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)