Christopher Daigle

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Data science leader specializing in Natural Language Processing • Army Veteran • Open source contributor • Comfortable with refining requirements from ambiguity and helping teams deliver their best work

Technical Skills

Technology: Python • SQL • Git & GitHub • Bash / Unix / Shell • Pandas • NumPy • SciKit-Learn & StatsModels • HuggingFace • SpaCy • PyTorch & TensorFlow • NLTK • Gensim • AWS

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

Professional Experience

The Hartford Financial Services Group, Inc. – *Director of Data Science* Jul 20 – Pres.

Artificial Intelligence Factory - *Director of Data Science* Mar 23 – Pres.

- Informed strategy and implementation of NLP solutions across the enterprise by routinely presenting to leadership at all levels on topics around artificial intelligence and NLP and assisting in roadmap planning
- Consulted for line-of-business data science units on NLP opportunities and developed NLP solutions to meet a suite of business problems
- Managed one data engineer, one intern, mentored one data engineer and one data scientist

Senior Data Scientist (NLP), Manager May 22 – Mar 23

- Created NLP solutions and NLP evaluation frameworks for the enterprise
- Managed one data engineer, one intern, mentored one data engineer and one data scientist
- Introduced NLP methodologies to improve enterprise capabilities for handling unstructured communication problems

Claims Data Science, Workers Compensation - *Senior Data Scientist* Jul 20 – May 22

- Oversaw and guided development of data science models resulting in improved performance of solutions and increased technical abilities for a team of data scientists over a suite of data science solutions
- Developed, monitored, and maintained predictive models for Workers Compensation Data Science
- Managed one offshore data scientist, mentored 5 data scientists, and provided technical and non-technical training to over 100 scientists, engineers, product owners, and business customers
- Standardized data science practices through establishing peer review standards, software engineering principles, version control practices, and facilitated Scrum principles
- Created framework for MVP model assessment reducing initial model build from 1-month to < 1-day

Pratt & Whitney – *Manager, Data Scientist* Jan 19 – Jul 20

- Helped reduce cost by $29 million per-year by identifying the optimal allocation of 75,000+ parts sold by 5,000+ vendors by creating an algorithm and engineering software
- Reduced analysis time of supply chain network from 1.5 months to < 1 second by creating an algorithm, engineering an API, and deploying a Flask application resulting in continued global supply chain operations
- Performed data science, project management, data engineer, software engineer, and DevOps duties

Boise Analytics – *Partner, Data Scientist* Dec 17 – Jan 19

- Partner responsible for operations, business development, talent acquisition, and project management
- Assisted 43 non-profits and small businesses solve data problems through data science solutions

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 economic research in partnership with Yale University to measure GDP from satellite imagery
- Measured returns to investment in education for students in Idaho, partnered with Boise State University's Economics Department and Idaho Voices for Children

Products & Portfolio

Voice of the Customer Topic Model (VOCT) *Natural Language Processing* (proprietary model)

Purpose: identify themes in high volume and high velocity customer survey response data

Outcome: reduced review time by 10x, increased reviewed surveys by 50x, ensured consistent interpretation of customer feedback, provided ability to measure trends in customer themes to drive investment for improving customer experience

Machine Learning: NonNegative Matrix Factorization (NMF), Latent Dirichlet Allocation (LDiA , LDA), collocation (PMI) n-grams, sentiment analysis, coherence, perplexity, count vectorization

Technology: AWS SageMaker, AWS S3, Python, bash, SnowFlake, Oracle SQL, Scikit-Learn, SpaCy, HuggingFace, Gensim, NLTK, TMToolkit, Top2Vec, Matplotlib, conda environments, VSCode & Jupyter, Git & GitHub

Workers Compensation Triage Suite *Data Science* (9 proprietary models and methodologies)

Purpose: identify claims that are most likely to be complex for claim handlers and nurses to manage (8 separate products)

Machine Learning: GLM (Logistic Regression, Gamma, Tweedie, OLS), Random Forest Regression & Classification, Decision Tree, GBM, VAE, KMeans, DBSCAN, FAMD, MCA, Anomaly Detection, Hypothesis Testing

Technology: Python, Linux, Oracle SQL, Sklearn, H2O, StatsModels, SciPy, PyTorch, Keras, Tensorflow, Matplotlib, Seaborn, PyTest, PipEnv, VSCode, Jupyter, Git, GitHub

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 resulting in $29 million cost avoidance per-year

Technology: Python, NumPy, Pandas, Oracle SQL, PyInstaller

Alternative Vendor Identification *Software Engineering* (proprietary software)

Purpose: mitigate impact of COVID-19 on global flight operations

Outcome: application identifies vendors having shared capability or sole source for repairs – performs for entire supply base in <1 minute what took 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: Increased speed from 8-hours to instantaneous with improvement from 60% to 90% of $16 billion of commodities

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

Awards

Special Award – Innovation Award, Pratt & Whitney, awarded to 5 of ~240,000 UTC employees annually

Analytics Insight Board – VOCT, The Hartford, Chief Executive Claims Officer for NLP model

Claims Insight Board – Volatility Index, The Hartford, Chief Executive Claims Officer for invention of algorithm with broad and deep business impact

Break Through – Helping Drive Innovation Across DS Teams, The Hartford, Global Speciality

Better The Experience – MLOps Partnership, The Hartford, MLOps

Better The Experience – Mentorship & Coaching, The Hartford, Workers Compensation

Continuous Improvement – Vendor Evaluation, The Hartford, award from VP of Data Science Enablement

Continuous Improvement – Ultimate Team Player, The Hartford, external team recognition

Continuous Improvement – Thought Partnership, The Hartford, external team recognition

Education

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

Certificate, SAFe Scrum Master (SSM - 92474883-9992; expired 2021), Scaled Agile