Christopher Daigle

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Data Science leader specializing in Natural Language Processing and Generative Artificial Intelligence • Army Veteran • Helping teams realize their best work and expanding organizational capabilities

Technical Skills

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

Quantitative: Foundation Models / Transfer Learning, Natural Language Processing (NLP) • Machine Learning • Statistical Analysis & Predictive Modeling • Supervised Learning • Unsupervised Learning • Artificial Intelligence • Hypothesis Testing

Professional Experience

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

Generative AI Factory - *Organization Lead* Dec 23 – Pres.

- Lead of the organization responsible for creating production grade generative artificial intelligence (AI) assets

Artificial Intelligence Factory - *Director of Data Science* May 22 – Dec 23

- Technical Lead for Generative AI and NLP responsible for strategy, and delivering solutions with small teams, evaluating vendors, training employees from senior leaders to individual contributors, and routinely communicating with the senior-leaders including the C-Suite and audiences > 100 people
- Developed conversational search for underwriters in < 4-weeks, collaborating with ethics & legal to ensure compliance, leading a team of data engineers, data scientists, prompt engineers, and machine learning engineers for deployment
- Designed, developed, and deployed sentiment analysis application in < 1-week for investor communications which outperforms commercial alternatives
- Developed Topic Model to measure customer feedback leading to efficiencies in survey review process, targeted investment in training for claim representatives, and influence customer satisfaction
- Managed two data engineers, one data scientist, two interns, mentored multiple data engineers, data scientists, and machine learning engineers

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

- 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

Boise State University – *Economic Researcher* Jan 14 – May 16

Products & Portfolio

MLC Underwriter Conversational Search *Generative Artificial Intelligence* (proprietary solution)

Purpose: provide conversational responses answering questions from Middle and Large Commercial Underwriters
Outcome: reduction in time to finding the desired answer from an average of 10-minutes to 5-seconds
Machine Learning / Generative AI: retrieval augmented generation, sentence-embeddings, semantic search, conditional generation, FLAN-T5-XXL, quantization, LLM.int8()
Technology: SageMaker, GPU, Python, HuggingFace, sentence-transformers, fastertransformer, virtual environments, VSCode & Jupyter, GitHub

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

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

TDAC – Visionary, The Hartford, awarded to top-2% employees and celebrates the innovative solution introduced by a team which showcases their ability to bring fresh ideas and drive transformative change, ultimately propelling our company forward

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

Claims Insight Board (2x) – The Hartford, Chief Executive Claims Officer for (1) invention of algorithm with broad and deep business impact; (2) NLP Model

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

Better The Experience (2x) – The Hartford, Workers Compensation & MLOps

Continuous Improvement (3x) – The Hartford, awarded by multiple executive of multiple organizations

Education

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

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