

CHRIS COUGHLIN

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SUMMARY

Physics-trained ML practitioner with 10+ years building models from research through production. Currently focused on GenAI systems — RAG pipelines, agentic applications, and fine-tuned LLMs — with a foundation in classical data science including forecasting, anomaly detection, and XAI. Experienced across healthcare, finance, entertainment, and logistics.

RECENT EXPERIENCE

NTT DATA

Senior Data Scientist / ML Engineer

December 2024 - Present

Minneapolis, MN

- AI/ML consultant embedded with clients: research and develop new models; productionize / modernize existing systems
- Explainable AI for estimating physical security risk for a Fortune 500 healthcare provider's facilities (statsmodels, Pandas, streamlit, scikit-learn)
- Recommendation system cold start mitigation pipeline for a top interactive entertainment company (Polars, Pandas, sknetwork)
- Ported 4 Azure Synapse models to production Azure ML pipelines in 1 month for a premier soft drink manufacturing company (Pandas, PySpark)
- Feasibility of GraphRAG built on Azure CosmosDB (LangGraph, networkx)
- Self-contained open source Llama RAG framework for a leading construction engineering company (HuggingFace Transformers, SentenceTransformers)

Datasite

Senior AI/ML Scientist

November 2021 - December 2024

Minneapolis MN

- Apply NLP and GenAI to address business challenges and opportunities; mentor junior practitioners and interns in AI/ML and Python software development
- Built agentic document chat system over VDR (Virtual Data Room) using LangChain, ChromaDB, and OpenAI
- Fine-tuned open source LLMs for entity extraction and document classification using HuggingFace Transformers and LoRA
- Hierarchical taxonomy document classification deep learning model using PyTorch
- Deep learning model for strategic and financial investment recommendations using TensorFlow - in backtesting it surfaced recommendations that had subsequently been acquired by the test company

U.S. Bank Wealth Management and Investment Services

Data Scientist Officer

April 2019 - November 2021

Richfield, MN

- Data Science Internal Consulting: prototype and pitch applications of data science and machine learning to stakeholders in the Wealth Management and Investment group; guide offshore data science team; address questions from senior leadership
- Stock dividend forecasting
- Explainable AI for predicting failure in mission critical applications
- Anomaly detection for flagging unusual fund transactions in near real-time
- Survival analysis for predicting customer attrition

C.H. Robinson

Data Science Engineer

April 2017 - April 2019

Eden Prairie, MN

- ML Engineer: partner with data scientists to productionize proof of concepts; port solutions written in R to Python for deployment
- Deep learning model for classifying shipping documents. Scanned more than 35,000 documents per day in production with an accuracy of 96%
- Deep learning model for tagging signed vs. unsigned shipping documents
- Procedure for placing "orphaned" documents with the correct shipment to reduce invoice processing time

Emphysic LLC

Founder and CEO

August 2015 - October 2019

Hopkins, MN

- Founded NASA-funded startup; independent consultancy
- Distributed fault-tolerant machine learning algorithm for finding cracks and other defects in aircraft; developed and presented initial prototype in six weeks to secure follow-on funding

Additional Experience

- Data Science Engineer (Contata Solutions, Minneapolis MN): liaison between AI/ML and Data Engineering departments to productionize ML solutions
- Computational Physics Programmer (AECL, Chalk River ON): partner with mathematicians and nuclear physicists to develop applications including a reactor calculation analyzer (Python, NLP, Pandas) and a parallel processing pipeline for machine vision in drones (C++, OpenCV)
- Applied Physicist (Texas Research Institute Inc., Austin TX): design and develop prognostic structural health monitoring and condition-based maintenance systems (C, C++, Python)

EDUCATION

Queen's University (1996 - 1998)

M.Sc. Physics

Lakehead University (1992 - 1996)

HBSc. Physics

CORE COMPETENCIES

Data Science: XAI, NLP, forecasting, anomaly detection, survival analysis

ML Engineering: model deployment, Azure ML pipelines, production systems

GenAI / LLM: RAG, GraphRAG, fine-tuning, agentic frameworks, LangChain

CERTIFICATIONS

OpenAI Partners Program: ChatGPT Deployment Practitioner, AI Sales Practitioner, API Deployment Practitioner, AI Technical Practitioner

NTT DATA: GenAI Academy: Green Belt

Salesforce: Certified Agentforce Specialist

PATENTS

US708055B2

Distributed Mode System for Real-Time Acoustic Emission Monitoring