

DUNCAN STEINKE

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Quantitative researcher completing an MSc in Mathematics and Statistics, researching uncertainty-aware deep learning and regime-switching volatility forecasting in equity and energy markets. Three years in industry to senior data engineer, plus two years co-founding an analytics startup.

RESEARCH

FORECASTING RADIO RECOMBINATION LINE SCIENCE

MSc thesis, UBC Okanagan

- Researched the design of a next-generation radio telescope.
- Predicted science outcomes of a 5-year all-sky survey.
- Optimized dish array geometry to improve signal resolution.

Sep 2024 – Present

Python Math Statistics
Astronomy Research

BELIEF DISTRIBUTION LEARNING

Research paper (in preparation)

- Developed a novel deep learning algorithm with predictive uncertainty.
- Created a new approach to uncertainty modeling using Dirichlet distributions.
- Outperformed existing benchmarks on Label Distribution Learning tasks, improving accuracy and uncertainty calibration.

Mar 2026 – Present

Python Machine Learning
Deep Learning
Uncertainty Quantification

VOLATILITY FORECASTING WITH UNCERTAINTY-AWARE COVARIATES

Research project

- Added forecasting to the hidden Markov model package hmmTMB.
- Coupled an HMM with an uncertainty-aware deep learning model over covariates using a custom loss function.
- Demonstrated improved forecasting of TSX equities and energy commodity pricing compared to HMM or deep learning alone.

Jul 2025 – Apr 2026

Python R
Hidden Markov Models
Time Series Forecasting

EXPERIENCE

SENIOR DATA ENGINEER

ServiceTitan

- Built the Schedule Engine business unit's internal reporting platform from scratch (Snowflake, Tableau), managing one engineer and serving billions of data points to executive, business development, and customer success teams.
- Developed a client-facing analytics page (Snowflake, SQL, React) serving 1,800+ clients.
- Designed the A/B testing methodology for an AI chat assistant prototype, measuring impact and informing iterations that cut agent handling time.

Aug 2022 – Apr 2024

1 yr 9 mos

Snowflake Tableau SQL
AWS Production Software
Data Engineering Teamwork
Leadership

ANALYTICS ENGINEER

Schedule Engine (acquired by ServiceTitan)

- Established the source of truth for reporting, defining business metrics where none existed and building the data analytics platform.

Apr 2022 – Aug 2022

5 mos

Business Intelligence
Data Pipelines

RESEARCH ENGINEER II, DATA SCIENCE

HomeX

- Deployed data ingestion microservices and led client analytics projects.

Jul 2021 – Feb 2022

8 mos

Python Analytics

CO-FOUNDER & CTO

Backr.ai (YouTube analytics startup)

- Raised \$90K through grant funding and took first prize in the DDQIC pitch competition worth \$30K.
- Selected for four accelerator programs, including NextAI Montreal.
- Led a team of three developers and a data analyst, owning product roadmap and technical strategy.
- Acquired 50 customers, including channels with 3M+ subscribers.

Jun 2019 – Jul 2021

2 yrs 2 mos

Entrepreneurship Leadership

Strategic Planning

Product Management

Full Stack Development

Python React SQL NLP

Google Cloud Microservices

MACHINE LEARNING RESEARCH INTERN

Institute for Infocomm Research · Singapore

- Authored an NLP research paper (arXiv preprint) on unsupervised text expansion from pre-trained embeddings.
- Improved short-text classification accuracy under limited training data via generated pseudo-documents.

Research paper (arXiv) (<https://arxiv.org/abs/1909.07512>)

Jan 2019 – Apr 2019

4 mos

NLP Text Classification

EDUCATION

THE UNIVERSITY OF BRITISH COLUMBIA

Master of Science (MSc) · Kelowna, BC

Mathematics and Statistics

GPA: 4.0

- Coursework in non-parametric models, stochastic processes, differential equations, generalized linear models, and optimization.

Sep 2024 – Aug 2026

QUEEN'S UNIVERSITY

Bachelor of Applied Science (BASc) · Kingston, ON

Engineering Physics

GPA: 3.9

- Core studies in physics, mathematics, statistics, and computer programming.

Dean's Scholar · H. Jansen Memorial Scholarship (Awarded to the student with the highest standing in Physics I & II)

Sep 2015 – May 2020

CERTIFICATIONS

MIT SCHWARZMAN COLLEGE OF COMPUTING

Professional Certificate · Remote

Data Science and Machine Learning: Making Data-Driven Decisions

2022

SKILLS

Analytics · Astronomy · AWS · Business Intelligence · Data Engineering · Data Pipelines · Deep Learning · Entrepreneurship · Full Stack Development · Google Cloud · Hidden Markov Models · Leadership · Machine Learning · Math · Microservices · NLP · Product Management · Production Software · Python · R · React · Research · Snowflake · SQL · Statistics · Strategic Planning · Tableau · Teamwork · Text Classification · Time Series Forecasting · Uncertainty Quantification