TOM MARSH

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SUMMARY

ML Engineer with 8 years building production systems at TB/PB scale. Physics background. Track record of measurable business impact including foundational tech for a $20M+ company.

EXPERIENCE

Ströer Labs NZ — Machine Learning Engineer

February 2018 – November 2025

Ströer Labs NZ is a New Zealand based development house for the European digital programmatic advertising company Ströer. While working in an AGILE environment, I picked up many different programming languages and technology stacks.

I started working for Ströer as a Java-based Software Engineer before being given the opportunity to help start a data team for our New Zealand branch. This allowed me to experience the full spectrum of data roles including Data Engineering, Data Science, Machine Learning Engineering, and Machine Learning Operations. Giving me a solid foundation for taking projects from end to end.

Projects ranged from typical classification and numeric prediction to optimisation and risk management. As most of the data was categorical in nature this led to mainly decision tree-based algorithms and timeseries analysis. The datasets being in the TB and PB data range meant utilising distributed computing platforms such as Apache Spark was critical.

Highlights:

- Reducing the time taken to render impressions on the page by 50% (generating tens of millions of additional Euros each year)

- Reducing outgoing data costs for some of our applications by up to 35% (saving tens of thousands of USD each year)
- Introducing versioning and reporting tooling that is usable by all walks of employees

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Pyper Vision — Machine Learning Engineer

July 2024 – February 2025, October – November 2025 (Both concurrent with Ströer)

Pyper Vision is an aerospace startup with the goal of dispersing fog at airports by using drones. They reached out to me near the end of my thesis and asked for my expertise to help them pivot into a tech company that forecast fog using machine learning. I succeeded and they are now worth tens of millions of dollars.

I joined the team part-time as a contractor and their sole tech person, developing and building a full stack machine learning solution.

Contract 1: Involved building data collection and processing services hosted on Google Cloud Platform (GCP), exploring different machine learning model architectures such as LightGBM's Gradient Boosted Decision Trees (GBDT) and TensorFlow's Deep Learning and Convolutional Neural Nets (CNNs). Delivered a commercially competitive product in 8 months.

Contract 2: Returned for second engagement to build fog classification system. Developed pseudo-labeling pipeline from meteorological research, trained supervised models with physics-based validation, and clustered airports by fog patterns and model error modes to enable systematic diagnosis of production forecast failures. Delivered in 4 weeks (part-time).

SKILLS

Data Engineering: Spark, EMR, AWS Glue, Apache Airflow, Apache Kafka, Amazon S3

Data Science: LightGBM, XGBoost, SKLearn suite, Pandas, NumPy, TensorFlow, Jupyter Notebooks

ML Ops: AWS SageMaker, AWS Lambda, Docker, MLFlow

Other: Streamlit, AWS Athena, Linux, OSX, GCP, Kubernetes, Git, FastAPI

Languages: Python, SQL (daily); Java, Scala, Kotlin, Go, C, VBA (occasional)

EDUCATION

MSc — Physics — University of Canterbury

July 2022 – July 2024 (Concurrent with Ströer)

My area of research was in atmospheric physics, specifically in how extreme precipitation events change over the country in a warming climate. To achieve this we analyzed over 4000 years of model simulation at various spatial and temporal resolutions. I gave a talk on this work at the Meteorological Society of New Zealand's annual conference 2023. This work was also a collaboration with the National Institute of Water and Atmospheric Research (NIWA).

BSc — Physics & Computer Science — University of Canterbury

February 2015 – November 2017

My undergraduate capstone project was in solid state physics where I grew Y2SiO5 thin films to be doped with rare earth elements and used as quantum information devices. This taught me many practical lab skills and how to take projects from concepts to minimum viable products. We were successful in proving the efficacy of Pulsed Laser Deposition for these devices.

ADDITIONAL

Mentoring and Public Speaking: Over the years I have enjoyed mentoring entry-level tech workers from Australasia across the tech space. During 2022 I worked with TechWomen NZ alongside another mentor to facilitate a peer group mentoring circle for entry-level tech workers. During 2023, I dipped my toes into public speaking on my experience as a Data Scientist with a physics background.

Interns: I have also worked with the University of Canterbury and the Master of Applied Data Science program to take on interns at Ströer each summer since 2021. This has been a valuable experience teaching as it allowed me to solidify my understanding and develop my ability to break down complex topics.