NATHAN BOSCH

London, UK

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PROFESSIONAL PROFILE

Machine Learning Engineer with extensive experience leading high-impact projects in Mapping and autonomous systems. Recently joined Isomorphic Labs to work on AI-driven drug discovery.

EXPERIENCE

Isomorphic Labs (https://www.isomorphiclabs.com) ***Full Time — London, UK***

Machine Learning Engineer February 2026 – Present

- Working in the Applied ML team directly supporting drug projects and driving improvements to the drug discovery engine.

Lyft (https://www.lyft.com) ***Full Time — San Francisco, USA***

Senior Machine Learning Engineer May 2024 – January 2026

- Architected and launched the first **AI Agent in Mapping** – an internal **Mapping Copilot** – a multi-agent system integrated into our map tooling platform used by ∼1/3 of the company. Built with **LangGraph** and domain-specific MCP tools; implemented evaluation and tracing with **LangSmith**.
- Drove **LLM-based automation** for driver feedback, achieving a **5x increase in processing capacity** (3k → 15k reports) and fully automating **30%+** of incoming feedback using LLMs and AI agents.
- Tech lead for the **Restroom Finder**[1] feature. Led system architecture across ∼8 engineers and collaborated with legal, product, design, and data science. Used in ∼6k rides daily, with **22k restrooms added by drivers**.
- Tech lead for **real-time road closure feedback**[2], enabling in-ride driver reports with automatic segment inference. Led execution across 3 teams, handling >5k reports/day impacting millions of rides yearly.
- Led ML research efforts including evaluation of **SAM2/3** for street-level and satellite imagery segmentation, and **Qwen3-VL** for visual grounding – including **re-annotating imagery to train on-device detectors without human labels**.
- Led Mapping's **AI strategy and 2026 planning**, represented Mapping in company-wide AI forums, and mentored engineers across technical and leadership topics.

Machine Learning Engineer August 2022 – May 2024 *(Munich, Germany)*

- Designed and deployed **CNN-based automation models** in **PyTorch** to validate street-level detections for stop signs, traffic lights, and speed limits, achieving >**50%** automation and **300k+** added objects.
- Enhanced the **place conflation pipeline** with **R-Tree** retrieval and a **bi-encoder** model, reducing curation effort for missing places by **30%+**.
- Built a fully automated **road-closure detection system** using an hourly **Spark** pipeline on ∼2B telemetry rows, with an interpretable **logistic regression model** and driver feedback integration.
- Built heuristic pipelines for **open/closed gate detection**, improving routing around gates by ∼**90%**.

Kwantum Analytics (https://www.kwantumanalytics.com/) *Part Time — Remote*

Machine Learning Consultant January 2021 – June 2022

[1] https://www.lyft.com/blog/posts/lyft-driver-bathroom-breaks-stops-finder

[2] https://www.lyft.com/hub/posts/the-best-navigation-for-rideshare

- Developed novel ML approaches for globally recognizable clients, including explainable AI for driver analysis, class imbalance correction for market segmentation, and LLMs for advanced topic modelling.

Ericsson AB (https://www.ericsson.com) *Part Time — Remote, Sweden*
R&D Intern & Master Thesis June 2019 – June 2022

- Master's thesis at the Global AI Accelerator (GAIA): built an information retrieval system for trouble reports using **RoBERTa**, with a focus on catastrophic forgetting during domain-specific fine-tuning.
- Deployed ML models with **Seldon Core**, **Kubernetes**, and **Docker**; applied **SHAP** and deep learning (LSTM, transformers) for anomaly detection in log files.

SKILLS

- **Data Processing:** Spark, Trino, SQL, Pandas
- **Workflows & Orchestration:** Airflow, Flyte, Dagster
- **Machine Learning:** PyTorch, Hugging Face Transformers & Datasets, LangChain/LangGraph, LangSmith, FastMCP
- **MLOps & Deployment:** Production ML deployment on cloud infrastructure, including automated rollout, monitoring, and observability pipelines
- **Software Engineering:** Python, Flask, FastAPI, CI/CD, Grafana, Kibana

EDUCATION

MSc Machine Learning, KTH Royal Institute of Technology, Sweden 2020 – 2022

BSc Artificial Intelligence, University of Groningen, The Netherlands 2017 – 2020

NOTABLE PUBLICATIONS

Predicting maintenance costs of an IT system using artificial intelligence models June, 2024
Applied Marketing Analytics
https://doi.org/10.69554/CSVO2679

Fine-Tuning BERT-based Language Models for Duplicate Trouble Report Retrieval December, 2022
2022 IEEE International Conference on Big Data
https://ieeexplore.ieee.org/document/10020825

Prediction and profitability in market segmentation typing tools January, 2022
Journal of Marketing Analytics
https://doi.org/10.1057/s41270-021-00145-4

Software Logs for Machine Learning in a DevOps Environment August, 2020
2020 46th Euromicro Conference on Software Engineering and Advanced Applications (SEAA)
https://doi.org/10.1109/SEAA51224.2020.00016