# Lukas Gardberg

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🐙 GitHub    💼 LinkedIn

## EXPERIENCE

Machine Learning Engineer
**Swedish Police Authority**                                          Sep 2023 – Present

- Designed and led end-to-end ML model deployment workflows, improving production readiness and operational efficiency on on-prem cloud environments using Python APIs & Kubernetes.

- Led cross-functional collaborations, translating technical insights to actionable strategies for non-technical stakeholders in police cases.

- Drove MLOps best practices by implementing model registry security, container monitoring with Prometheus & Grafana, and optimizing container build and deployment times.

- Spearheaded the development of an LLM-based text analysis tool, from solution design to alpha stage, including evaluation dataset creation and model inference optimization.

Full Stack Developer
**Netcompany** – A Danish IT consultancy firm                          May 2023 - Sep 2023

- Built scalable back-end solutions in Python, Java, and SQL for governmental clients in the financial sector, ensuring robust and efficient data processing for critical applications.

- Developed large-scale batch jobs and implemented high-performance data models, contributing to mission-critical financial systems.

Machine Learning and AI Intern (thesis project)
**Sinch** – A global tele- and cloud communications company             Sep 2022 – April 2023

- Developed cutting-edge ML models using PyTorch for diffusion-based vocoding, contributing to a real-time text-to-speech system with a focus on performance optimization and inference speed.

Data Engineering Intern                                                 Jun 2022 – Aug 2022
**Qlik** – A software company providing business intelligence and data integration solutions

- Streamlined data pipeline processes using SQL and dbt, enhancing performance and cost-efficiency of data integration.

- Developed and implemented Snowflake cost monitoring tools, optimizing data storage and retrieval for business intelligence operations.

## EDUCATION

**Lund University** – B.Sc. & M.Sc. Computational Mathematics, Machine Intelligence    Sep 2017 - March 2023
- Five-year engineering degree focusing on programming, statistics, and machine learning with applied and theoretical mathematics.

**Hanyang University** – Computer Science  (Exchange, South Korea)      Sep 2020 - Jun 2021

## SKILLS

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|---|---|
| Languages | Python, Go, SQL, Java, Bash, JavaScript/TypeScript |
| Technologies | Docker, Kubernetes, Git, Linux/Unix, Elasticsearch, Grafana, Prometheus, Ansible |
| ML | PyTorch, JAX, Hugging Face, MLFlow, Scikit-learn, TensorFlow, Keras, Weights & Biases |
| Frameworks | FastAPI, Next.js, Pydantic, Pytest, NumPy, Pandas, Matplotlib, dbt |

## PROJECTS

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|---|---|
| **Songriver** | Music stem separation app deployed on GKE with frontend in Next.js and backend in PyTorch & FastAPI |
| **Attention** | Implemented transformer-based models from scratch in JAX, including Google's T5 and other architectures |
| **Transcribe** | Streaming CPU-based local audio transcription using Whisper |
| **Open Source** | Active contributions to various projects such as vLLM, Basic-pitch (Spotify), and Torchensemble |