# Rikard Hallberg

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## Summary

Cross-functional software engineer with a strong focus on delivering functionality to the end customer and meeting both culture and process standards within companies.

## Experience

**ABB – Associate Research Engineer | Python, C++, Matlab, Simulink** oct. 2024 – present

- Improved the Python algorithm to evaluate dataset sufficiency and quality before ML application. Processed datasets with 10M+ data points across 6 powertrain sensor features. Defined ML applicability criteria considering data and concept drift. Built a case study-style Jupyter Notebook template for generating statistical reports and visualizations.
- Enhanced previous embedded C++ software to monitor and log ML training set performance in real time.
- Prototyped a Simulink-based powertrain model to test the C++ implementation in a simulated environment. Created automated test cases to benchmark correctness of embedded implementation.

**ABB – Intern Research Engineer | Python, C++** jul. 2024 – oct. 2024

- Developed real-time embedded software in C++ for next generation drive platforms. Compared baseline “healthy” powertrain states to live operating data using non-parametric distribution analysis.
- Designed a cloud-based Python algorithm to analyze powertrain field data and classify operational states.
- Used one powertrain’s data to train a Feedforward Neural Network and applied the Python algorithm pre-training. Achieved only a ~3.7% drop in prediction accuracy while improving training time by over 20%.

**Klardeal - Full stack Developer (Freelance) | TypeScript, SQL, HTML, CSS** oct. 2023 – dec. 2023

- Delivered a deal-matching platform in <2 months, acquiring 25 paying customers during my contract.

**Project course (Westermo) – Software Developer | Vue.js, Docker, SQL** nov. 2021 – jan. 2022

- Built risk integration software as a web app with a team of 6; primarily led frontend development.

**Thesis Project with applied NLP (Mälardalens University)** nov. 2021 – jan. 2022

- Applied Natural Language Processing to over 50 documents with over 600 security requirements to find the most common problems in language clarity.

## Education

**Mälardalen University, completed Feb 2023** Västerås, Västmanland

Bachelors in Computer Science

- Software engineering, Data structures & Algorithms, Computer Architecture, Linux, Networking, etc.

## Skills

- C++, Python
- SQL
- Git
- Matlab, Simulink
- Docker
- JavaScript, HTML, CSS

## Language

- Swedish, native
- English, fluent