# Olle Oltorp

*M.Sc. Machine Learning, Industrial Engineering and Management, KTH*

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## Education

**M.Sc. Industrial Engineering and Management** (Machine Learning) *2025–Jun 2027 (expected)*
*KTH Royal Institute of Technology* Grade: 4.70 / 5.00

*Relevant courses: Machine Learning, Artificial Neural Networks and Deep Architectures, Deep Learning in Data Science, Scalable Machine Learning and Deep Learning, Search Engines and Information Retrieval Systems, Artificial Intelligence, Computer Security*

**B.Sc. Industrial Engineering and Management** (Computer Engineering) *2022–2025*
*KTH*

*Relevant courses: Software Engineering, Language Engineering with Introduction to Machine Learning, Introduction to Computing Systems Engineering, Programming Techniques, Applied Computer Science, Database Technology, Internet Programming*

*Thesis: Design and Evaluation of Recommendation Systems for Newsletters* *Industry partner: Swedish media company*

- Built the collaborative filtering model, which ranked newsletters best of the four systems compared (precision@5 0.568), by factorising a joint article–newsletter matrix so that article read time could predict newsletter engagement.
- Scoped with the client what their data could support and whether article personalisation was worth extending to newsletters; presented the results to around 30 of their engineers and managers.

## Experience

**Teaching Assistant** *2026–2027*
*KTH, School of Electrical Engineering and Computer Science*

- Teaching assistant for Language Engineering with Introduction to Machine Learning (autumn 2026) and Search Engines and Information Retrieval Systems (spring 2027).

**Research Assistant** *Apr–Aug 2026*
*KTH, Dept. of Industrial Economics and Management*

*AI adoption (WASP-HS)*

- Synthesised the recurring barriers to AI adoption across 33 empirical studies into a thematic review, by building the coding framework with the project leads and coding every study against it.

*Sustainable food (Digital Futures)*

- Produced KTH's first measure of uptake of its sustainability standard by analysing 2025 catering data (16,773 order lines, SEK 11.3M).
- Sole-authored the 38-page report, showing that a standard only holds where knowledge of it and authority over the choice sit with the same person; based on ten semi-structured interviews I designed and conducted.

**Admissions Data Assistant** *Feb–Mar 2026*
*KTH, Dept. of Industrial Economics and Management*

- Validated 44 confidential applications to KTH's international master's programmes: recomputed grades, verified university rankings.

**Property Maintenance Worker**, *SKB* · Re-hired for four summers, one autumn and one winter *2022–2025*

## Projects

All projects: ollen.io

**Product Search Study** *2026 · Open source*

- Raised search quality on a 43,000-product catalogue from nDCG@10 0.710 (BM25) to 0.804 at 37 ms p99, by testing 11 embedding models, 120 hybrid setups, 15 rerankers and 1,530 LLM expansion setups, significance-tested on held-out queries.

**Minecraft Mob Object Detection** *2026 · Open source*

- Built a 49,861-image dataset of all 87 mobs (177,312 boxes and masks) labelled exactly by the game through a mod I developed, and fine-tuned RF-DETR on it to 0.602 mAP50-95 on test images from unseen parts of the world; published both on Hugging Face.

**Marketplace Pricing Extension** Adds rarity grades and cross-market prices to marketplace listings *2026– · Live*
**Marketplace Discovery Tool** Grades tens of thousands of live listings against community standards *2026– · Live*
**Grading Data API** Public REST API powering both tools above, serving source-cited grading data *2026– · Live*
**Workout Tracker** Phone-first app for planning workouts, logging sessions and tracking progress *2026– · Live*

*Sole developer on all four, full stack to ops.*

## Skills

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|---|---|
| **Programming** | Python, JavaScript, SQL, Java; Docker, Git |
| **ML & data** | PyTorch, Hugging Face (Transformers, Datasets, Hub), Scikit-learn, Pandas, Polars, Matplotlib |
| **Search & NLP** | BM25, dense and hybrid retrieval, rank fusion, rerankers, LLM query and product expansion, embeddings, Elasticsearch |
| **Vision** | Object detection (RF-DETR), synthetic data generation |
| **Recommenders** | Collaborative filtering, matrix factorisation, content-based and hybrid systems, implicit feedback |
| **Evaluation** | nDCG, recall, mAP; dev/test discipline, latency budgets |
| **AI workflows** | Multi-agent development, model-role delegation, task decomposition, cost optimisation |
| **Research** | Semi-structured interviewing, qualitative coding and thematic analysis |
| **Spoken** | Swedish (native), English (fluent) |