

Sebastiaan Berlo

SebastiaanBerlo03@gmail.com · [LinkedIn](#) · [GitHub](#) · Amersfoort, Netherlands

Education

BSc Artificial Intelligence – Learning & Computation	2023 – 2026
<i>Utrecht University</i>	<i>Minor in Mathematics</i>
Coursework: Machine Learning, Natural Language Processing, Multi-Objective Optimization, Formal Languages & Computability, Databases, Experimental & Statistical Methods	
Mathematics minor: Linear Algebra, Analysis, Probability Theory, Groups & Rings (abstract algebra)	

Research

Bachelor’s Thesis – Quantum Computing	2025 – 2026
<i>Utrecht University</i>	
Studying foundational quantum algorithms and their complexity, from the circuit model and Quantum Fourier Transform through phase estimation and the Hidden Subgroup Problem to Shor’s algorithm	
Examining dequantization (Tang) to delineate where quantum algorithms provide genuine speedups over classical methods	
Explainable AI – Black-Box Model Interpretability	2025
<i>Academic Paper</i>	
Evaluated explainability methods for opaque ML models, assessing techniques for transparency and trustworthiness in AI systems	
Experimental & Statistical Methods	2024
<i>Utrecht University – graded 9/10</i>	
Designed and ran controlled experiments, applying hypothesis testing and statistical analysis to draw rigorous conclusions from data	
Principal Component Analysis	2024
<i>Mathematics Minor – research project</i>	
Investigated PCA for dimensionality reduction, connecting the linear-algebra foundations to practical data analysis	

Experience

Data Scientist	Apr 2025 – Aug 2025
<i>247TailorSteel – Varsseveld, Netherlands</i>	<i>Hybrid, Part-time</i>
Applied data analysis to optimize manufacturing processes using Python, Pandas and SQL	
Built an XGBoost regression model to predict production delays; preprocessed data with Scikit-Learn	
Computer Science Summer Tutor	Aug 2025
<i>Luzac – Hilversum, Netherlands</i>	<i>Full-time</i>
Taught core CS concepts (Python, SQL, HTML/CSS) to high-school classes for one month	
Tutor – Mathematics & Computer Science	Mar 2023 – Jun 2025
<i>Lyceo & Weekend Academie</i>	<i>Part-time</i>
Coached students in mathematics, programming and study skills across multiple educational settings	

Projects

HAGA FolderAssistent – RAG System	2025
<i>Information Retrieval / LLM – Python</i>	
Production-ready RAG system making 1,600+ Dutch patient PDFs searchable via natural language	
Hybrid search (BM25 + dense embeddings, RRF), HyDE enrichment; FastAPI, ChromaDB, GPT-4o-mini	
Customer Review Summarizer	2025
<i>NLP – Python</i>	
Gradio web app that summarizes Dutch customer reviews using a contextual language model	
Built a text-processing pipeline with spaCy, Pandas and HuggingFace Transformers	

Skills

Languages: Python, C#, Prolog, SQL	ML / Data: Pandas, NumPy, Scikit-Learn, XGBoost, HuggingFace
Tools: Git, Docker, Linux, JupyterLab	Spoken: Dutch (native), English (fluent)
Interests: Theoretical CS, Quantum Computing, Computability Theory, AI Safety	