

# Hélder Monteiro



AI scientist, engineer

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## SUMMARY

AI scientist and engineer with 10+ years of experience, 8 in data science and applied ML. Currently senior research scientist at NTT Security in Gothenburg, working on AI for cybersecurity: network security classification, LLM fine-tuning, and malware detection. Background spans IT security, media, real estate, oil and gas, and aviation.

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## EXPERIENCE

Senior Research Scientist Gothenburg, Sweden  
NTT Security Holdings Aug 2019 -- present

- Research and productionize AI for network security: event classification, suspicious URL profiling, and malware detection with CNNs.
- Built Text-to-KQL systems powered by LLMs, with guardrails, enabling natural-language query interfaces over security telemetry.
- Built SOC-KG: an agentic threat intelligence platform ingesting 25+ sources, extracting entities with local LLMs, and exposing a knowledge graph for analyst queries.
- Built Xyrus: an autonomous pentesting tool driven by AI orchestration, LLM reasoning, and tool use.

Data Scientist Gothenburg, Sweden  
Stampen Media Mar 2018 -- Jul 2019

- Built churn prediction, RFM segmentation, and a personalized news recommendation engine using content-based and collaborative filtering.
- Developed NLP pipelines for large-scale user profiling from article reading behavior, feeding targeting and recommendation systems.
- Delivered data pipelines and REST APIs on Azure and AWS; insights and dashboards via Power BI.

Data Scientist Lisbon, Portugal  
Freelancer Jun 2016 -- Feb 2018

- Built web crawlers and an anomaly detection layer for a PropTech real estate comparison platform; trained deep learning models for image-based property classification.
- Designed and deployed chatbots using early language models for client-facing interfaces.

Drilling Engineer Milan, Italy  
Eni S.p.A. Jun 2012 -- Jan 2016

- Planned and executed drilling programs for onshore and offshore operations across Italy, Congo, and Mozambique.
- Monitored real-time drilling data to detect operational deviations; collaborated with geologists and reservoir engineers on wellbore optimization and safe delivery.

Engineering Technician Maputo, Mozambique  
Linhas Aéreas de Moçambique Sep 2010 -- May 2012

- Coordinated scheduled maintenance and troubleshooting for fleet aircraft; managed leasing inspections and airworthiness documentation reviews.
- Assessed structural damage and developed repair instructions per OEM manuals; maintained the structural repairs database.

## PUBLICATIONS

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- [Autonomous Web Scraping with AI: A Config-Driven Approach](#) Book · 2026 ↗

A practical guide to production-ready web scraping using declarative JSON configuration and AI agents. Covers static and dynamic rendering, pagination, scheduling, MCP integration, and autonomous scraping loops.

## SELECTED PROJECTS

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- [OpenStitch](#) React · TypeScript · FastAPI · Python · Ollama · Docker ↗

Open-source AI UI design tool. Generates interactive frontend code from text, screenshots, or sketches on an infinite canvas; runs locally via Ollama.

- [Aprender Changana](#) Flutter · Dart · Riverpod · SQLite · just\_audio ↗

Cross-platform language learning app for Changana (Tsonga), A1 to C2 CEFR, with audio and offline support.

- [Bylgja](#) FastAPI · Next.js · Qdrant · PostgreSQL · TimescaleDB · Redis · Celery ↗

Multi-product SaaS platform for digital publishers: LLM chatbots (Chat), hybrid semantic search (Search), content recommendations (Curate), and newsletter intelligence with churn scoring (Pulse).

- [Conceitos](#) HTML5 · CSS3 · SVG · JavaScript ↗

Civic initiative reimagining Mozambican public digital services as interactive prototypes: 13 public service suites including health, justice, education, finance, academic records (Senda), and elections, each with five interconnected surfaces.

## EDUCATION

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MSc Computer Science and Engineering Sweden  
Luleå University of Technology Specialization: Applied Artificial Intelligence 120 ECTS

MA Language Technology Sweden  
University of Gothenburg 120 ECTS

BEng Mechanical Engineering India  
Visvesvaraya National Institute of Technology

## SKILLS

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### AI & ML

PyTorch · Transformers  
LLM fine-tuning (LoRA/QLoRA)  
RAG · Eval & red-teaming  
Classical ML (XGBoost, sklearn)  
Deep learning (CNNs, seq models)

### Agentic & LLM systems

Claude/OpenAI/Anthropic APIs  
Tool use & function calling  
Agent orchestration (LangGraph)  
MCP · Vector DBs (Qdrant, pgvector)  
Embeddings & semantic search

### Engineering & Platform

Python · Rust · TypeScript  
FastAPI · Docker · Kubernetes  
AWS & Azure · PostgreSQL  
OpenTelemetry · Grafana

## LANGUAGES

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Portuguese (native)   English (fluent)   Swedish (intermediate)