



Chris Blom

Senior Software Engineer

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Introduction

I am a dedicated and versatile software developer with an MSc in Artificial Intelligence and over 12 years of experience in developing innovative software in various domains.

I am a hands-on lead developer, besides coding I strive to empower the team by getting requirements clear, setting direction, providing the right tools and sharing my knowledge.

My expertise is designing and building reliable, fast backend systems for complex data processing. I can support the entire development cycle, from gathering requirements to design, architecture, planning, implementation, testing, DevOps, monitoring and optimization.

In addition, I have experience in AI applications such as automated planning and optimization with OptaPlanner/TimeFold, machine learning and natural language processing. I can also build web applications and dashboards to support these.

My goal is to deliver high-quality software that solves complex problems. To achieve this, I value understanding the problem, rapid iteration and collaboration with colleagues.

Experience

Senior DevOps Engineer at Ahold-Delhaize (freelance) 11-2021 to 01-2024

- ⦿ **Project: Baldr Available-To-Promise**, real-time stock inventory API for e-commerce SaaS
- I was project lead and responsible for design, development, testing, quality control and sprint planning. To meet the responsibilities I gathered requirements, designed APIs and participated in architecture meetings and scrum planning.
- Successfully delivered the project despite setbacks related to underestimated requirements, change in scope and employee turnover.
- I reimplemented legacy functionality in a modern event-based architecture using Kotlin, Kafka and MongoDB, capable of handling > 1000 req/sec
- Initiated development of a Kotlin library to connect to Ahold's Kafka-based messaging platform to enable exactly once processing, using the transactional outbox and idempotent consumer pattern. This library was also adopted by other teams, saving them months in development time.

Tech: Kotlin, Spring Boot, MongoDB, Kafka, Kubernetes, CDC, Gatling, ArgoCD

ThreadFirst Software 10-2021 to present

- ⦿ Founded my own company for my contracting and consulting activities, such as:
- Short feasibility study for tyro.school to check if Optaplanner or Google OR-tools are suitable to optimize high school time tables
- Building a real-time stock inventory service for Ahold

Senior Software Engineer at TimeSeries 12-2018 to 10-2021

- ⦿ **Project: Smart Rostering**: AI-based engine to create work schedules that conform to the Dutch Labour Laws, for nurses and call center employees
- Performed R&D to translate legal articles to OptaPlanner constraint solver code.
- Gathered requirements and fixed issues in consultation with the customer.
- Participated in sales calls with prospective customers to answer technical questions.
- Benchmarked and optimized the constraint solver code to ensure the solutions satisfied the customer.
- ⦿ **Project: Field Service Planner**: AI-based planning engine to schedule maintenance engineers
- I developed various extensions to this OptaPlanner based scheduler, debugged problems and implemented optimizations
- **Project: Eneco 1MeterReeks**, data platform for utility meters of 3 million customers
- Spearheaded migration from RabbitMQ to Kafka: improved scalability and observability.
- Managed and optimized Kafka and Cassandra clusters storing terabytes of data.
- Extended the platform with capabilities for extrapolation, interpolation & consolidation
- Investigated outages and bottlenecks in the platform and successfully implemented plans to avoid these problems from happening again.

Tech: Java 17, GCP, Big Data, Optaplanner/TimeFold, optimization, constraint solving, IoT, Kafka (Streams), RabbitMQ, Spring Boot, Cassandra, Postgres, Azure, Ansible

Lead Developer at AdGoji

4-2014 to 10-2018

AdGoji is a startup that buys ad inventory for its customers on real-time ad exchanges

- ⊙ Developed and operated a large scale Real Time Bidding platform for buying mobile ad inventory using AWS and Clojure, capable of reliably processing 100k+ requests per second with a p99 latency of 30ms and 99.9% uptime.
This platform ran profitably and reliably for 5 years with minimal maintenance.
- ⊙ Designed and implemented GitOps tooling, enabling team members to safely deploy updates, greatly reducing incidents and lowering time spent on DevOps.
- ⊙ Designed and implemented a high volume (600 MiB/s) ETL pipeline to offload data from Kafka to AWS S3 for processing by AWS Athena.
- ⊙ Setup monitoring and alerting to improve reliability: diagnosed and fixed scaling issues that were blocking revenue growth.
- ⊙ Performed cost optimizations resulting in a 10% reduction of the AWS bill.
- ⊙ Developed web applications to allow users to configure and monitor campaigns.
- ⊙ R&D to investigate if locality sensitive hashing could improve price estimation.
- ⊙ Became team lead in the last year. Initiated measures to improve code quality, lead planning sessions, coached team members to improve their skills in Clojure and AWS

Tech: Clojure, ClojureScript, AWS, Kafka, Datomic, Redis, Aerospike, Elasticsearch, DevOps, Infrastructure as Code, Docker, GitOps, Fulcro, Reagent, HTML5, CSS, Highcharts

Researcher & Programmer at SemLab B.V

6-2011 to 2-2014

SemLab is software company specializing in natural language processing (NLP) and decision support for legal and financial domains

- ⊙ **Project: ViCore**, *information extraction and sentiment analysis for financial news.*
 - R&D to add Named Entity Recognition capabilities to the product.
 - Setup an automated test suite and test corpus to ensure quality of the product
 - Investigated use of machine learning to improve NLP capabilities.
 - Modularized the code base to make it reusable for multiple customers.
 - Successfully adapted the product to new domains such as fraud detection for the Dutch Land Registry, and sentiment analysis for car reviews.
- ⊙ **Project: Crime Report Analysis**, *Research and development on a NLP system for the Dutch Public Prosecution Service to summarize crime reports and automate data entry*
 - Converted the company's NLP pipeline to the Storm framework to improve scalability.
 - Developed plugins for inference based on ontologies of the legal domain.
 - Served as main contact for the client regarding technical questions.
 - Introduced Continuous Integration, automated the delivery pipeline.

Tech: NLP, Java, Apache Storm, Semantic Web, RDF, Jenkins, Maven

Education

2009-2012: Master of Science in Cognitive Artificial Intelligence at Utrecht University

2005-2009: Bachelor of Science in Cognitive Artificial Intelligence at Utrecht University

Certificates

- ⊙ Specialization: Deep Learning, Coursera 2023
- ⊙ Specialization: Mathematics for Machine Learning and Data Science, Coursera 2023
- ⊙ Neural Networks and Deep Learning, Coursera, 2023
- ⊙ Basic Modeling for Discrete Optimization, Coursera 2023
- ⊙ Discrete Optimization, Coursera, 2022
- ⊙ Kotlin for Java Developers, Coursera, 2022
- ⊙ Aerospike for Developers, 2016
- ⊙ Aerospike: Administration and Operations, 2016

Technology

This list of keywords is here for completeness: after working with various languages and tools for over a decade I am confident I can pick up other skills as needed.

Languages	Java (10 years), Clojure (6 years), Kotlin (2 years), Python (4 years), SQL (4 years), Haskell, Rust, Bash, Scheme
Messaging	Kafka, Kafka Streams, RabbitMQ, Storm, Onyx, JMS, AMQP, MQTT
Testing	Property testing, JUnit, Kotest, Mockito, TestContainers, JMeter, Gatling
Frontend	Reagent, Fulcro, Re-Frame, React, HTML, CSS
Backend	Spring Boot, Spring Cloud, microservices, REST, OpenAPI
Tools	Git, Emacs, IntelliJ, Maven, Sonar
DevOps	Kubernetes, Terraform, AWS CloudFormation, Ansible, Docker, Linux
Observability	Grafana, Prometheus, AWS CloudWatch, Micrometer, Kibana, Dynatrace
Databases	Datomic, MongoDB, Elasticsearch, Redis, Postgres, Aerospike, Cassandra
Cloud	Amazon Web Services, Google Cloud Platform, Azure
AI	Rule based AI, Natural Language Processing, Keras, Machine Learning
Optimization	Optaplanner/TimeFold, Google OR-Tools, MiniZinc
CI/CD	Jenkins, CircleCI, Github Actions, TravisCI
Agile	Scrum, Kanban

Languages

I am a native Dutch speaker and speak fluent English. I can speak basic German and French, but not on a professional level.