

Artur Siekielski

Search / Backend Engineer

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PROFILE

Backend engineer specializing in search and data-intensive applications. I focus on solving the specific problem rather than applying a particular technology or architecture. My experience includes building custom search and discovery tools, tuning search relevance using techniques tailored to the specific use case, designing well-structured backend systems and domain models, as well as building data processing and AI-assisted applications.

CORE EXPERTISE

Search & Discovery	Search applications, search relevance tuning, Elasticsearch, LLMs in searching, keyword discovery, query intent analysis, custom search engines
Backend Engineering	Backend architecture, domain modeling, distributed systems, custom backend components
Data & AI	Large-scale data processing, large-scale databases, AI-assisted applications, LLM integration
Product Ownership	Creating products from scratch to meet business needs, inventing new products, incorporating new and custom technology into existing products

EXPERIENCE

The Shelf Influencer Marketing Agency (Atlanta, US)

Remote

Senior Software Engineer

February 2018 – April 2026; Sabbatical: May–September 2026

Worked in a small engineering team with significant ownership over backend architecture, technology selection, R&D initiatives and implementation of new platform capabilities, covering distributed systems, search infrastructure, AI agents and data processing.

Search

- Designed and implemented from scratch a specialized influencer discovery engine supporting multi-topic searching across thousands of keywords and tens of millions of social profiles.
- Tuned search relevance for the specific needs of influencer discovery, experimenting with query strategies, signal-based boosting and external data to improve relatedness and ranking.
- Redesigned the Elasticsearch integration for infrastructure handling millions of influencers and hundreds of millions of social media posts.
- Created advanced keyword suggestion algorithms leveraging data collected from millions of influencer profiles.
- Designed and developed a feature-rich influencer search web application that became the company's primary tool for campaign sourcing.

Backend & Data

- Created and maintained a web scraping system running on Nomad and EC2 Spot fleets, supporting hundreds of millions of individually scheduled tasks with priorities, retries, recovery and resource allocation.
- Redesigned the backend architecture by introducing a dedicated domain layer, improving code maintainability and separation of concerns.
- Researched, designed and implemented custom backend components including a Named Entity Recognition (NER) service, a proxy server for scraping and a library for advanced scraping based on Chrome DevTools Protocol (CDP).
- Designed a data analysis pipeline based on DuckDB and ClickHouse.

AI

- Designed and implemented two kinds of AI agents supporting influencer discovery and campaign targeting workflows.
- Developed an internal framework for integrating LLMs with structured database data using template-driven JSON workflows.
- Designed technical documentation and a runbook to enable new AI-assisted workflows.

Technologies: Python, PostgreSQL, Nomad, Elasticsearch, AWS, ClickHouse, Cassandra, Terraform.

Monique.io

Founder & Backend Software Engineer

Gdynia

December 2014 – October 2018

Founded and developed Monique.io, a SaaS monitoring platform and Heroku Add-on for creating dashboards and alerts from heterogeneous data sources. As the founder and sole engineer, responsible for product strategy, architecture, technology selection, implementation and operations.

- Identified customer needs and designed product capabilities spanning data ingestion, visualization, alerting and automation.
- Designed intelligent data parsing algorithms for extracting structured information from JSON, SQL results, command output and tabular text formats.
- Built a scalable storage layer based on Cassandra and a sandboxed alerting engine based on Google's V8 JavaScript engine.
- Designed and implemented REST APIs, deployment tooling and operational infrastructure.

Technologies: Python, C++, Cassandra, JavaScript, RabbitMQ.

EARLIER EXPERIENCE

Vector (hardware & software company)

Software Engineer

Gdynia

June 2011 – October 2012

Developed backend parts of a telemetry M2M system used in major Polish cities by heating and water supply companies, including a new alerting system and a GUI application for controlling telemetry devices using custom protocols. Technologies: Java, Hibernate, JBoss Seam, Python, PyQt.

SolDevelo (software development company)

Software Engineer

Gdynia

September 2010 – June 2011

Developed a microfinance banking application, Mifos, used mainly in developing countries. Implemented new features related to fee payments, fixed bugs and analysed functional specifications. Technologies: Java, Spring, Selenium.

Nordea (international financial corporation)

IT Analyst

Gdynia

April 2009 – July 2010

Developed Nordea e-banking system for Poland and the Baltic countries, including the main online e-banking web application for customers and call centers. Worked on maintenance as well as new components related to foreign transfers. Technologies: Java, EJB, Weblogic, Oracle PL/SQL.

Lufthansa Systems (international aviation IT corporation)

Software Engineer

Gdańsk

April 2007 – April 2008

Worked on maintaining a flight planning system and internal tools, including backend components of a project-planning web application, a tool for generating NOTAM messages, and features in Lido projects related to the NOTAM domain. Technologies: Java, OpenROAD, PL/SQL, Unix.

EDUCATION & ACADEMIC EXPERIENCE

University of Gdansk

M.Sc. Computer Science

2002 – 2007

Final grade: Very Good (5.0).

I collaborated with researchers from the Polish Academy of Sciences (IPI PAN) and the Academy of the Navy, developing software tools. One of them was an application for generating optimal castaway search paths using AI and genetic algorithms. The other was a model checker implemented in Haskell which supported a new kind of Petri nets called Hypernets. The latter work became the basis of my Master's thesis.

TECHNOLOGIES

Languages

Main: Python, Java, JavaScript. Supplementary: C++, Go, Rust, Haskell, OCaml

Search & Data

Elasticsearch, PostgreSQL, Oracle, ClickHouse, Cassandra, DuckDB

Infrastructure

AWS, EC2 Spot Fleets, Nomad, Docker, Terraform, Linux

AI / NLP

LLM APIs, LiteLLM, Langfuse, Named Entity Recognition, SpaCy