Artur Siekielski

Backend Engineer

Gdynia / Gdańsk, Poland
asiekielski@vhex.net
linkedin.com/in/artur-siekielski-324919316

PROFILE

Backend engineer with 17 years of software engineering experience, designing and building production backend systems and data-intensive applications. Experienced in distributed processing, backend architecture, domain modeling and infrastructure automation. I focus on solving the specific problem rather than applying a particular technology or architecture, and have a strong track record of taking complex technical problems from design through production implementation. Hands-on experience with Python, PostgreSQL, AWS, containerized workloads and infrastructure tooling.

CORE EXPERTISE

Backend Engineering	Backend architecture, domain modeling, API design, distributed systems, custom backend components
Distributed Systems	Large-scale task processing, scheduling, priorities, retries, recovery and resource allocation
Data & Infrastructure	Large-scale data processing, PostgreSQL, Cassandra, ClickHouse, DuckDB, AWS, Nomad, Docker, Terraform
Search & AI	Elasticsearch, search and discovery systems, relevance engineering, LLM integration, AI-assisted applications
Technical Ownership	Requirements analysis, technology selection, architectural trade-offs, end-to-end implementation and product development

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.

Backend Architecture & Distributed Systems

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

Search & Data

- Redesigned Elasticsearch integration for infrastructure handling millions of influencer profiles and hundreds of millions of social media posts.
- Designed and implemented a specialized influencer discovery engine supporting multi-topic searching across thousands of keywords and tens of millions of social profiles.
- Tuned search relevance and developed keyword suggestion algorithms using data collected from millions of influencer profiles.
- Designed and developed a search web application that became the company's primary tool for campaign sourcing.

AI

- Designed and implemented 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.

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

Monique.io **Gdynia**
Founder & Backend Software Engineer *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 founder and sole engineer, responsible for product strategy, architecture, technology selection, implementation and operations.

- Designed product capabilities spanning data ingestion, visualization, alerting and automation.
- Designed data parsing algorithms to extract 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) **Gdynia**
Software Engineer *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) **Gdynia**
Software Engineer *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) **Gdynia**
IT Analyst *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) **Gdańsk**
Software Engineer *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 (IPIPAN) 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