

Ahmad Alhour

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Summary

A generalist software engineer and tech leader with 15+ years of work experience building cloud-based SaaS products with full-stack involvement: from frontends (web, mobile) to cloud infra (AWS, GCP) all the way through APIs, databases and services, with a speciality in building data-intensive distributed systems.

Lately, I have been working on Apache HBase, an open-source database alternative to Google Bigtable.

Work Experience

HubSpot

Senior Software Engineer II, Data Infra

Dec 2023 - Present

Munich, Germany

- Working on the HBase database team, collaborating with the open-source community and orchestrating the deployment & scalability of 20+ DB clusters with 2000+ machines in 5 production datacenters
- Contributing to the Apache HBase open-source database (see: GitHub commits)
- Improved reliability of HBase clusters by implementing automatic memory tuning which decreased the occurrence and likelihood of OOMs and memory-related incidents
- Introduced Chaos Testing to HBase, which improved the correctness of new HBase releases in the company taking them down to less than 1 day
- Worked on HubSpot's initiative to scale it's infra to 5 datacenters in 2024
- *Tech Stack: Java, HBase, Kubernetes & AWS*

Shopify

Staff Software Engineer

Jan 2022 - Sep 2023

Munich, Germany

- Re-designed the merchant eligibility distributed system and moved it's signals from batch to real-time which improved the end-to-end latency of product re-indexing by 99.98% (from 48h down to 32s) which enabled the onboarding and offboarding of 2M+ merchants & 2B+ products in near-real-time
- Scaled the Product Understanding infrastructure to process machine-learning classification updates for products in real-time, going from 100K to 140M in 24h (140%) by scaling Redis, MySQL & Sidekiq workers
- Led the Shop Promise project across 3 teams, by designing the GraphQL API, backend services and UI integrations on the mobile app, and released it to 100M+ buyers on the Shop app marketplace worldwide
- Led Shop's Merchants Experience Group (7 teams; 40 engineers) to prepare for BFCM 2022 by designing load tests, scalability and fail-over plans which led to handling an anticipated 10x load: 8M+ merchants, 100M+ buyers and \$7M+ in GMV (see: news.shopify.com/bfcm-record-stats...)
- Mentored my direct team on writing system design proposals, monitoring, observability & incident response
- *Full-stack development using RubyOnRails, Sidekiq, Python, Spark & Flink, Kafka, Vitess & GCP*

AutoScout24 (AS24)

Engineering Manager

Aug 2020 - Jan 2022

Munich, Germany

- Managed a team of 8 senior engineers on making Europe's biggest car marketplace more safe and fraud-free
- Spearheaded the design, project management & stakeholder alignment for migrating AS24's Identity system to Scala, AWS & Okta which increased user growth by 37%, powering 20M+ users on iOS, Android & Web
- Re-designed the car-listings creation flow by incorporating machine learning classifications which decreased fraud listings by 40% and lost leads by 95% which led to increasing sales by 33%
- Mentored my direct team on software architecture, managing risks in software projects & soft skills

KI labs

Data Engineering Lead

Sep 2019 - Aug 2020

Munich, Germany

- Led a team of 6 data engineers across project planning, architecture, implementation & delivery
- Designed cloud-based big data platforms for Daimler, Lufthansa & JTI on AWS & GCP using modern data stacks such as: Snowflake, Databricks, Delta Lake, Google BigQuery & Apache Spark
- Open-sourced *kaos*, a platform for simplifying Machine Learning deployments on the cloud (AWS & GCP) based on Python, Pachyderm, Terraform, Docker & Kubernetes: github.com/KI-labs/kaos

- *Full-stack development using Python, Java, Apache Spark, Apache Storm, Docker, Kubernetes, AWS & GCP*

TrustYou

Tech Lead

Jan 2016 - Sep 2019

Munich, Germany

- Led the Data team working on the Analytics Pipelines, processing 7M new hotel reviews weekly
- Led partnerships work with Glassdoor & Indeed, scaling TY's data platform to company reviews
- Led the Connect team, an API SaaS platform for integrating hotel partners with TrustYou
- Designed public API platforms for integrating big OTAs with TY, e.g.: Booking.com, TripAdvisor & Google Places, which increased TY's hotel portfolio from 40K to 400K (10x)
- *Full-stack involvement using Python, Java, PostgreSQL, Docker, Kubernetes, Hadoop, Apache Spark & Kafka*

CCC, D1G, CommunitiesTech, Freelancing

Software Engineer

Feb 2007 - Dec 2015

Multiple locations

- Several software engineering roles at different companies and locations. For more information, please refer to my LinkedIn profile: [linkedin.com/in/aalhour](https://www.linkedin.com/in/aalhour)

Education

B.Sc. Degree

Computer Science

Princess Sumaya University for Technology

Sep 2007 - Jun 2011

- *Capstone project: Natural Language Processing & Sentiment Analysis applications for Arabic Twitter.*
- *Participated in the global IEEEExtreme programming competition (9th place worldwide).*
- *Participated in the regional ACM ICPC programming competition.*

Side Projects & Open Source

Open-Source

- **Apache HBase:** An open-source Apache alternative to Google Bigtable, I shipped a few features and bugfixes: github.com/apache/hbase/commits?author=aalhour
- **kaos:** A platform for simplifying Machine Learning deployments on the cloud (AWS & GCP) based on Python, Pachyderm, Terraform, Docker & Kubernetes: github.com/KI-labs/kaos

Web Dev

- Cookiecutter template for developing async Web APIs in Python 3 with SQLAlchemy's ORM: github.com/aalhour/cookiecutter-aihttp-sqlalchemy

Educational

- Portable C# library of 35+ Data Structures and 30+ Algorithms: github.com/aalhour/c-sharp-algorithms
- COOL Language compiler, targeting the MIPS 32-bit architecture: github.com/aalhour/PyCOOLC
- 16-bit machine code assembler for the Hack Assembly language: github.com/aalhour/Assembler.hack
- Various other open source projects and utilities: <https://github.com/aalhour>

Technical Skills

Programming Languages

Python, Ruby, JavaScript, Golang, Java, Kotlin, C#, C/C++

Web Frameworks

Rails, Flask, FastAPI, Django, React.js

Data Frameworks

Apache Spark, Apache Flink

Storage

MySQL, PostgreSQL, Vitess, Kafka, HBase, Bigtable, MongoDB, DynamoDB

Areas of Expertise

Distributed Systems, Software Architecture, Data Engineering, Web Apps