

# Alexander Moore-Niemi

Software Engineer

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## Keywords

Languages Java, Rust, Python, Ruby, Typescript  
Tech Faiss, Elasticsearch, Lucene, Unix, AWS, Spark, Kubernetes  
Domains Search, Big Data, NLP, Observability

## Professional Experience

- 2021 – **Senior Software Engineer III**, AMAZON, Boston.  
Working on Web search based question answering for Alexa. On call. Production standards include A/B tests.
- 2022 Launch of Faiss indices in Eureka to serve dense and hybrid retrieval
- 2021 Launch of "Eureka," custom Rust search engine on Amazon ECS, leading operational readiness review and contributing to security review. Tech lead for team when scaling from 2 people to 20.
- 2017 – 2021 **Software Engineer II**, AMAZON, Boston.
  - 2021 Implementation of CloudAuth (Amazon internal distributed OAuth protocol) client in Rust
  - 2020 Work with Applied Scientist on port of PISA cpp library into Rust with deployment on Amazon EKS (Kubernetes) as foundation of custom search engine
  - 2020 Work with Applied Scientist on spam filtering pipeline. Presented paper on spam filtering in AMLC (Amazon Machine-Learning Conference), 2nd author.
  - 2020 Used custom "hyper-parameter tuning" to cut cost (millions of dollars per year) of Elastic-search infrastructure while improving performance; enabled us to quadruple index size.
  - 2020 Spark infrastructure for indexing hundreds of millions of documents.
- 2017 – 2019 Work on configurable DAG of RPC services in Java and Python, serving 1000-10,000 TPS.
- 2016 – 2017 **Software Developer**, RAIZLABS, Boston.  
Consultancy. Building scalable, performant cloud REST APIs to serve iOS apps.
- 2014 – 2016 **Software Engineer**, ZIPCAR, Boston.  
Building Ruby and Java services. On call and release engineer.
  - 2016 Contributed microservices in Java/Go during rewrite using inhouse SOA framework.
  - 2015 Work on core platform to support secure vehicle mobile unlock.
  - 2014 "Fleetsharing" with Avis cars while also improving vehicle availability.

## Education

- 2019 **Certificate: Machine Learning University ("MLU") Math**, Amazon, Boston.
- 2012 **Certificate: Computation and Algorithms**, MIT, Boston.