Alex Gaas / Software Engineer

A software engineer with over 20 years of experience in building robust, reliable, scalable and intelligent software solutions.

Key skills:

- strong problem-solving skills
- self-starter, individual contributor, platform-agnostic engineer
- ability to create complex systems based on specialized algorithms and data structures

Education:

- Master's degree of Computer Science

Qualifications (coding and development skills with experience in):

- object-oriented programming
- dependency injection
- creating sufficient unit and integration test specifications and simulations to reflect real system use cases
- patterns for building concurrent, distributed, and resilient message-driven applications
- modern cloud solutions - AWS, Azure
- *Go* paired with Docker for efficient development

Tags: Go, Docker, DI, OOP, AWS, Azure, Redis, Opensearch, s3

Cloud-based skills (proficient to/with build services and libraries):

- services based off AWS Lambda, AWS Elastic Container Service and Kubernetes
- AWS CDK, Terraform to manage services in the cloud space
- AWS metrics, alerts, dashboards and Cloudwatch logs to provide efficient observability

Tags: AWS Lambda, Step Functions, Cloudwatch, SQS, SNS, ECS, DynamoDB, ALB, API Gateway, Amazon IAM, Azure EntraID, Terraform, AWS CDK, Kubernates

Identity (proficient to/with build services and libraries):

- custom data storage solutions based off Redis, Opensearch and s3
- private PKI services (with automation of generating, signing and managing of x509 certificate chains)
- identity providers with support of OAuth, OIDC, SAML
- device posture in the private networks
- secure libraries between identity services with TLS/mTLS

- DNS based services
- PIV based off Yubikeys

Tags: acm-pca, OpenSSL, TLS / mTLS, Kerberos, PKI, IdP, Yubikeys

Personal projects and articles:

- Rate limiter within bucket quote algorithm as package and example of it's usage with service and basic AWS lambda running on the Docker - rate_limiter
- Comprehensive notes on how to build effective scalable parallel and distributed aggregation of data (group by) - agg
- Tiny but very useful utility Go library to manipulate slices - slices
- Framework to manage prometheus metrics for your Go service - metrics
- Bayesian optimization strategy implementations:
  - Hash-based to identify best option for set of compression algorithms - exploit-explore
  - Gaussian randomization to evaluate best score for Wu-Manber, Aho-Carasic, Horspool search algorithms - search3

Experience (years / company):

2019 - current*: *Slalom Build

- I am a senior enggineer who as part of team built and manages a cloud-based high-scalable Identity and Access Managament platform for Large Sattelite Communcications Company
- I own and manage Tier 1 services across the whole platform, including reliability metrics. As senior engineer I create specifications of service design as per-reivew document(s), define service scope and non-functional requirements
- As a skilled software engineer I build and manage a custom infrastructure components in the platform (such as advanced retries strategies, rate limiters, specific cache systems) to achieve both high stability and scalability of platform

2015 - 2019*: *Productive Edge

- As a senior software engineer I was working on variety of projects
- Developed car parking platform including both frontend and backend to achieve online system to track 5000+ parking spots

2012 - 2015*: *ESRI

- As a senior software engineer developed and maintained ArcGiS Server
- Developed a parallel IO pipeline subsystem to manage 100s GB of spatial data logs to achieve performance improvement 12 times more then previews solution

- Designed and implemented geospatial data output through REST API aggregated by layers for ArcGiS Online platform used by millions of users accross the world

2005 - 2011*: *Devexperts

- As a software engineer, I have successfully developed and maintained a highly efficient quote distribution platform
- Developed a highly efficient and scalable data structure using hashmaps to facilitate parallel aggregation and achieve optimal consolidation of millions stock quotes into specific trading charts