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Profile

Software engineer with a Master's degree in Computer Science and over six years of professional experience covering frontend, backend, infrastructure and mobile applications. In the last three years my focus has been shifted heavily to Go, React, microservice architecture, distributed systems, DevOps and site reliability engineering.

Experience

October

San Francisco Bay Area, USA

Lead Architect — **Jan 2018 – Now (1 year 2 months)**

Working at a VC-financed Silicon Valley startup as a tech lead for backend and infrastructure building and launching a visual & pseudonymous social media platform `https://october.app`.

- Solely responsible for structuring the backend and making all the architectural decisions for extending and scaling up the platform on AWS using Go, Terraform & Ansible.
- Implemented a WebSocket architecture enabling users to get real-time updates using nginx, ELB & NATS
- Refactored the in-memory graph database into gRPC service to improve resilience and increase flexibility
- Profiled API requests, fixed CPU & memory bottlenecks, analyzed and optimized SQL queries to improve response times by an order of magnitude
- Designed an internal code generation tool to automate boilerplate code creation of API middlewares (logging, instrumentation, user activity recording) and documentation
- Added user engagement metrics and implemented tools to analyze and create weekly KPI reports
- Implemeneted and managed the internal GraphQL API

Selected Achievements

- Managed the launch of the October social app, hardened the system, performed stress tests and refactored the infrastructure from a monolith into a load balanced service architecture while constantly monitoring the platform, detecting outliers, deploying improvements and reacting to alerts
- Analyzing the platform at all times from a full-stack perspective, communicating requirements to frontend developers, profiling web app speed load, adding caching layers and integrating a CDN
- Served at all times as the technical authority for performance, scaling and security questions
- Continuously optimized the software engineering process for all team members, i.e. introducing new scripts for automation, sped up CI/CD process, revamped dependency management and containerized the environment using Docker

Senior Software Engineer — **Jan 2017 – Dec 2017 (1 year)**

Joined as employee #1 and built the backend for October in Go. Rewrote the existing API into a RPC API based on WebSocket using a JSON-based protocol. Set up and managed CI and automatic deployment. Solely responsible for the infrastructure on AWS running the platform using EC2, ECS, S3 and RDS.

- Designed and implemented the public API for our mobile and web app rolling a custom framework
- Implemented majority of application logic (user authentication, posting, social interaction, etc.)
- Created the initial server layout on AWS, implemented infrastructure as code using Terraform
- Introduced structured logging & instrumentation and made it accessible via Kibana & Datadog
- Refactored the entire code base (70k LOC), reduced package dependencies & increased testability
- Implemented an image manipulation service with ImageMagick to process user generated images
- Consulted and maintained an in-memory graph database written in Go
- Implemented a command log (cf. write-ahead log) for the in-memory graph database using protobuf
- Remodelled the database schema and managed a contractor for migrating RethinkDB to PostgreSQL
- Profiled code to find and fix bottlenecks, race conditions and deadlocks using pprof
- Continuously developed and extended internal admin tools using React

tape.tv

Berlin, Germany

Backend Developer

May 2016 – Jan 2017 (11 months)

- Working as a backend engineer at Berlin's largest music video streaming provider
- Implementing microservices in Go with Go Kit using PostgreSQL and Redis
- Integrating services including Fastly, Datadog, Fluentd and Kibana
- Implementing HTTP Live Streaming (HLS) to deliver live video streaming on scale by wrapping and utilizing ffmpeg, the nginx-rtmp module and generating playlists dynamically to support features like looping or fallback sequences to improve resilience
- Designed an architecture to manage multiple RTMP streaming ingests, forwarding them to different live video platforms including Facebook Live and YouTube
- Working closely with the mobile application team to improve video playback on Android and iOS
- Implemented a distributed load testing tool to measure the performance of the video live streaming service by using Go and tools like JMeter and Bees with Machine Guns
- Improving quality assurance with Consumer-Driven Contracts using Pact to implement microservice integration tests that can be run in isolation
- Setting up infrastructure on AWS using Amazon ECS, Docker and Terraform
- Helped on production sites to set up hardware equipment for video recording, improving local network environment and monitored the system's health during live events

Mixlr - Social Live Audio

London, United Kingdom

Full Stack Developer

Mar 2014 – Apr 2016 (2 years 2 months)

- Working at a challenging startup on a live audio streaming and broadcasting service
- Backend web development using Ruby on Rails, Redis, Resque and PostgreSQL
- Frontend web development using JavaScript, Backbone, Haml and CSS (Sass)
- Collaborating directly with CTO and CEO to conceive and develop new features and services
- Development on core REST API serving all Mixlr clients: Android, iOS, desktop and web application
- Continuously extending billing functionality using the Stripe API for Mixlr's paying customers
- DevOps tasks using Puppet, Amazon Web Services (AWS), Nginx and HAProxy managing 30 servers
- On call responsibilities for server health applying countermeasures when necessary using PagerDuty

Selected Achievements

- Helped to grow the company to become profitable
- From conception to implementation, sole developer responsible for building and shipping the Mixlr Android application – with over 1 million downloads and an average rating of 4.3 / 5
- Implemented a multi-threaded audio streaming engine, capable of proxying low latency live audio from multiple sources to thousands of listeners using Java and Node.js on the HTTP and RTSP stack
- Built a real-time chat and live user interaction system on top of a push notification system

Fraunhofer FOKUS

Berlin, Germany

Software Engineer

Jan 2013 – Mar 2014 (1 year 3 months)

- Collaborated with the Federal Ministry of the Interior to build an open data platform
- Designed and implemented data harvester and analyzer in Python, CKAN and RabbitMQ
- Built a web platform to assess data quality of metadata using Ruby on Rails, MongoDB, Sidekiq, jQuery, d3.js analyzing million of records

Berner & Mattner

Berlin, Germany

Software Engineer

Mar 2011 – Sep 2011 (7 months)

- Lead development for a public transport train simulator in C# on the .NET platform
- Worked closely with an in-house designer to implement graphics and animations using WPF

Education

M.Sc., Computer Science, Freie Universität Berlin — **Berlin, Germany – 2014**

B.Sc., Computer Science, Freie Universität Berlin — **Berlin, Germany – 2011**

Awards

Student Contest on Software Engineering (SCORE) — **Honolulu, USA**

Overall Winner Award in the finals on the ICSE 2011 — **2010 - 2011**

- Built a course scheduling platform using Java, PostgreSQL, XSLT and jQuery
- Designed and implemented a genetic and greedy algorithm for automatic resource allocation