ISSA ALKHOURY

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About Me

I am a passionate Software Engineer and Cloud Architect focused on delivering high quality, efficient, and reliable solutions. I find interest in designing cloud native services that help in extracting value out of business data or automating a business process.

My priority in any software project is delivering features to the customer that help them make the right impact in their organisation. I advocate for the incremental delivery of value along with continuous evaluation and improvement of the product. I also believe in cross-functional agile teams that work together in an end-to-end delivery process while adhering to good software development practices.

Experience

ThoughtWorks / Amsterdam, the Netherlands

May 2022 – Present

ThoughtWorks is a leading technology consultancy that has recently expanded to the Netherlands. I have joined the growing team as a Solution Architect to help design and develop modern and effective solutions in order to help our clients achieve their digital transformation and data driven goals.

I have been working in the role of Technical Lead across several industries in Europe such as automotive and logistics. My responsibilities have included stakeholder management, team leading, technical advisory, and solution architecture for software and cloud systems.

I strive to ensure my stakeholders' needs are met by the technical solution through continuous consultation and feedback sessions. Project constraints are considered to provide optimal decision making and increase stakeholder value.

Automotive Industry

I lead a team that built an automated system using Python to scrape pricing information for car models and provide insights into price changes over time. The data was processed using Google Cloud Compute Engine & Storage Buckets and queried using Google Cloud BigQuery and Looker Studio.

The system had to be built incrementally based on stakeholder needs therefore we had to go through several sessions of requirements analysis and brainstorming with our users to map out their existing business process and identify areas for automation and improvement.

Logistics Industry

We were asked by our client to help them optimize their AWS cloud usage and software development lifecycle. I lead two teams that tackled each of these areas following well-defined OKRs in alignment with our client's business goals. Our joint efforts resulted in a 30% decrease in infrastructure costs. Regarding their software delivery process, the primary service selected decreased its lead time for changes from 4 to 2.8 weeks, resulting in a 20% decrease in QA team rejections and an increase in deployment frequency from four weeks to one week. Furthermore, our initiative cultivated a culture of accountability, with teams taking ownership of service costs and deployments, ensuring alignment with budgetary constraints.

Manufacturing Industry

I was part of a data engineering team that set out to build a next-generation data platform for our large manufacturing client that can benefit from the scalability of the Data Mesh principles. We started with requirements gathering and prioritization to understand the most valuable data use cases that should be supported by the platform first. We used them to design a minimum viable product (MVP) data platform with two tiers: A Core offerings tier composed of Storage, Compute, Data processing, Management and Governance services, and an Extension offerings tier composed of Data warehouse, Business Intelligence, Notebooks, and Compliance services. The design followed the Lakehouse architecture and tiered data processing model. This MVP would grow to encompass the full principles of Data Mesh.

Anchormen / Amsterdam, the Netherlands

January 2020 – April 2022

Anchormen is a data-driven company which delivers services in consultancy, training and support in Machine Learning, Data Science, and Artificial Intelligence.

I am a DevOps consultant that helps customers unlock new opportunites using their data and improve the architecture of their distributed systems. I usually design and provision cloud infrastructure, along with the development of data oriented applications to allow our customer to analyze insights generated from his data. Notable projects include:

Real Estate Industry

I assisted in designing a solution for ingesting IoT sensor data into an Azure backed data platform to provide operational reports over the assets managed by the company. This dashboard tracked aggregated sensor data and sustainability KPIs set by the company's target goals. We also experimented with a digital twin graph using Azure's Digital Twin service by modeling real world

asset structures from CSV and IFC files and tracking their latest state using a live feed of sensor metrics.

Gambling & Entertainment Industry

I worked with the Azure data platform team on expanding and improving the automated process of provisioning infrastructure using Terraform. I had to deal with core constructs such as Virtual Networks and Security, middleware resources such as EventHubs, and high-level platforms such as App Service Plans. In addition, I helped establish a central NLO operations team for managing core and global cloud services. We then created a set of standards and best practices for using NLO's cloud environment and developing cloud native applications. This was done in a collaborative process with NLO's application and infrastructure leads.

Financial Industry

I set up a machine learning platform in Tinka's AWS environment based on AWS SageMaker. I helped the team standardize their machine learning workflow and automate it using various SageMaker features. I also initiated data cataloging in AWS Glue in order to facilitate data discovery and exploration across Tinka's diverse data lake using AWS Athena.

Financial Industry

I helped onboard the data team onto AWS SageMaker studio and supported the data scientists with the development of their first machine learning use case on AWS. The underlying infrastructure was provisioned using terraform.

Education Industry

I held meetings with our stakeholders in order to gather requirements and understand the needs of having a digital research environment. I then designed and implemented a cloud agnostic research environment as a platform for both researchers and students. Researchers gained access to dedicated computing power in the cloud while students collaborated in a shared workspace with their teachers that was easily accessible using a browser. The environment consisted of several data science platforms such as JupyterHub and RStudio. The system is managed using automated tools such as ansible.

Retail Industry

I designed and implemented a system architecture for a 3-tier application on the Azure cloud. The application consists of a frontend SPA, a backend API, and an Azure SQL database.

The infrastructure was developed first using ARM templates, but it was later migrated to Terraform.

Telecommunications Industry

I worked on an API Gateway that fronts all KPN IoT APIs. The gateway acts as the entry point to the IoT services and enforces security at the perimeter using TLS termination and user authentication. The authentication and authorization framework are based on the OpenID connect standard.

In addition, I introduced the concept of Zero Downtime Deployments. I helped the team to improve the software delivery pipeline in order to shorten the release cycle. I also introduced best practices for safely evolving a running service in order to preserve backwards compatibility and provide an easy rollback path.

Relay42 / Amsterdam, the Netherlands

October 2018 – December 2019

Relay42 is a mark-tech company that provides a customer data management platform and intelligent journey orchestration engine that help you personalise your user's experience across all your connected channels.

I was a backend software engineer responsible for a service that handles the integration of relay's platform with all external marketing platforms. This required the design of a highly efficient service that can handle the traffic generated by the orchestration engine, while being extremely resilient to the failures that can happen at the integration points with other systems. Notable projects include:

- Developed a Java based service that processes huge volumes of data from AWS Kinesis and routes them to external data partners through their public APIs. The service must be efficient and scalable to easily absorb spikes in traffic, while being resilient to external errors and gracefully resume normal operation.
- Augmented an existing Java based service to store aggregated statistics in AWS RDS and added the needed endpoints to query the data for charts and reports.
- Infrastructure-as-Code to automate environment provisioning and configuration using Terraform and Ansible.
- Worked in a multi-cultural organization.
- Worked in cross-functional teams.
- Manage and monitor tasks using JIRA.

Smarty Systems / Zalka, Lebanon

February 2017 – August 2018

Smarty was a young data oriented startup that set out to discover and analyse the huge online world of news. It provided a platform for users to discover news using a combination of search filters that can understand the content. Smarty also tracked the performance of news

content over time on social media, allowing the user to view real time insights about what is trending around the world.

I was responsible for implementing the data infrastructure that handled the storage and querying of Smarty's data which powered the end user application.

I needed to support a variety of data types and storage technologies that allowed the analysis of huge amounts of full-text and statistical data. Notable projects include:

- Designed a service that ingests an online stream of news document and store them in Elastic Search. APIs where exposed to search for documents. I was heavily engaged in search optimization to find similar news articles relevant to user queries.
- Designed a service that ingests social media statistics and store them in a data warehouse. We used Apache Kudu as our datastore. Other solutions were tested such as Apache Druid and Vertica. APIs where exposed to query and aggregate statistics across dimensions.
- Designed a service for streaming live news to the user based on custom filters.
- Designed a service for ingesting social profiles and interests and creating an actor graph using Neo4j. APIs where exposed to discover patterns and relationships in the graph.
- Realtime online processing of statistics to calculate metrics such as trend that feed to a machine learning API for online prediction. The real time processing was done using VoltDB, a fast in-memory RDBMS.
- Maintain these set of microservices based on Spring Boot and the Spring Cloud stack. Embracing techniques such as service discovery using HashiCorp Consul.
- Work in cross-functional teams. The feature would span backend (data storage and query API) and front end (integration with API). Therefore, API contracts had to be established before-hand and well documented.

Education

B.S in Computer Science / June 2017

Graduated from Notre Dame University, Lebanon.

Language

- Arabic (Native Proficiency)
- English (Professional Proficiency)
- French (Limited Working Proficiency)
- Dutch (Elementary Proficiency)

Certification

Amazon Web Services

- AWS Certified Solutions Architect – Associate
- AWS Certified Developer - Associate
- AWS Certified SysOps Administrator - Associate
- AWS Certified Advanced Networking - Specialty
- AWS Certified Security - Specialty
- AWS Certified Database - Specialty