Samer Makary

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Atlanta, USA

Professional Profile

Full-stack Software Engineer with more than 10 years of experience building API/Client-first services development.
In-depth experience in multiple domains, including music/audio broadcast, low-latency (high-throughput) distributed systems and caches, real-time ad-delivery services, and location-based and data-mobilization software solutions.

Experience

- **Amazon.com, Inc.** Jan 2020 - Present

  Software Development Engineer II

  - **Ads Filtering & Eligibility Services**: Designed a globally-accessible Ad Eligibility API handling hundreds of transactions per second using API Gateway, Lambda, and **DynamoDB GlobalTables**, delivering cross-regional distributed solution.
    – Developing next generation Ads Filtering service using various technologies such as AWS ECS and SQS.
  - **Amp**: Amazon Music's Amp in an infinite-dial digital radio broadcast mobile application. Amp allows users to create a show, go live, play music, and take in call-in guests all with simple flow and within minutes.
    – Lead engineer developing Amp Android app and migrating Amp iOS app to hybrid **ReactNative**-based architecture with native core components in both **iOS Swift** and **Android Kotlin**.
    – Team leader of Creator Studio & Call-in experience full-stack development maintaining iOS/Swift client and backend system using AWS Lambda, Chime APIs, **Elastic-Containers on Fargate** microservices, and AWS AppSync **GraphQL**.
    – Led group of engineers to develop iOS Bluetooth/audio solution which was filed as Patent `P78152 - SWITCHING WIRELESS PROFILES IN RESPONSE TO TRIGGER EVENTS`.
  - **FenixSPService**: Core orchestration engine that serves Sponsored-Products Ads on Amazon.com retail website and mobile app worldwide. Fenix is a high-throughput low-latency real-time distributed service that delivers curated ads per user on Amazon.com pages and apps. Utilizing **Java** and **Spring MVC**.
  - **FenixSPService on Native AWS (NAWS)**: Delivered the first proof-of-concept demonstrating the ability to boot up `FenixSPService` on the public/native offering of AWS ecosystem.
    – Identified +20 technical blockers, led team of engineers to develop simple workaround solutions, and eventually provided a risk-mitigation path for the actual migration and deployment of the service.
    – Launching `FenixSPService` on Native AWS was later featured in AWS re:Invent 2021 - Under the hood at Amazon Ads.
  - **DevOps and OnCall**: Participate in on-call and deployment shepherd rotations. Improve pipelines and monitoring to implement best practices of CI/CD.

- **Webalo, Inc.** Jul 2016 - Dec 2019

  Software Engineer

  - **HTML Toolkit**: Designed the architecture for a new HTML-based platform-agnostic UI widget rendering toolkit.
    – Led a team of engineers to develop and migrate Webalo's User Agent applications to the new toolkit and retire the Java Canvas-based toolkit. Utilizing TypeScript and Web Components in **Angular 7**, **Bootstrap**, and JavaScript/CSS.
  - **CI/CD**: Automated system build, execution of integration and end-to-end tests, and binaries distribution through using Git Hooks, **Jenkins**, and Shell scripting.
  - **Unit & Integration testing**: Spearheaded the effort to set up and design system testing framework for developing integration tests.
    – Utilizing **TestNG** and **Mockito** for module testing and **Selenium** for end-to-end testing.

- **Google, Inc.** Aug 2015 - Nov 2015

  Software Engineering Intern

  - **Sandlot**: As part of the G-Tech team, integrated sentiment prediction into Google's partners management tool. Responsible for the design and implementation of the new feature using **Python** and **AngularJS**.

- **Wireless Stars, LLC** Oct 2013 - May 2015
  Software Engineer
  - **ARTS**: System for road traffic estimation based on user cell-phone data analytics. Building **Android** SDK for location and sensor data collection.
    Collaborating with research team on developing production ready algorithms and modules for data processing back-end system using **Spring Boot** and data pipeline through Apache Camel.
    Responsible for implementation and testing of **Kalman-filter** user speed estimator.
    Utilized PostGIS to implement spatial queries consumed by various modules of the system.
    Implemented **Android** app that uses traffic SDK to push data to the back-end and query the system for estimated traffic state. The application was used by business team for demo/presentation and by the research team for system evaluation.
  - **EYE360**: Augmented reality application providing bi-directional user interaction built using **Unity3D** and Qualcomm **Vuforia** SDK
- **B-Yond**
  Consultant Engineer
  - **National ID Segmentation**: Designed and implemented customer license management in **Python using JWT**, obfuscation, and elliptic curve cryptography.
    Designed run-time transaction management using symmetric key cryptography.
    Advised ML and junior engineers on deployment strategies and post deployment monitoring, support, and CI/CD.
- **Coptic Academy, NGO**
  Part-time Back-end Engineer
  - **R&D**: Evaluated the use of technologies like HashiCorp and JWT for implementing client/service secured communications.
  - **CPlanner**: Maintained RESTful data-serving back-end for Coptic Planner mobile app. Responsibilities include REST API extension using **Spring Boot** and Hibernate, deployment to production server and bug troubleshooting/fixing. Optimization of back-end operations and SQL queries.
  - **CMentor**: Set up, designed, and implemented RESTful back-end for Coptic Mentor mobile app using Spring Boot and **Hibernate**.
  - **Batch-processor**: Designed and implemented data batch-processor driven by cron jobs for consuming system data, via optimized SQL queries, and delivering custom notification in **Java** and **shell scripts**.
- **Alexandria University** Sep 2012 - Jan 2013
  Teaching Assistant
  - **In Special Scientific Program (SSP)**: Teaching Introduction to Databases and Numerical Analysis courses.
- **Innuva, IT** Jul 2011 - Oct 2011
  Game Developer Trainee
  - **3D shooting game**: Game design and implementation using **Unity3D** game engine. The game logic is being implemented using JavaScript for Unity3D.

Tools & Frameworks [1]

- **Languages**: Java – Swift – Python – TypeScript – HTML/JavaScript/CSS – SQL
- **Frameworks**: iOS – ReactNative – Spring MVC/Boot – Bootstrap – Angular 7 – Unity3D – Android
- **CI/CD**: CDK– Jenkins – TestNG – Selenium – Mockito/PowerMock – Jasmine/Karma

Education

- **Alexandria University, Faculty of Engineering** Sep 2007 – Jul 2012
  B.Sc. Computer and Systems Engineering

Continuous Education [2]

- **Architecture and Developing on AWS**: AWS Hands-on Training
- **DevOps on AWS**: AWS Hands-on Training
- **Security Engineering on AWS**: AWS Hands-on Training
- **Programming Languages**: Coursera - Washington Uni
- **Introduction to Functional Programming in Scala**: Coursera
- **Applied Cryptography**: Udacity
- **Introduction to Cryptography**: Coursera - Stanford
- **Introduction to Recommender Systems**: Coursera - Uni of Minnesota
- **Algorithms Design and Analysis**: Coursera - Stanford
- **CSMM.102x Machine Learning**: Edx - ColumbiaX
- **CSMM.101x Artificial Intelligence**: Edx - ColumbiaX
- **Introduction to AI for Robotics**: Udacity
- **Machine Learning**: Coursera
- **Coding the Matrix**: Coursera
- **Scalable Machine Learning**: Edx

[1] Technologies are listed in decreasing order of experience.
[2] Certificates are available upon request.