

PROFESSIONAL PROFILE

Full-stack Software Engineer with more than 10 years of experience building API/Client-first services development.

My expertise spans multiple domains including music/audio broadcast, low-latency (high-throughput) distributed systems, real-time ad-delivery services, location-based and data-mobilization software solutions.

EXPERIENCE

- **Amazon.com, Inc.** Jan 2020 - Present
Software Development Engineer II
 - **Amp**: Amazon Music's [Amp](#) in an infinite-dial digital radio broadcast mobile application. Amp allows create a show, go live, play music, and take in call-in guests all with simple flow and within minutes.
 - Led a team of engineers to deliver the first public version of the Creator Studio iOS app implemented using **Swift** and AWS AppSync **GraphQL** entirely from the grounds-up.
 - Single-handedly implemented crash-recovery of the entire Creator Studio app state; this involved revamping some modules in the app and extending multiple back-end APIs in order for the app to restore any in-memory state and reconnect to live-broadcast.
 - **FenixSPService**: Core orchestration engine the serves [Sponsored-Products Ads](#) on Amazon.com retail website and mobile app worldwide. Fenix is a high-throughput low-latency real-time distributed service which delivers curated ads per user Amazon.com pages and apps.
 - Participate in new-feature design and implementation, monitoring, and troubleshooting/bug-fixing of several service components. Utilizing **Java** and **Spring MVC**.
 - **Migration to Public AWS (NAWS)**: Delivered the very first proof-of-concept demonstrating our ability to boot up **FenixSPService** on the public/native offering of AWS ecosystem.
 - Identified +20 technical blockers, led a 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. Plan and execute fleet scaling and descaling for high velocity events. Troubleshoot mobile app crashes and profile back-end services for improvements.
- **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.
 - **Client Services**: Troubleshoot and verify client licensing and on-premises data encryption at rest.
 - **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

¹Technologies are listed in decreasing order of experience.

²Certificates are available upon request.