

## PROFESSIONAL PROFILE

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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

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- **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 Call-in experience full-stack development maintaining iOS/Swift client and backend system using AWS Lambda, Chime APIs, and **Elastic-Containers on Fargate** microservices.
    - 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.
  - **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 <sup>1</sup>

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- **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

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

## CONTINUOUS EDUCATION <sup>2</sup>

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- **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

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<sup>1</sup>Technologies are listed in decreasing order of experience.

<sup>2</sup>Certificates are available upon request.