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EMPLOYMENT

Software Development Engineer Amazon Web Services Feb 2019 – Present AWS Cognito

- Designed, implemented, and deployed [user-activity event streaming for threat protection](#); built the [ManagedLoginBranding](#) CloudFormation integration.
- Built AWS WAF Console workflows to integrate [Cognito with WAF](#) (attach and manage web ACLs and rules).
- Re-architected Token/[ASF](#) services to a cloud-native platform, serving production traffic in 27+ AWS regions.
- Built anomaly-detection (stream + real-time scoring) to identify automated sign-in abuse, reducing bot attempts.
- Extended advanced security feature coverage across Cognito data-plane APIs (sign-in, sign-up).

Simple Notification Service (SNS)

- Launched an SNS [SMS Sandbox](#) that protects customers from phishing, spam, and malware via allow-listing, sender verification, and rate/volume caps; fully supported via APIs, CLI, SDK, and Console ([more context](#)).
- Co-built the [AWS Amplify](#) and [AWS Cognito](#) integration with the SNS SMS Sandbox.
- Built a cloud-native service mapping SNS GL records to country ledgers with validation & audit/reconciliation.
- Mitigated confused-deputy in [SMS usage reports](#) and hardened the SNS Console and [SetSMSAttributes](#) control-plane API with stricter security validation.

Elastic Block Store (EBS)

- Built a self-service platform provisioning [Redash](#) and [Grafana](#), enabling internal EBS customers to create and manage dashboards on real-time and historical data for large-scale events.

Software Development Engineer Amazon Dec 2017 – Feb 2019 Customer Order workflows (COW-Fulfillment)

- Designed and launched a fulfillment service centralizing Amazon order-fulfillment logic with standardized APIs across all Amazon retail websites; supports ~20M orders/day (approx.).
- Maintained the purchase tax & charge engine with sub-100 ms p95 and ≤200 ms p99; improved API reliability and accuracy; met 99.95% availability.

Software Engineer Bibliotheca Alexandrina Oct 2015 – Nov 2017 Digital Assets Factory (DAF) Team

- Built a Java scheduling, multi-threaded reactive service to generate book thumbnails for digital cataloging and a companion monitoring module tracking Hadoop/HDFS storage with MySQL thresholds and email notifications.

Software Engineer ZK Technology Nov 2014 – Oct 2015

Message Middleware (MOM)

- Designed reactive message-oriented middleware on RabbitMQ with fan-out APIs for systems/devices/groups.
- Built a Scala admin console for RabbitMQ monitoring and CRUD (exchanges, queues, bindings, policies).

Device Management System (DMS)

- Built a Scala console and Java backend for device management; integrated MOM to decouple commands.

Device Adapter (DA) & Device Adapter Access Control (DAAC)

- Built Node.js device-control APIs (attendance logs, user CRUD) using normalized schemas and whitelisting, reducing integration issues and support overhead.
- Implemented Java business-layer firmware translators that wrap attendance/access protocols behind a common interface with Scala frontend integration for device onboarding.
- Delivered a Scala frontend with RBAC toggles and audit trails, backed by Java services and Node.js APIs, to enable/disable translators per device/firmware, reducing ops toil and improving incident recovery.

Software Engineer Ejada Mar 2013 – Nov 2014

General Authority of Civil Aviation (GACA)

- Led design and launch of a Java billing platform with an Oracle DB PL/SQL engine integrated with Oracle AR and IATA SIS; cut invoice cycle time 42% and processed 120K invoices/month across 38 carriers, in a market of 110+ airlines (including 6 national carriers).

EDUCATION

Alexandria, Egypt University of Alexandria Sep 2006 – May 2011

- University of Alexandria - B.Sc. in Computer & Systems Engineering, GPA: 3.5 (Grade: Very Good, 76%) • Sep 2006 - May 2011 • Alexandria, Egypt

Languages and Technologies

- Cloud/Infra: CDK, Kinesis, API Gateway, AWS Cognito, WAF, SNS, SQS, Lambda, CloudFormation, IAM, VPC
- Data/Stores: DynamoDB, Oracle, MySQL, PostgreSQL, Redis, SQLite, Microsoft SQL Server
- Languages: Java, TypeScript/Node.js, C/C++, Scala, Ruby, Python, SQL
- Frameworks: Spring, React, Akka, Play, Hibernate, JSF/JSP, Camunda (BPMN 2.0, DMN)
- Obs/Analytics: Grafana, Redash
- Standards/Security: OAuth2/OIDC, JWT, WAF, Bot detection, Anomaly detection