

# MARWAN ELGENDY

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## SUMMARY

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Senior Software Engineer with 15+ years of experience designing and building scalable, cloud-native platforms. Scaled HP's Instant Ink subscription service from thousands to millions of customers globally, and migrated Apptio's financial pipelines to a higher-performance architecture with zero correctness drift. Deep expertise in distributed systems, cloud infrastructure, and data engineering – AWS, Kubernetes, and microservices – combined with machine learning and embedded systems experience. Recognized for leading complex initiatives, setting architectural direction, and mentoring engineers across geographically distributed teams.

## TECHNICAL SKILLS

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**Programming Languages:** Java, Python, Ruby, JavaScript, Scala, Golang, C/C++, PHP

**Cloud & Infrastructure:** AWS (EMR, SFN, Lambda, EC2, SQS, SNS, Redshift, DynamoDB, API Gateway), Docker, Kubernetes, Terraform, Splunk, CloudFormation

**Databases:** PostgreSQL, MongoDB, MySQL, Oracle, SQLite, DynamoDB, Redshift, NoSQL

**Methodologies:** Agile (Scrum, Kanban), Domain-Driven Design, TDD, CI/CD, DevOps

**Other Skills:** Machine Learning, Data Analysis, RESTful APIs, gRPC, GraphQL, Linux/Unix Administration, Embedded Systems, Networking & Infrastructure, Bash & Shell Scripting

## PROFESSIONAL EXPERIENCE

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**Senior Software Engineer** | Apptio (an IBM company) | *May 2023 – June 2025*

- Designed and delivered scalable data-processing pipelines for high-volume usage and financial datasets using Kubernetes and Java; migrated targeted workloads to EMR Spark with Scala to improve performance.
- Implemented Infrastructure-as-Code using Terraform to provision and manage AWS cloud environments.
- Built reliable automation workflows with AWS Lambda, Step Functions, and Python to streamline operations and reduce manual overhead.
- Performed large-scale data analysis and engineering tasks using Databricks.

**Senior Software Engineer** | JumpCloud | *Jan 2022 – Feb 2023*

- Integrated Microsoft M365 using the GraphQL API, expanding platform capabilities and enabling seamless cross-platform compatibility; directed the technical design and end-to-end delivery.
- Architected a hybrid Postgres + MongoDB data layer for the M365 integration, storing the core identity graph in Postgres while isolating per-tenant custom attributes and hierarchies in MongoDB; preserved relational query performance while absorbing high write volume across 50,000+ tenants.
- Used a diverse technology stack including Docker, Golang, gRPC, JavaScript, Node.js, PostgreSQL, and MongoDB to deliver reliable, high-performance services.

**Specialist Software Engineer** | Hewlett Packard (HP) | *July 2018 – Dec 2021*

- Led the scaling of HP's Instant Ink subscription service from thousands to millions of customers globally, applying Domain-Driven Design to transform a Ruby on Rails monolith into cloud-native microservices and data pipelines on AWS (Lambda, API Gateway, SNS, SQS, DynamoDB, Redshift, CloudFormation).
- Fostered agile methodologies and Test-Driven Development across cross-functional teams, collaborating closely with DevOps, QA, and Product Management.
- Technology stack: Ruby on Rails, ReactJS, Docker, Jenkins, Chef, Splunk, relational and NoSQL databases.

### **Full Stack Engineer** | AT&T | *March 2017 – May 2018*

- Built key front-end and back-end components for a service-oriented single-page application for ticket and task management.
- Designed and implemented RESTful APIs, developed asynchronous JavaScript modules, and created custom query languages for unstructured data.
- Provided guidance and mentorship for new developers, ensuring high code quality standards.
- Technologies: Perl, MySQL, PHP, JavaScript, Ember.js, AJAX, and SOA.

### **Software Development Manager** | Sunrise Resorts | *Jan 2014 – July 2016*

- Led end-to-end implementation of asset management and digital e-signature solutions.
- Managed comprehensive IT infrastructure upgrades including VPN deployments and data center modernization.
- Technologies: PHP, CodeIgniter, Bash, Bootstrap, jQuery, MySQL, Oracle, Linux, networking (layer-3 switches, firewalls).

### **Software Engineer** | OIG Electronics | *Jan 2013 – Dec 2013*

- Acted as Scrum Master leading a team to develop Linux-based operating systems for embedded hardware.
- Defined and executed effective version control strategies and promoted agile practices.
- Technologies: C/C++, Shell Scripting, QML, SQLite, QT, and Unix OS.

### **Software Developer** | 5D Agency | *Jan 2011 – Jan 2013*

- Developed engaging web-based JavaScript games and desktop gaming applications with emphasis on security and performance.
- Built full-featured toll-station management systems with integrated image recognition capabilities using OpenCV.

## **EDUCATION**

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### **Maharishi International University** | Fairfield, IA

Master of Science (MS), Computer Science

*Key coursework: Big Data, Machine Learning, Algorithms, Design Patterns, Java*

### **Shorouk Academy**

Bachelor of Science (BS), Computer Science

*Key coursework: Game Development, C/C++*