

**Phone** +1 (312) 286 – 2828

**Website** https://kalua.im/

**Email** khalid@alnua.im

**GitHub** https://github.com/kaluaim/

**LinkedIn** https://www.linkedin.com/in/khalidalnuaim/

Research interests

**Big Data, Distributed processing, Data analytics and Scalable time series.**

Experience

**Graduate Teaching Assistant**

### *Worcester Polytechnic Institute*

### August 2021 – Present

### Assist students in the graduate course "Design of Software Systems". In addition to grading students' assignments and projects.

**Software Engineer Intern**

*Nokia Bell Labs*

### June 2022 – August 2022

### Built a fully functional simulator for Nokia Environmental Monitoring (NEMo). The simulator can simulate +100 devices, and each device works independently as if working in a real-world environment. In addition, the simulator can run with different strategies: replaying previous events stored in InfluxDB, reading actual data from various APIs, or running based on descriptive profiles.

**Solution Architect**

*Saudi Authority for Intellectual Property*

### November 2019 – January 2021

### Stabilized the authority’s portal and optimized the performance and security. Designed and implemented in-house solutions. Provided consultation and support for other teams and developers in the authority.

**Software Engineer**

*King Faisal Specialist Hospital and Research Centre*

### November 2013 – November 2019

### Developed applications for different platforms: Web applications using JavaServer Faces, console applications using Java and iOS applications using Objective-C.

**Software Engineer Intern**

*RVEALR*

### February 2018 – May 2018

### Prototyped a client dashboard and REST API back-end, with multiple views and functionalities, to allow the client to manage and monitor the resources.

**Software Engineer Intern**

*TURBO Studios*

### September 2017 – January 2018

### Developed a connection to AWS in a supporting tool (Admin Tools) which perform multiple AWS related actions. In addition to Improving and fixing bugs in Spring Framework back-end system.

### **Software Engineer Intern**

## *King Faisal Specialist Hospital and Research Centre*

### June 2012 – August 2012

### Enhanced Emergency Management System (EMS) by adding administrative features to allow the administrator to configure and set up the emergency unit.

Education

### **Worcester Polytechnic Institute**

### Ph.D. In Computer Science (2021 – 2025)

### **Stevens Institute of Technology**

### M.S. In Computer Science (2017 – 2018)

## **Imam University**

### B.S. In Computer Science (2008 – 2013)

## **Various Big Data analytics projects**

## Developed many MapReduce jobs for massive datasets on HDFS to perform spatial join, detecting outlier based on distance, and performing K-Means clustering. Also developed many Spark workflows to perform indexing of high relative density of grid cells, generating the Frequent Pattern Mining using the Apriori algorithm and producing progressive approximate answers for aggregation queries. In addition to creating a variety of Apache Pig queries and Apache Hive scripts.

## **Various full-stack development projects**

## Developed many full-stack projects for different areas (Healthcare, Education, Social, and others) using multiple technologies for front-end like React, Vue.js, JQuery, and Vanilla JS. And multiple technologies for back-end like Spring Boot, Express.js, and Flask. That interacts with different data sources like SQL, NoSQL, REST API, and GraphQL. And communicate with other services like ActiveMQ Artemis and Keycloak.

*More projects https://kalua.im/projects/*

Awards & Achievements

## **Winner Best Hack Using a NYC API**

## *HackNY Hackathon Spring 2017*

Intel, MongoDB, Twilio and others

*https://devpost.com/software/mansplaintome*

## **Winner Most Original Project**

## *DuckHacks Hackathon 2017*

Google and JPMorgan Chase & Co.

*https://devpost.com/software/duckhacks-share-your-taste*

Certificates

**Advanced Study in Software Construction**

*Massachusetts Institute of Technology*

[*http://web.mit.edu/6.031/www/fa19/*](http://web.mit.edu/6.031/www/fa19/)

**React Nanodegree**

*Udacity*

*https://confirm.udacity.com/563VRG2S*

**A developer's guide to the Internet of Things (IoT)**

*Coursera* (9J6KF7RTGT3H)

*https://www.coursera.org/account/accomplishments/verify/9J6KF7RTGT3H*

**Red Hat Certified System Administrator**

*Red Hat* (140-006-149)

*https://www.redhat.com/rhtapps/certification/verify/?certId=140-006-149*

Skills

**Languages** Java, Python, JavaScript, Scala, Objective-C

**Frameworks** Express.js, Spring Boot, Flask

**Frontend** React, Vue, HTML5, CSS3, jQuery

**Infrastructure** SQL (PostgreSQL), NoSQL (MongoDB), Redis

Hadoop, Spark, Pig, Hive

**AI / ML** Scikit-Learn, TensorFlow, PyTorch

**CI / CD** Git, Jenkins, Docker

**Cloud** AWS

Languages

**English** Fluent

**Arabic** Native

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https://kalua.im/resume/

Khalid Alnuaim