

SUMMARY

A seasoned Senior Software Engineer and Researcher excited about building efficient and lean cloud-native Reactive Systems which are Responsive, Resilient, Elastic and Message Driven.

RESEARCH EXPERIENCE

PoC on Apache Pulsar as message bus to demonstrate:

- a) Producer microservice sending message to topic
- b) Consumer microservice subscribing to topic using any of Shared, Exclusive and Failover subscriptions
- c) Spark streaming via Apache Pulsar topic
- d) Geo replication feature of Apache Pulsar between multiple data centers

<https://github.com/chineduekwunife/apache-pulsar>

PoC on running a messaging system in Kubernetes which demonstrates:

- a) Helm charts for Producer and Consumer Microservices (Java8, Spring boot/Spring cloud, Docker, Gradle)
- b) Helm chart for Apache Pulsar (Broker & Bookkeeper)
- c) Deploying to a namespace in a Kubernetes cluster using Helm & Minikube
- d) Autoscaling of Pods and System Resiliency/Reliability provided by Kubernetes

<https://bitbucket.org/NeduEkwunife/kubepoc>

PoC to showcase Vaadin frontend microservice communicating with AKKA-HTTP backend microservice which demonstrates:

- a) Vaadin 14 Frontend microservice (Java and Spring support, Maven)
- b) AKKA-HTTP backend microservice (server provided by Actor Stream, HTTP requests handled by actors)
- c) Swagger Docs for APIs
- d) Postgres DB with Hikari for connection pooling
- e) Jooq ORM for database interactions

<https://bitbucket.org/NeduEkwunife/akka-spring-docker>

WORK EXPERIENCE

Senior Software Engineer, Lucidworks UK, US

Feb 2019 to Date

I joined Lucidworks to offer my experience in their journey to migrate the Lucidworks A.I Powered Search suite to microservice architecture so as to provide better customer experience, both for On-Premise and Cloud deployments. My contributions so far include:

- Lead Backend Engineer for Connected Experience Operating System (CxOS) project in charge of developing new functionalities in Cx-API, Cx-Task-Scheduler and Cx-Script-Executor microservices.
- Working closely with the DevOps Engineers to develop Kubernetes Helm charts for deploying services and components to cloud platforms.
- Working closely with the VP of Solutions and Chief Architect to define overall technology strategy for the business.
- Developed a solution for local development/continuous deployment on Docker containers using WatchTower and Docker Compose

- Introduced and implemented Rabbitmq as messaging system between microservices
- Replaced Rabbitmq with Kafka coordinated by Zookeeper, and implemented consumer groups used for messaging feedback
- Implemented Git database synchronization on microservices and remote Gitea Git server
- Implemented functionality to create multiple Git databases based on Git branching, database synchronization during WRITES and Git pulls using Actor programming pattern (AKKA) and then routing to database based on specified configuration in request header. Used AKKA priority mailbox to ensure more important messages on the metadata queue get processed first.
- Introduced Spring Feign for HTTP communication between microservices, including data handover between microservices using Feign request interceptors
- Implemented integrations to Apache Spark services used for submission of Aggregation, Script, Machine Learning and PBL jobs
- Implemented data layer caching using Spring Cache abstraction
- Implemented Script Executor microservice for Python and Javascript scripts using GraalVM, where result is fed-back via Kafka to interested consumers
- Implemented Scheduler microservice for scheduling and submitting jobs to the Script Executor microservice

Senior Software Engineer, KCOM UK

Jan 2016 to Jan 2019

I had the opportunity to work in RDG and Interdigital projects, attend conferences and trainings – O'Reilly Software Architecture Conference in London 2017, NodeJS Training and Certification by QA, RedHat Delivery Specialist – Middleware Application Development; and write publications for Java Practice – Reactive Systems & Concurrency, Actor Model Case Study (AKKA), Java8 Training for KCOM Java developers and Spring Cloud demo & training for KCOM Java developers. Also, I worked with the Application Support Team to implement solutions for CPI (Common Payment Interface), CPS(Card Payment System) and PPB(Prepay Broker) platforms under O2 E-commerce Managed Services project.

Senior Software Engineer (Java8, Groovy, AKKA), Interdigital OneTransport *Feb 2018 to July 2018*

I joined the Interdigital OneTransport project to help deliver a project which was running late. The work involved creating and documenting RESTful APIs using Spring and Swagger, building dockerized microservices using Spring Cloud technologies and Docker, unit and integration testing using Groovy Spock framework, Continuous Integration and Deployment via Jenkins to Azure Cloud, Sync/Async Microservice communications using REST APIs and Rabbit MQ, Multithreading, Scheduling & Resiliency using AKKA, Groovy scripting for routine functions and code reviews for other developers.

Software Engineering Team Lead (Java8, Groovy, AKKA), Rail Delivery Group *Jan 2016 to Oct 2017*

I joined KCOM to work in the Reports & Extracts team which was one of the Agile delivery teams of Data Capture & Apportionment System for RDG. The work involved creating and documenting RESTful APIs using Spring and Swagger, building dockerized microservices using Spring Cloud technologies, unit and integration testing using Groovy Spock framework, Continuous Integration and Deployment to AWS using Maven, Jenkins & Docker, Highly Scalable Systems with AWS ELB, ECS and Auto Scaling, Sync/Async Microservice communications using REST APIs and AWS SQS, Multithreading, Scheduling & Resiliency using AKKA and mentoring junior software developers.

Software Engineer (Big Data, Scala and Java), Accenture UK

Feb 2014 to December 2015

I started my career in Accenture UK as a Java Developer, and then got involved in projects where I developed in Scala. Overtime, I have become proficient in developing systems using both Java and Scala, and I am also proficient in developing distributed data processing systems for Big Data analysis and visualization.

Big Data Developer, British Broadcasting Corporation (BBC) UK

May 2015 to October 2015

The aim of the project was to develop a Single Customer View(SCV) Data Platform for BBC data scientists to analyse and visualize customer identification, user and activity data. The data pipeline was built using Java and housed on Amazon Cloud. As a developer working in an Agile Team, I was involved in the full data pipeline development, and used Java and Big Data technologies like Apache Spark, Hadoop, Hbase, Hive, Hue, Yarn, AKKA, Maven, Amazon Kinesis, Amazon RedShift, Amazon S3 and Amazon Data Pipeline.

My primary responsibility was enrichment of data for both real-time and batch data, on Spark/Hadoop cluster and data warehousing design. I also got involved in other tasks on the pipeline which includes:

- Reliable data transport from source(Comscore) to destination(S3) using Apache Camel and AKKA
- Throughput maximization for data ingestion to Kinesis to meet NFR of 2 million records ingestion per minute
- Amazon data pipeline implementation, which involves automating jobs to run at particular times

Scala Developer, Her Majesty's Revenue & Customs (HMRC) UK

Feb 2014 to April 2015

The aim of the project was to develop HTTP REST services to automate how HMRC interacts with its customers. The services were created using Play! Framework and Scala, with the aim of developing highly distributed, scalable and resilient systems. Emphasis was placed on system scalability so that the services can support peak usage periods. As a developer working in an Agile Team, I was involved in the full system development lifecycle, from conception to deployment.

My primary responsibility was backend systems development which involves tasks like integration to Government Gateway and Identity Assurance(Post Office, Experian) for authentication and authorization, integration to Enterprise Tax Management Platform (ETMP) for data processing and storage, and integration of front-end and back-end micro-services using REST API and Play Framework Web Service.

While on the project, I was involved in the design and implementation of Social Investment Tax Relief, Tax Summaries Support and Tax Credits services. I also got involved in other tasks which includes:

- Development infrastructure setup i.e. Github and Jenkins
- Front-end development (HTML, Javascripts, CSS, Play! Framework templates)
- Test Driven Development involving Unit, Integration, Acceptance(BDD using Cucumber) and Performance(Gatling) tests
- Pair programming and code reviews
- Scala Training for Test Automation Engineers <http://www.slideshare.net/ChineduEkwunife/scalatraining>

Freelance Developer

Sept 2013 to Jan 2014

After completing my MSc program, I did some freelance projects with technical partners in Nigeria. The aim was to consolidate the skills gained from my studies and also keep up with latest technologies.

Java Developer, Business Connexion(BCX) Nigeria

June 2010 to July 2012

The aim of the project was to use Java technologies to design a system to capture photo, biometric and personal data of Nigerian citizens to be used for National Identification Services. I was involved in the design, implementation and support of the National Identity Management System (NIMS), and played a major role of collaborating with the technology partners for BCX. My job description included:

- Requirements Gathering, Analysis and Process definition
- Solution design and implementation
- Unit, Acceptance and Performance tests
- Code reviews

EDUCATION

Masters in Software Engineering (Merit, 69/100)

Sept 2012 to Sept 2013

University of Southampton, United Kingdom

Dissertation: *Model Checking a Peer to Peer Document Collaboration System which uses S4Vector Algorithm to ensure eventual consistency*

Modules:

- Software Project Management and Quality Assurance
- Formal Design of Systems
- Agile and Object Oriented Development
- Safety Critical Systems
- Enterprise Web Development
- Web Services
- Advanced Web Development
- Intelligent Agents

Bachelors in Electronic Engineering (First Class, 4.68/5)
University of Nigeria

Oct 2004 to Jan 2010

CERTIFICATIONS

Building Javascript Applications Using NodeJS and the MEAN Stack

February 2018

Red Hat Delivery Specialist, Middleware Application Development

December 2017

Functional Programming Principles in Scala

December 2014

https://www.coursera.org/maestro/api/certificate/get_certificate?verify-code=EX3D2VXGR3

MongoDB Java Developer

September 2014

<https://s3.amazonaws.com/edu-cert.10gen.com/downloads/18376ab44c984cf4b2fc89d86ffd0212/Certificate.pdf>

Scrum Master, Scrum Alliance

May 2014

Oracle 7 Certified Associate

April 2014

https://www.youracclaim.com/badges/69505057-4e3d-4ff0-b57a-aa2feb4d30ef/public_url

AWARDS

1. HMRC Digital Delivery Centre Newcastle Award for excellence 2014
2. National Information Technology Development Agency Scholarship Award for excellence in Information Technology 2012
3. 2nd Best Graduating Student in Electronic Engineering, University of Nigeria 2010
4. Nigeria Society of Engineers Award for Best Student Project in Nigeria 2009
5. Total-Elf Scholarship Award for academic excellence 2005
6. Overall Best Graduating Student, Federal Government College Enugu 2003
7. Best Essay Writer of the Year, Federal Government College Enugu 2003
8. 1st Prize, National Environment Essay Competition 2002
9. National Mathematics Centre Scholarship Award 2000
10. Olympiad Mathematics Scholarship Award 2000