# Greg Nwosu

**Commercial & Technical Experience**

**Barclays Capital Apr 2015 - Present**

**Big Data Engineer**

**Responsibilities**

**Barclays were in need of a system to provide realtime reports on terabytes of Risk data which scales better and is more reliable than their legacy system. I headed up the ETL of the system connecting to various datafeeds and forming a reliable fast ETL pipeline into the Big Data store.**

Designed and implemented a low memory high throughput ETL pipeline for Ingesting Risk Data from historical reports into Barclays Big Data HDFS System.

I’ve been at Barclays since the inception of the system , I headed up the ETL side, so have had to deal with a lot of pressure my systems are upstream of the rest of the team.

Barclays produce around 3TB of non durable risk data. It is my responsibility to capture, validate , transform and ingest the data from various heterogeneous sources such that it can be used later for real-time reporting.

Design Meetings

Code quality.

**Technologies**

* Hadoop
* Apache Spark
* Apache Flume
* Kafka
* Protobuf/Parquet/Avro
* Berkley DB

**Achievements**

* Singly developed ETL pipleline to ingest terabytes of risk profile data into HDFS quickly and reliably
* Rewrote the messaging client in Scala, made it more reliable and easy to integrate with existing scala codee
* Pioneered new ways of handling the protobuf data
* Helped set up continuous integration environment
* Helped mentor graduate intern
* Developed comprehensive testing using scalacheck test generation
* Integrated apache flume with barclays inhouse datawarehouse format
* Re-engineered barclays interface to solace messaging in scala

**Skills Gained**

Apache Flume Apache Spark ScalaCheck Solace Messaging Kafka

**Blinkbox Books Sep 2014 – Feb 2015**

**Senior Scala Engineer**

**Blinkbox needed a scalable SMART ETL pipeline into a their Big Data store, which could analyse the type of data being stored and store high usage artifacts on low latency cloud based SSD and store high value artifacts on slower RAIDED disk.**

Completed the design and phase 1 implementation, released to UAT.

**Responsibilities**

* Design of and implementation of SMART Ingestion system. The system would interrogate the kind of data ingested and rely
* Automated verification of APIs against swagger in Tests
* Wrote property based testing code for storage service
* Interfacing with Microsoft Azure Storage Framework with Scala
* Implementation of Scala code
* Writing functional tests in Property Based BDD style
* ScalaCheck Property
* FlatSpec for BDD
* Review and Merging of Pull Requests in Git hub
* Diagnosis of issues with Continuous Integration and Deployment preparation
* AMQP configuration

**Technologies:** Scala**,** ScalaCheck**,** Spray.io**,** FlatSpec**,** Akka**,** Github, Git**,** Swagger**,** REST**,** HTTP**,** Azure**,** RabbitMQ AMQP.

**Achievements**

* Designed, developed and deployed first version of REST endpoint for storage agnostic cloud based big data service, with redundancy across storage providers
* Improved Scala, Git, Github, REST knowledge, AMQP/RabbitMQ knowledge

**RBS Aug 2013 - Aug 2014**

**Infrastructure Developer**

**RBS needed to audit their infrastructure. They needed data on key risk points within their infrastructure, performance bottle necks and to capacity plan for the future.**

Improved the maintenance and monitoring of a RBS’s big-data risk aggregation platform. Co-ordinated outputs from devops , developers , managers and hardware projects board. Profiled the coherence cluster to find out problem points of the architecture. Produced capacity planning proposals and submitted them to the board for a 500k uplift to infrastructure and thus made the capacity plans visible and manageable for the near future.

**Responsibilities**

* Capacity planning
* Monitoring bandwidth throughput and latency to ensure smooth running of the platform.
* Bidding for budget and rationalising legacy infrastructure.
* Dev Ops
* Capacity management
* Infrastructure Bidding.
* Technologies
  + Continuous Integration (TeamCity)
  + Dev-ops
  + Coherence
    - Capacity planning
    - Performance profiling
  + Scala-sbt
  + ScalaCheck
  + Scala-Specs

**Technologies:** Java 6**,** Oracle coherence**,** Unix bash shell scripts**,** Haskell**,** Scala**,** Python.

**Achievements**

* Recently developed a £500k proposal for new infrastructure as a result of a profiling and capacity plan I put in place.
* Presented plan to the RBS board and won approval for the spend for updating the nodes in a coherence cluster based on profiling, coherence clustershock and datagram analysis measurements.
* Dev-ops scripts written in Haskell
* 6 months commercial advanced

**IG Group Jun 2010 – Sep 2013**

**Direct Market Access & Smart Order Routing Java Developer**

**IG Index needed connect to various electronic stock exchanges but their java code was procedural and unmainainable.**

Refactored the trading gateway code, unit tested it and made it reliable. Implemented a microservices architecture to help maintain uptime. Documented it , introduced unit testing, continuous integration, BDD testing. Also quality assured code external developers wishing to use IG’s direct market API to do algo trading.

**Responsibilities**

* General FIX Connectivity
* Instrument Downloads and Trading
* Designed coded and accredited IG trading Gateways to be compliant with external exchange trading protocols.
* Daily instrument downloads from exchanges
* API client connectivity and accreditation
* Smart Order Routing (SOR)
  + tweaking SOR trading strategies
  + Fault Diagnosis and SOR Order Resolution
* certification with external companies
* Last line of support for trading gateways and connectivity issues

**Technologies:** Java 6, Java 7, LMAX disruptor, Multithreading, Linux, Oracle, SQL Server, Clover, Sonar, Maven2, Maven 3, Bamboo, Python 2.6, Python-Requests, BDD, JBehave, Domain Driven Design, Concurrent Programming Functional Programming, Low Latency Algorithms, Disruptor Pattern, Bash Shell Scripting.

**Achievements**

* Designed and implemented the initial framework for IG’s Gateways
* With better modularised code, IG were able to grow the team
* Studied and implemented FIX protocols for Gateways to most major international exchanges. CHIX, Bats,Bloomberg,CommerzBank, UBS
* Soley wrote the IG’s Gateway to London Stock Exchange, IG’s LSE Millenium Gateway had no downtime on LSE launch compared to 80% of finance houses
* Designed and implemented Connectivity for Algorithmic Exposure Hedging System
* Standardised a way to debug running processes across multiple firewalled SSL zones
* Introduced BDD and Domain Driven Design to DMA Connectivity team.

**Stan James Apr 2008 – Jun 2009**

**Java Developer**

Working with a top gambling company; Developing a trading platform and desktop application for traders in sports betting. I played key roles in technical decision making, agile estimating, planning and retrospectives, as well as implementation, testing, refactoring and maintenance. Initially responsible for the inception of quants module for event pricing and later contributing all other modules. This was in an Agile and Scrum methodology.

**Technologies:** GWT, Java Swing, Selenium, Fitnesse, Oracle Coherence, Hibernate, Spring, Core Java, JUnit, Weblogic, Oracle.

**Education**

**2002-2003 University College London**

**M.Sc. Intelligent Systems (Incomplete)**

**Course Content:** Neural Networks**,** SVMs**,** Decision Trees**,** Learning theory**,** Maximum Likelihood Estimation**,** Bayesian Decision Theory**,** Hidden Markov Models**,** EM Algorithm**,** ICA**,** Mixture Models**,** Monte Carlo Sampling Methods**,** Bayesian Networks.

**Software Research Paper**

Detecting Faces in Images a Survey of different approaches

**1994-1997 University of Birmingham**

**2.i B.Sc. Computer Science & Artificial Intelligence**

**Course Content:** Concurrent and Object Orientated Programming in C++, TCP-IP, UNIX real-time shared Memory and Semaphores, Computer Graphic, Advanced Interface Design, Human Computer Interaction, Relational Database Theory, HTML Design / CGI Programming, Expert Systems, Neural Networks.

**Software Research Paper**

Melody Composition using Web based Genetic Algorithms

**1992-1994 St Francis Xavier College**

3 A-levels including A in Computer Science

**1987-1992 John Paul Secondary School**

9 GCSE’s Grade A-C

**Personal Interests**

* Embedded DSL’s using the Fixed Point Combinator in Haskell,
* Scalaz
* Haskell to Javascript compilation using Haste
* Screen scraping with wreq and lenses
* Parsec like Parsing
* General chore automation, planning on creating Internet of things devices.
* Parallel problems , STM.
* Haskell FFI - recently created and open sourced the [blink1device Haskell FFI API](https://github.com/todbot/blink1/pull/199)
* Cycling
* studying civil litigation and human rights law
* Zen Meditation.
* I have also trained to teach adults and am a mentor to children learning to code at CoderDojo.