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Rowan Shulver

Profile

Software engineer specialised in the design and delivery of distributed cloud enabled systems. Highlights include the design of a commercial software product, delivery of a global enterprise-wide security solution and the architecture to monitor a global satellite broadband product.

Experience

JPMorgan, London, UK

VP Senior Software Engineer 6/21– current
ML Data Analytics

Intelligence Platform

Databricks pilot for payments data lake

JPMC Airflow client library

The Data Analytics engineering group is responsible for building software infrastructure to support analytical and ML business applications and assist users migration to the public cloud.

The Intelligence Platform is a multi-tenant data science platform for training and serving ML models. As a member of the core engineering team responsible for

- The implementation of the ipsage python library to deploy sagemaker processing, training and inference pipeline jobs with lambdas.

- Programmatic labelling with SnorkelFlow. Deployed vendor product on EKS with auth integration.

The payments pilot evaluated the use of Databricks for batch ingestion and consumption. Reviewed Lakehouse features, performance and migration of the existing batch process.

The jpmc-airflow-provider client library provides core functionality for using Airflow within JPMC including

- Seamlessly use Airflow operators with on-prem and the AWS cloud (S3, Glue, EKS)
- Config only authentication using static credentials, kerberos or vaulted passwords.

- Pass large values (e.g. Serialised pandas data frame) between tasks with custom XCOM
- Optional lineage for tasks, S3 paths and schemas without requiring any user code

Technologies: Python, Go, AWS (EKS, ECS, S3, Glue, sagemaker), SnorkelFlow, Airflow, Terraform, Kubernetes (Docker, skaffold, kustomize, Helm), Databricks(Structured streaming, DLT, DBX, pyspark, SQL), Datahub

VP Senior Software Engineer 2/19– 6/21
Model Review

Enterprise open-source Python application development with auth, services and persistence

Principle lead in the application migration to the cloud.

Client engagements include adding a micro-service (gRPC) interface to a C++ Pricing library

The model review group is responsible for benchmark testing financial models across all lines of business. The hosted open source development environment Jupyter is used to provide a secure, consistent, reproducible environment for their testing.

The cloud migration to on-prem kubernetes included porting the open-source jupyter stack and integrating with enterprise services (*Kerberos*, S3 persistence, Oracle)

Technologies: Python(jupyter hub+lab, tornado, s3fs), Kubernetes (Docker, skaffold, kustomize, S3, Kerberos), gRPC, JavaScript, C++ (CMake), Linux, Jenkins, Elastic(Search, Filebeat), S3, Cassandra, GIT

Barclays, London, UK
VP Cloud Engineer 4/18– 2/19

Registry System for federated AWS auth

Infraweaver developer to automate AWS provisioning

Joined the cloud engineering group responsible for providing the infrastructure to migrate the business to AWS cloud.

Technologies: AWS, Python(boto, moto, django, flask), terraform, chef, Linux, Jenkins, LDAP, GIT.

Inmarsat, London, UK

Senior Integration Architect 4/16– 4/18

GXViewer **w**eb app for real-time view of flight health & stats.

Netflow & Ping servers 24/7 real-time capture of network packets and p/sec heartbeats.

HTTPS JSON APIs.

GX is the next generation broadband on aircraft product offering. Part of the originating team to architect & design the monitoring system to support the service and measure customer SLAs. Developed python servers to capture the thruput and health of the service with monitoring tools to display and alert. Secure APIs to provide monitoring stats to external and internal clients.

Technologies: Python(tornado, curio), JavaScript(AngularJS, ui-leaflet, nvd3), BulmaCSS, InfluxDB,

Elastic(Search, Filebeat), icinga2, grafana, Redis, Linux, Jenkins, LDAP, JWT, Postgres.

Barclays PCB, London, UK

Senior DevOps Engineer 8/15 - 3/16

Strategic DevOps transformation initiative program to agile practices. Technical lead in the Service Virtualization (SV) stream which provides expertise to application groups across Personal Corporate Banking (PCB). Consulting on how to enable the use of Continuous Integration (CI) through to improving existing pipelines.

Technologies: Parasoft (Virtualize, SOAtest), JavaScript (Angularjs), JAVA, Maven, gradle, Jenkins, Python, Git.

British Airways Aviation, London, UK

Web Programmer 5/13 - 7/15

Stub-O-Matic service virtualization server.

Process 2000+ requests p/sec with 500ms delays.

Time-Series analytics of performance metrics.

Open sourced at https://github.com/erowan/stubo-app

Lead developer of Stub-O-Matic which is the service virtualization infrastructure that British Airways are dependent upon to test their production systems such as ba.com. Stub-O-Matic consists of a cluster of linux VMs each running four tornado application processes served by a load balancer. Stubs which match HTTP requests to responses are stored in a central mongodb and cached via a replicated redis master/slave. Requests are processed asynchronously via a thread pool in each app process. JSON is used for both redis IO and the REST API. The application also provides a front end to manage stubs and view request/response processing via a tracking panel. Analytics are provided by extracting

key metrics sent to a statsd server which aggregates the stats before sending to a graphite carbon server. Developed client libraries in Java & Python.

Technologies: Python, Tornado, Redis, Mongo, JavaScript, Java, Docker, AWS, statsd, graphite, Linux.

TXODDS Sports betting, London, UK
Team lead 3/12-5/13
New robots architecture.

Scrape Olympic 2012 market odds from sports betting sites.

Update internal databases with parse results.

txodds.com web site server development.

Technologies: Python, MySQL, Redis, Linux, github.com/erowan/pull.

Musicmetric Web startup London, UK
Web Programmer 1/12-2/12
User DIY feature.

Pull users social and sales stats from authorised sites.

Technologies: Python, OAuth, WebAPIs(youtube, soundcloud, tumblr, blogger), Linux.

JPMorgan Commodity Exotics London, UK
Senior Server Programmer 5/11-12/11

Deal Migration onto new internal trading system (Athena).

Trade feed and reconciliation reports for OTC and note securities.

Technologies: Python (Athena), XML, HTML, SQL, Linux.

LargeBlue Digital design London, UK
Web Programmer 09/10-05/11

Collaborative crowd sourcing platform - openideo.com

Notification messaging system for email and application inbox.

Re-developed core CMS system for generalized use by different custom apps.

Technologies: Python (repoze.bfg, ZOPE, ZODB, buildout), JavaScript (JQuery), HTML, CSS, GITHUB.

HBOS Treasury Services London, UK
Senior Integration Consultant 12/09-08/10

Swift payments messaging and WebSphereMQ integration.

Built WebSphereMQ reference message exit (C++) and client library (java).

Developed MQSI scripts (python) for delta and full builds, deployment and release.

Technologies: Java (Spring Framework, JMS, Eclipse, Maven), Solaris, Eclipse, Swift, WebSphere (MQ, MessageBroker), C++(MQExit). Python (baker, elementtree). SVN.

JPMorgan Energy Commodities (QR) London, UK
Senior Server Programmer 10/06-09/09

Delivered european energy market data for front-office gas and power. The data was sourced from the internet and real-time feeds and made available for historical and real-time analysis via plot graphs and web applications.

Built high performance multi-threaded server (java) that processes 100,000+ messages per day 24/7.

Created web app of the UK grid power consumption displaying plant status, demand and price graphs.

Designed feed library (python) which presented a uniform way to deal with disparate data sources to fetch, parse and construct time-series data. Integrated market data with the internal trading platform (Athena).

Configured a continuous build server (hudson) for the group incorporating mavens release goal to deploy one-touch releases.

Technologies: Python (urllib2, pyparsing, SQLAlchemy, ZSI, scikits), Java (Spring Framework, TibRv, iBatis, Eclipse, Maven, Hudson, Artifactory), Web(Pylons, Tomcat, XML, HTML, CSS, JavaScript (JQuery), WebService APIs), MySQL, Oracle, SVN, Linux.

HBOS Treasury Services London, UK
Senior Integration Consultant 01/06-08/06

Credit Derivatives Swift message integration.

Built integration server components for CDS and CDO instruments.

Technologies: Java (Spring Framework, JMS, Eclipse, Maven), XML, XSLT, XML Schema, WindowsXP, Solaris, Eclipse, CVS, Swift, WebSphere (MQ, MessageBroker).

Tussauds Group Leisure Chessington, UK
Middleware Architect 06/04-11/05

Architect for Nectar points redemption system. The middleware processed sales, refunds and enquries between Tussauds admissions system and Nectar (LMUK).

Changed persistence from queue based mechanism to RDBMS.

Provided High Availability (HA) solution.

Configurable message transformation using XML, XSLT and Schema.

Technologies: Java (JMS, JPOX JDO, Log4J Chainsaw, backport-utilconcurrent, apache commons xerces), XML, XSLT, XML Schema, AIX, WebSphereMQ, MySQL, ksh, C++, Eclipse, CVS, NT/XP, CIFS.

JPMorgan Private Banking NY, London, Geneva
Vice President 08/00-01/04

Joined as hands-on team lead to improve client three-tier multiproduct(Equities, Fixed Income, Mutual Funds, Syndicates) trading system. Re-located to Europe post development to act as the EMEA Hub manager to co-ordinate International releases of the application.

Hired senior consultants to re-develop the system internals while still facilitating business logic point releases.

Reviewed current architecture to re-design for increasing trade volume and stabilize the system.

Replaced proprietary middleware (EventWorks) with IBM's WebSphereMQ pub/sub broker and XML.

Formalized the software lifecycle incorporating standard tools into the build, source control and release packaging.

Technologies: C++ (STL, threads.h++, tools.h++, dbtools.h++, xerces, AMI, Multi-Threaded, purify), Java Coppelia FIX engine, CORBA(VisiBroker), AIX, Solaris, NT, Sybase, COM(OCX), WebSphereMQ, MQBroker, XML, PVCS, imake, Solaris package, UML, ksh, VisualBasic, MS Project.

Morgan Stanley Engineering New York, USA
Senior Associate 10/98–08/00

Member of the WebSphereMQ engineering group responsible for providing infrastructure, consultancy and support to the application delivery groups.

Designed WebSphereMQ exit library framework (c++, java).

Globally authenticated all WebSphereMQ clients with a Kerberos security exit using the exit library framework.

Provided 2nd level support to the application delivery groups.

Technologies: C++ (Kerberos GSSAPI, multi-threaded cross platform), Java (JNI, JMS), NT, Solaris(Kerberos, AFS), SunOS, gnu make, RCS, WebSphereMQ, MQBroker, MQSIV2, netcool

Level 8 Systems Software House New York, USA
Product Development Team Leader 11/95–10/98

Involved in all stages of product development from design, build, and pre-sales to 2nd level client customer support. Responsible for hiring and managing a development team to extend and further develop the product.

Conceptualized product to create a distributed publish/subscribe system utilising standard messaging (WebSphereMQ, MSMQ) presenting a high level object-oriented interface.

Achieved commercial sales of the product to major companies.

Provided consultancy in distributed object systems to a range of clients.

Technologies: C++ (tools.h++, STL, multi-threaded cross platform), Java, C, AIX, Solaris, HPUX, WebSphereMQ, MSMQ, CORBA(DSOM, Orbix), PVCS, UML(Rational Rose), COM(OCX, ATL, VC++)

Bellcore Telco New Jersey, USA
Analyst Programmer 3/95–11/95

Researched and provided consultation on planned development projects including 0800 number replacement.

S.G.Warburg Equities London, England
Analyst Programmer 06/94- 3/95

Developer for a front office trading system used by analysts in the Equities Department. Worked on the presentation and data tiers.

Developed C++ library using ODBC to handle the required database functionality.

De Montfort University Built Environment Leicester, England

Research Assistant PhD 07/92-06/94

Responsible for researching the application of computer systems for the thermal analysis of buildings.

Investigated the design of a standard API to interrogate the building databases of several different thermal analysis programs.

Education
De Montfort University Computer Dept Leicester, England
B.Sc(Honours) Computer Science (IIi) 09/88–07/92

Final year project: Objects in an Ingres Environment. Explored how to map the object-oriented paradigm within Ingres Windows 4GL. This involved both the structural mapping at the table level and behavioral mapping once the data was in memory.

Interests

Classic cars, sport, chess, cooking and art.