

Beijiang Xu (US Citizen)

Verizon

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PROFESSIONAL SUMMARY

- 20+ years of total experience in business and technical analysis, system architecture design, hands-on development and full life cycle enterprise application development implementation in telecommunication industry.
- 15+ years of experience focusing designing/developing high-performance object-oriented multi-tier solutions/multi-threaded server-side applications and high volume asynchronous messaging services.
- 10+ years of experience on developing Java Enterprise Edition applications using Spring framework.
- 2+ years of experience on developing server-side high volume asynchronous messaging services using Apache Kafka platform.
- 5+ years of experience on Big Data projects.
- 1+ year of experience on Deep Learning, DeepLearning4J and Apache Spark.
- A creative, self-motivating fast learner. Highly motivated with proven ability to work hard & effectively both in a team as well as individually. Good interpersonal and Leadership Skills.

SKILLS AND TECHNOLOGIES SAMPLING

- Operating Systems : Windows, UNIX, Linux, and Solaris.
- Deep Learning Tools : Apache Spark ML and DeepLearning4J
- DIstributed real-time messaging and computation platforms : Apache Kafka and Apache Spark.
- Languages: Java, XML, SQL, HTML,JSP, Ant, and Maven.
- Java Technology: J2EE, EJB, MDB, JMS, MQSeries, Servlets, and JDBC.
- Open Source Frameworks: Spring, Spring Boot, Hibernate, Apache Kafka, Apache Spark, Docker, Apache Struts, Ajax and AngularJS.
- Web Technologies: Services(SOAP,RESTful), Web Service Security(Authentication,OAuth2,JWT).
- Web Servers and App Servers: Tomcat, JBoss and WebLogic Suite, IBM Websphere.
- Cloud Technologies : Spring Cloud, Oracle Cloud and AWS.
- RDBMS: SQL Server, Oracle, DB2 and Teradata.
- Tools: JDeveloper, JBuilder, Eclipse, SOAP UI, PostMan, JUnit, MS Visio, Rational Rose, CVS, Subversion (SVN), TortoiseSVN and GIT.

PROFESSIONAL EXPERIENCE

Verizon, Irving, TX

Sept 1998 – Present

Senior Software Engineer and Architect

• vPrice Discount&Promotion Prediction and Recommendation Tools

2018 - Present

Roles: Software Architect and Lead Developer

Responsibilities: Work closely with data scientists and develop the first generation of AI driven Discount&Promotion Prediction and Recommendation Tool using Java Spring framework, Spring Boot, Apache Kafka, Spark ML and Java DeepLearning4J.

Development tools/envs: UNIX (Sun Solaris), JAVA, J2EE, Spring Framework, Spring Boot, Apache Kafka, Apache Spark, Java DeepLearning4J, Oracle DB, Maven and GITLab.

Project Description:

Sales/GSAT team today does not have enough business intelligence to provide appropriate discount to customer quotes, which results in many quotes go to PCM for manual processing. This leads to:

1. Delay in getting quotes back to customers
2. Un-optimized discount that reduces our chance of winning the deal

Our Approach:

1. Phase 1 (Done) - use historical data to train a Machine Learning model(RNN) to estimate the final discount given by PCMs
2. Phase 2 (On-going) - extend the model to give winnable discount recommendation to sales team.

Business benefits:

1. Improve deal lifecycle time by providing winnable discount prediction tools to our sales team so they do not need to pass so many quotes to PCMs
2. Provide intelligence of the winning discount percentage.

- **Migrating Verizon Enterprise Big Data Gathering&Processing Tool to Spark** **2018 - Present**

Roles: Software Architect and Lead Developer

Responsibilities: Work closely with data scientists and make necessary changes in the existing Enterprise Big Data Gathering&Processing Tool and integrating it with Spark platform.

Development tools/envs: UNIX (Sun Solaris), JAVA, J2EE, Spring Framework, Spring Boot, Apache Kafka, Apache Spark, Oracle DB, Maven and GITLab.

Project Description:

BAU contract renewal for each enterprise customer is time consuming. Verizon loses multi-millions dollar revenue because of the discounts mistakenly offered by PCM analysts. In order to reduce human mistakes and human intervention [PCM touches] and at same time improve the system performance, Verizon vPrice team decided to migrate to Spark platform. We will integrate the vPrice Big data gathering tool with Apache Spark and then use Spark's machine learning (ML) library to analyze the historical data including customer's metered data usage commitment, product level margin info etc. Our goal is to let AI automatically figure out what kind of discount should be given during contract renewal process.

- **Verizon Enterprise Big Data Gathering&Processing Tool** **2013 - 2018**

Roles: Software Architect and Lead Developer

Responsibilities: Designed and implemented Enterprise Big Data Gathering&Processing Tool.

Development tools/envs: UNIX (Sun Solaris), JAVA, J2EE, Apache Kafka, Spring Framework, Spring Boot, OAuth2, JWT, Oracle DB, Maven and GIT.

Project Description:

- Verizon Enterprise Service Big Data Gathering&Processing Tool [VES-DGT] is a key sub-system of Verizon enterprise customer contract renewal application. It consists of VES-DGT data load service, and VES-DGT BOSI services (pricing service, cost service and margin analysis service).
- VES-DGT data load service pulls monthly Verizon enterprise service data from Verizon Data Warehouse[Teradata, DB2, SQL Server, Mainframe, Oracle DB], then use configurable mapping rules to convert the raw data to vPrice format and then does financial calculation and finally store the converted data in vPrice Oracle DB. It's built on top of Apache Kafka and can process more than 40 million data in just 8 hrs. 90% of data mapping rules are configurable and stored in Oracle DB.

The high level big data processing flow :

1. Data pulling stage [Kafka concurrent processing]
2. Data validation and pre-processing stage [Master scheduler thread]
3. Data mapping and processing stage [Kafka concurrent processing]
4. Data post-processing stage [Master scheduler thread]
5. Address validation stage [Kafka concurrent processing]
6. GetPricing stage [Kafka concurrent processing]
7. GetCost stage [Kafka concurrent processing]
8. Data merging stage [Master scheduler thread]

- VES-DGT BOSI service exposes the converted data through EJB interfaces and Secure RESTful web services. All service APIs can handle huge data and support paginations.

- **Verizon Enterprise Solution Pricing Engine**

2012 - 2019

Roles: Software Architect and Lead Developer

Development tools/envs: UNIX (Sun Solaris), JAVA, J2EE, Spring Framework, Spring Boot, OAuth2, JWT, Oracle DB, Maven and GIT.

Project Description:

Verizon Pricing engine consists of standard pricing service, cost management service, price book management service, and advance pricing service. This real-time pricing engine was developed to facilitate pricing requests, deal analysis and pricing, and pricing execution as part of an end to end quote to cash process.

Responsibilities:

- Designed and developed multi-threaded scaling and parallel processing and monitoring framework with EJB. This multithreaded framework was the foundation of most of real time high volume vPrice services.
- Designed and implemented real-time standard and advanced pricing services using J2EE, JPA, JMS, MDB, EJB, Web Services[SOAP and RESTful], Oracle weblogic platform, multi-threading, Apache Maven and Oracle DB. This high-performance object-oriented solution has high transaction rates and can process a huge request with 50,000 line items within 10 seconds.
- Designed and implemented PriceBook Stamping Service using J2EE, JPA, EJB, Oracle weblogic platform, multi-threading, Apache Maven and Oracle DB. It can process and persist huge request with 50,000 line items within 20 seconds.
- Designed and implemented asynchronous framework using Apache Kafka platform to handle Large quote scenario [more than 1000 sites in large price quote request] , multiple scenario bindings and large quote scenario download.
- Developed spreadsheet download/upload service which can export/import very large data to Excel files using Apache POI Apis.
- Developed Secure REST web service interfaces of Pricing Engine Apis.
- Designed and implemented DevOps automated testing tools for enterprise business and operation.

- **Verizon Enterprise Billing Portal**

2004 - 2012

Roles: Software Architect and Lead Developer

Development tools/envs: UNIX (Sun Solaris), JAVA, J2EE, JMS, MDB, Spring Framework, Hibernate, Apache Struts, JSP, AJAX, BEA weblogic platform, Oracle DB, ANT and CVS.

Project Description:

Integrated Verizon Business portal by consolidating fMCI and fVz billing portals. The integrated VBC Billing portal presents a comprehensive picture of a customer's invoices/bills. It provides the functionality to pay invoices, breakdown of usage and services by groups or departments, Bill Inquiries, claims and print/download/upload different documents online.

Responsibilities:

- Developed an in-house workflow framework[Verizon ESG workflow engine BPI].
- Designed and implemented Bill inquiry workflow driven app, Claim workflow driven app and Adjustment workflow driven app using in-house Verizon ESG workflow engine BPI.
- Designed and implemented Asynchronous Process Management [APM] using J2EE, JMS, MDB and Multi-threading and Oracle DB. APM provides a framework support to manage all asynchronous billing jobs within J2EE environment. Typical users of APM are application developers, which submit scheduled jobs to APM to either get the job done asynchronously, or with given schedules, and maybe offline. APM supports Bulky operation, Recurring job and Offline transaction.
- Designed and implemented Billing Back Office Interface [BOSI] Sync/Async infrastructure using J2EE, EJB, JMS, Multi-threading, Spring framework, Hibernate, Oracle DB and APM.
- Designed and implemented the download server, which became the core part of VEC download center and all VBC subsystems used it as file repository, using J2EE, EJB, Multi-threading, APM and Oracle DB.
- Fine tuned portal performance, reduced average page response time by 130% to within SLA, and improved customer experience.

• **Strategy System Platform Project (SSP and FFTP)**

2001 - 2004

Roles: Lead Developer

Development tools/envs: UNIX (Sun Solaris), JAVA, J2EE, JDBC, JSP, XSD/XSLT/XML, EJB, MDB, JMS, Web Services, JUnit, Weblogic server platform, Oracle DB, Springs, and Hibernate.

Project Description:

The merger between GTE and Bell Atlantic for the formation of Verizon presented an operation that was costly, redundant, and complex. Across Verizon, 8 Ordering Systems, 4 workflow systems and 2 ISP gateways were supporting the Verizon customers. The Objective of SSP is to provide a common Ordering/Workflow/Gateway Platform to support Verizon fulfillment processes for the various services and products offered.

Responsibilities:

- Involved in requirement analysis, design and development of the project.
- Involved in complete development life cycle starting from analysis of design, programming, test cases, implementation and post implementation support.
- Developed Stateless Session and Entity Beans and expose the existing EJBs as Web Services to the different clients.
- Developed XML, XSD, DOM, and SAX for ordering request and parsing the request xml.
- Encrypt and decrypt the important customer info, like credit card etc before saving and retrieving from the database using JCE.
- Design and develop Ordering modules for SSP. It supports both business and consumer customers and different products like Fiber, Video, DSL, Gold DSL, Fiber, Dial up, LAN ISDN, DNE, DNR, Web Hosting, Web development, DIA etc.
- Responsible to design interfaces for the front end GUI and backend data Services.
- Responsible to implement the complex modules to handle primary and secondary products, like Domain Name Email, Domain Name Registration, desktop Security etc.

- Responsible to design and implement parent and child relationships for account hierarchy.
 - Designed and developed the Common framework, which is used by different modules within the SSP, like addressValidationService, creditCardValidationService, productCatalogueService, loopQualService etc.
- **Broadband OSS – Rx Order, Rx Flow, Supplier Gateway, Rx Integrate** **1998 - 2001**
- Roles:** Lead Backend C++ developer
- Development tools/envs:** UNIX (Sun Solaris), C++, Roguewave Library 4.0, OMG CORBA, Borland VisiBroker 3.3, Rational Rose Tool, IBM XML Parser and Oracle 7.0 DB.
- Project Description:**
Maintained and enhanced Separate Data Affiliates Ordering, Workflow, Billing and Provisioning gateway systems for Broadband products. Visited call centers to see problems first hand and enhanced the system to be more user friendly and create solutions to improve flow-through of orders and meet order due dates.
- Responsibilities:**
- Participated in the design of Strategic Systems Platform (SSP) and created an integrated platform design, by consolidating Ordering, Workflow, and Gateway modules existing in VOL & VADI business units to reduce operating expense and increase the flow through of broadband orders.
 - Delivered ordering capability of DSL Gold product to provide static DSL services to small business customers.
 - Delivered Fast Packet automation capability to reduce the number of manual touches during ordering and provisioning of fast packet orders and achieve 60% flow through in 6 months after deployment and save \$2M in call center operations.

ACCOMPLISHMENTS

- Verizon Excellence Award [Feb 2018]
Nominated for 'Verizon Excellence Award' for developing in-house Verizon Enterprise Big Data Gathering&Processing Tool used to store/analyze enterprise service data for contract renewal purpose.
- Verizon Excellence Award [Jan 2013]
Nominated for 'Verizon Excellence Award' for developing multithreaded scaling and parallel processing and monitoring framework with EJB and integrating it into vPrice pricing engine platform.
- Verizon Excellence Award [Oct 2006]
Nominated for 'Verizon Excellence Award' for developing an in-house workflow framework and integrating it into enterprise business and operation portal.

EDUCATION

- Master's Degree in Computer Science, University of South Carolina, Columbia, SC.
- Bachelor's Degree, Electrical Engineering, Xi'an Jiaotong University, Xian, China.

REFERENCES

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