**President and Founder of Big Data Architects, LLC.**

### Big Data Ecosystem/Programming Languages:

Hadoop 2.7, HBASE. HDFS, Flume, Scoop, Oozie, Yarn Release 2.0, Mesos, Storm, Kafka, Spark 1.6.1(SQL/Core/GraphX/MLLib/DataFrames/RDDs), Neo4J, MongoDB, Cassandra 2.0, Riak, Talend Open Studio 5.6, Pig, Hive, lambda architecture – batch versus near real-time, Aerospike RDBMS ETL, Cassandra 2.0, Riak, MongoDB, R, Java 7/8/Eclipse – Helios/Juno/Mars, Python 2.6/3.3, AeroSpike; Avro/Parquet/JSON data formats, Kerberos 5, Java cryptography (AES-256 bit) , Java 8 and RestFul API; Tachyon 0.8.0, Apache Zeppelin incubator 0.5.5; Flink 0.10.0 (Hadoop 2.7/Scala 2.11 IDE), compression strategies - Gzip, LZO, Snappy, serialization - Java/Kyro, akka/Actor, Zeppelin notebooks: CrateDB/Grafana; Kavlev Data Modeling Tool(Cassandra 3.0), DataDog, Zookeeper/Kafka tuning

### Cloud Technologies (AWS):

EC2/EC2 Container Service(Docker), Elastic Beanstalk, Lambda(event driven architecture); Storage – S3, Elastic File System, Direct Connect, Route 53, CloudWatch(autoscaling), CloudFormation, CloudTrail, Config, OpWorks, Identity and Access Management, Inspector, EMR, Kinesis, Machine Learning algorithms, API Gateway, AppStream, enterprise AWS cloud design patterns, AWS (IoT); RedShift, Storage model analysis - hourly, reserved, spot-pricing, autoscaling

### Dev Ops:

Splunk, Nagios, Ganglia, JVM Tuning, MemCache, Tachymon, Project Tungsten, scripting – bash, awk, sed, shells, Linux kernel / io device modifications, Puppet/Chef/Shellshock, Ansible Tower, Linux – Red Hat RHE 6, CentOS, Ubuntu 12.3, Fedora 15/16/17; RANCID, Cacti(Graph), lldpd, IPerf, MultiHost SSHWrapper, Jenkins, Hudson CI, Bluepill, Capistrano, Bcfg2, Supervisor, Graylog, runit, Squid, snort, system, netstat, iostat, vmstat, ltrace, strace, ftrace, perf, tcpdump, sar, man, Takapi, GitHub, ssh, Cygwin, WinDiff, putty, Maven, Ant, DTraceToolkit(Netflix), Selenium, Node.js, putty socket.io/WebSockets, Azul Technologies – Zing; Stackio/Stacki(large scale Linux cluster automated deployments),

Docker/Kubernetes

### *Advisory Technology Architect – Spark and Kafka*

**Liberty Mutual Insurance Dover, New Hampshire May 2016 – prese**

* Downloaded from Apache.org the latest stable version of Spark 2.2.1 binaries; overlaid the Hortonworks 2.4

distribution of Hadoop/HDFS/HBase via Ambari; installed Java+, Scala 2.11; 75 nodes – 32 cores, 30 Tb disks,

each disk 6 Tb 10000 rpm, 2Gb SSD for Linux OS(Red Hat 7.3 Enterprise edition), 10 Gb Ethernet backbone;

master case(s) analysis, 600+Gb customer data of car accidents, ran police reports, demographic information

from state DMV’s; utilized MLlib regression models (for 2/3 pass in memory algorithms across multiple Spark workers; leveraged DataFrame API for Tungsten memory management optimization instead of the classic JVM

(young Eden); resolved the cross licensing issues with the numerical programming package Breeze for optimized

Numerical processing; utilized the Power Iteration Clustering algorithm for finding logical groups based on age, sex, geography, type of car, length of driving for insurance coverage characteristics; downloaded Mesos from mirror to submit Spark batch jobs into Mesos 1.0.0; established and designed Spark test jobs for incremental

performance testing(1 Mb, 10 Mb, 100 Mb, 1Gb, 10 Gb) on dev on dev and a Spark clusters, varying the number of cores and RAM available for each Spark worker; installed Datadog to monitor the Spark cluster across dev, a and prod environments monitoring the performance of the Spark job(s); refactored Spark batch jobs to mitigate

excessive shuffling and heuristic salting of the keys to prevent overloading on certain Spark nodes – reduce

CPU and I/O contention

* Led screening effort to pick best architects in the industry for building out the associate Big Data

Solutions architect role – including Walt Disney, MasterCard and Coca-Cola; looked for candidates

With deep knowledge in data streaming with Kafka and Flink; created a 50 point skills evaluation and

Big Data use case and design scenario for evaluating candidate strengths and weaknesses

* Conceived and designed a 80 page Kafka playbook for operations and tuning high performance low

latency messaging systems – tuning broker, producer and consumer nodes, Java gc()

* Created a 110 page cookbook on using DataDog and creating customer performance dashboards

for Zookeeper; created a 100 page cookbook for creating Kafka performance dashboards

* Conceived and created 30 page architecture design document for integrating Kafka consumer to

a Hadoop batch gateway via HortonWorks release 2.4 Ambari REST services; integrated Kafka

consumer with SPENEGO/Kerberos 5 authentication services; custom document for Kafka – Hadoop

data transfer and integration

* Installed the Confluent 3.2.1 Kafka broker and Operation Dashboard; ran and modified the performance

Kafka load against DataDog Zookeeper and Kafka dashboards; custom Docker dashboards for 500+

Docker containers in Red Hat Linux 7.3 kernel; integrated Kubernetes as orchestration engine for Docker containers

* Top analysis and deisgn of the Kafka Broker, Kafka Producer, Kafka Consumer, Schema Registry(100

Schemas), Kafka Connect for Cassandra, Hadoop HDFS; utilized the API for release 0.11 for the producers

and consumers; set up the replication factor, logical compensation for automated consumer rebalancing;

utilized Mirror Maker for setting up DR between two data centers; established the JVM criteria for the

Kafka broker, producers and consumers; set up the Kafka metrics using JProbe; Confluent Control Center

Release 3.1; devised durable commit markers for Kafka consumers – custom Java code for Kafka consumers;

designed optimal consumer groups based on use case, topic type and number of Kafka brokers; conducted

the Netflix Chaos site reliability engineering tests on the dev platform; drop partitions, brokers, consumers;

setup up the Zookeeper cluster 3 and 5 nodes- utilized the 4 letter commands for systems admin for Zookeeper

### *Enterprise Data Lake/AWS Architect*

**Verizon Corporation Basking Ridge, New Jersey May 2015 – April 2016**

* Conceived and designed custom POCs using Kafka 0.10 and the Twitter Stream in standalone mode; architected

the front-end near real-time data pub/sub non-blocking messaging system using the Kafka/Confluent.io Enterprise

Platform; configured the 10 nodes – 3 Web servers, 4 Kafka brokers and 3 Kafka consumers(Spark Strersming(DataFrames) with 3 Zookeeper nodes; Kafka brokers able to sustain 1 million wirtes per second

peak period for proprietary IoT device analytics plafotom for 4G LTE KI indicator(over 200); researched and codified the Kafka Consumer using KafkaConsumer API 0.10 and KafkaProducer API 0.10(Java); designed

the Spark Streaming and KafkaProducer interfaces – for multithreaded partitions and multiple topics by

smartphone manufacturer device type; competitive analysis of Storm, Spark, Flink, Samza for processing

messages(once only), replay and lost message management, horizontal scalability, security, message sequencing;

coordinated Kafka operationa and monitoring(via JMX) with dev ops personnel; formulated balancing

leadership strategies and impact of producer and consumer message(topic) consumption to prevent overruns;

aggressive monitoring of partitioning versus topic production via JMX interface(s); developed Kafka standalone

POC’s with the Confluent Schema Registry, Rest Proxy, Kafka Connectors for Cassandra and HDFS(Hadoop 2.0);

Custom Kafka broker design to reduce message retention from default 7 day retention to 30 minute retention – architected a light weight Kafka broker

* Created custom test, design and production Spark clusters for the VERUCA - Verizon Universal Communications

Architecture - Spark clusters exclusively from the AWS Management Console - configuration details, network

configuration and security details; architected the S3/EMRFS file systems(11 9's) for the proprietary

Datasets for 4G LTE analytics for radio signal loss, cellular tower placement, latitude and logitude, 100+

device modem metrics from 30 million devices and 1000 central switches; Spark clusters 1.6.1 in the various

environments; wrote custom and custom DStreams in Scala for in-flight versus at-rest data for lambda

architecture; set up YARN with dynamic allocation for horizontal scaling; calculated different pricing models

for reserved, hourly versus spot-pricing; configured EMR for M3/M4 AMI machines for smaller test/

development Spark cluster(8 nodes); separation of computer versus storage AWS frameworks; designed

a persistent versus transient architecture - raw Linux server with Spark ML algorithm jobs, test Spark

jobs via Zeppelin notebooks; mentored and guided offshore team in troubleshooting and fine tuning Spar

SQL applications with Ganglia - server load distribution, Spark UI - cached partitions, CloudWatch console

metrics, heuristic search through log files of the Spark executors on each Spark worker node and Spark driver;

performance tuning of the number of cores, number executors, amount of memory and network bandwidth; code

reviews for the optimal Spark application programming; analysis of DAG diagrams for Spark internal execution -

"lazy" transformations versus actions; examination of Spark UI for job completions, job task completions, cached

versus persisted DataFrames; assisted/advised the resident data scientists to configure and codify ML training

sets and modeling; caching strategies for multi-pass algorithms for better throughput and performance - forest

clustering, finite difference calculations, normal distributions, Bayesian statistical modeling; utilized splitable

compression to increase throughput from S3 to EC2

Assisted client in technical interviews of over 20+ potential Big Data architects, technical background checks and

review of CVs and resumes; set up Spark coding tests in Scala and Java; installed a Scala IDE test environment

to evaluate functional coding precepts; assisted client to interview 10+ dev ops engineers and several Scala

developers in knowledge of Linux operations, bash coding skills, troubleshooting techniques and scenario

diagnostics

Collaborated and advised the resident data scientists to extrapolate use cases for machine learning; designed POC

For Spark applications written in Scala utilize the MLlib – regression, experiments in recommendation engines

based on 4G KPI indicators; established performance sandboxes on signal propagation, theoretical versus actual;

Spark applications examined hundreds of HDFS 5 Mb files across 5 million device sample; derived starndard

versus normal versus Poisson distribution models cross-correlated with the cell phone tower lat/long positions

across the domestic US;

* Architected full life cycle the Veruca Cassandra ring – developed and designed the entire technology stack,

oversaw and reviewed the APO for .75 mil for the 30 node ring for prod/qa, 15 node ring for dev; orchestrated

the hardware procurement of the 1 Pb analytics data store ingested through the Kafka pub/sub cluster consisting of

10 nodes, peak volume of JSON data coming from 30 million smart phones(android), KPI payload of 3000 bytes/minute; replication factor (X 3); set the DataStax OpCenter for Cassandrta node analysis/troubleshooting;

Each node consisting of 256 GB RAM, 2 Intel chips each with 8 cores, 6 spindles of 6 Tb/7200 rpm SATA drives

(JBOD, non-RAID), 2 GB of solid state memory for RHEL version7.2, JRE/JVM rel 1.8.0\_92, 10 GigE network with 42U racks, Liebert 440 UPS electrical subsystems, calculated the BTU and heat dissipation and cooling

requirements with building HVAC engineers; worked with the radio/telephony 4G engineers to determine

optimum query patterns for time-series analysis for 1, 15, 30, 60 minute intervals; query patterns involved

denormalization of LTE signal tables and device KPIs consisting of 200+ KPI indicators(LAT/LONG coordinates); established and formulated best practices on Cassandra design patterns – atomic distributed counter service, needle in the haystack, anti-patterns; conducted due diligence on performance tuning, read/write

consistency of one/QUORUM, schema design; set up bash scripts to centralize Log4J logs by data node;

vnode key distribution; synchronized all cassandra.yaml configuration files; oversaw partitioning, secondary indexes, CQL types, use of supercolumns

* Designed and architected the HA solution for Cassandra rings between Basking Ridge, NJ and Dallas, Texas

for the 30 node ring at each location(T1 dual channel multiplexer link with backup); calculated the optimal snitch

based on rack awareness and the NetworkTopologyStrategy, monitored performance in the secondary

data center; compaction strategy for SSTables/memtables; designed logging/monitoring systems for the

backup data center;

* Spearheaded the POCs for the AWS ecosystem via the AWS Management console, S3 buckets, security –multi-factor authentication, access keys, X.509 certificates, Eclipse ID plug-in. emphemeral/persistent storage options – Linux and Windows AMI instances, private subnets, designed and deployed Amazon CloudWatch, IAM, Elastic BeanStalk, AWS Simple notification; architected various cloud computing and service design patterns – snapshot, Vagrant, high availab ility – multi-server- floating IP; processing static data – private data delivery, direct storage hosting; patterns for uploading data – write proxy pattern, state ssharing, cache proxy pattern; cloud patterns for operation and maintenance - bootstrap, cloud dependency, stack deployment, weighted transition, hybrid pattern; analyzed t radeoffs for high availability of zones for fault-tolerance versus high availability; set up alarms for CloudWatch for recovery of a failed Linux server, and auto-scaling for guaranteed SLA’a for Linux servers for real-time streaming analytics via Kinesis; analyzed RTO/RDO availabilities for virtual servers for time-lapse of recovery scenarios; established a common network host naming convention with Route 53 with Class C address/VPC subnets; accessed from GitHub Chaos Monkey(Netflix) for arbitrary host/network high latency

performance problem injections into a custom Dev Hadoop/NDFS cluster(10 nodes) with subsequent post

enterprise engineering efforts to monitoring HA via Ganglia; collaborated with sr Web developers for custom

Web applications – AWS Elastic Beanstalk with multi-container Docker financial applications

* Downloaded, configured Apache Zeppelin binaries/conf for Spark Web clients; integrated Zeppelin daemon

with Spark master node, tested and configured Web server with Spark cluster; tested Zeppelin with SparkSQL

and Python clients(pluggable interpreters); tested screen sharing functionalities WebSockets, Zeppelin views from

Spark notebooks

### *Sr. Cassandra Architect DevOps/Cloud*

**Standard and Poor’s New York City, New York November 2013–April 2015**

* Created variation of the lambda architecture consisting of near real-time using Spark SQL; Spark cluster 1.4 consisting of 25 nodes running with 200Gb ram/24 Tb, about 1Pb of market data spanning 2000+ stocks with

market ticks, number of shares traded, stock price, market ticks over 10 year period; Apache Open source version

with Mesos job scheduler; developed, designed tested Spark SQL clients with Scala, PySpark and Java clients;

selected best of breed in terms of time-to-deliver; created |Spark Contextx, DataFrames for Cassandra backend and

HDFS clusters; designed multi-cluster JVM tuning techniques with Jprobe, Nagios/Ganglia for node and cluster

tuning; tested Azul Technology Zing versus nation JVM concurrent mark and sweep algorithms; collaborated and

advised data scientists for optimum in-memory algorithms using Spark MLlib cluster/interval analysis, pattern

recognition, normal versus binomial distribution analysis; probability density and confidence experiments of

DJ 30 versus SP 500; custom experiments with SP 500 indices with short term SP 500 futures; custom Spark

applications designed with accumulators and broadcast variable to gain 4-5% in lowering network “chatter”;

Spark cluster in dev environment benchmarked with the Google page-rank algorithm; set up benchmark based on

the Daytona sort as reported by the University Of California Berkeley using 1 and 5 Tb; algorithmic comparisons

of GraphX versus Neo4J of company ownership of Fortune 500 board of directors – business relationship

connectivity analysis; tested Zeppelin(Spark UI) and Tachyon 0.8.0(off JVM memory management) options of

Spark; configured master/standby servers; configured Tachyon in local machine, standalone, EC2 mode with AWS

Vagrant plug-in, leveraged Tachyon I/O options for memory life cycle;utilized Spark Scala/Java API/Github;

custom design and verification of Spark machine learning algorithms – feature extraction, pipelining, regression

analysis, dimensionality reduction (PCA and SVD), k-means clustering

* Comprehensive design, discovery, analysis of the SP Capital IQ software, infrastructure, analytics, hardware in conjunction with the internal architecture review board – concerns of duplicate service calls, improvement and enhancement of existing SLAs to determine, document inaccurate stock quotes and improvements in real-time calculations from the legacy Soalris 9 Unix servers(200+); established comprehensive migration plan to a

Red Hat Linux(100+) server infrastructure, incorporating complete software stack redesign; collaborated with the

EA review board for establishing a IQSF(Intelligence Quotient Service Framework) to cover all mutual fund bond,

equity instruments for corporate, munis, government fixed income instruments via a SOA REST API;

Weekly meetings with the SOA governance board utilizing the Websphere 7.0 SOA repository(WSRR); detailed

service call documentation for input/output message passing, sample service call usage, error code

dictionary(systemic, application based, 4000 different financial quotes services with integrated algorithmic

dictionary) based upon landmark treatise4 volume set Encyclopedia of Quantitative Finance; established with

collaboration of the EAB a comprehensive data dictionary of financial calculation artifacts based upon puts, calls,

spreads, European , Asian, American style options, cross correlated with the type of risk algorithm used, vinomial,

Black-Scholes; applied enterprise architecture “best of breed” methodologies of discrete modularization,

separation of business versus system logic, detailed verification and documentation of existing 800 different

application modules by operating system, programming language, frequency of operations runs, relational

databases, feeds into data warehouses; established near-term milestones and accountability matrix of market data,

collaborated with security architect with state-of-art development of a custom AES 256 cipher key for

corporate wide standard of securing customer services for market quotes; comprehensive review, modification

a and enhancement of over 500 SOAP service calls to REST API service calls; established and created SOA service

call directory(on-line) for bid/ask/rate spreads for commodities – gold, silver, platinum, palladium futures, Forex

30/60/90/120/360 for over 100 currencies; assisted peer architect for identifying use cases for Riak and MongoDB

– annual reports , filings 10K with SEC for the NASDAQ and NYSE for 5 year span, 1.2 M pages in Adobe

text, searchable by financial keyword – asset, liability, receivable, payable, shares of stock

* Successful integration of Cassandra 2.0 distributed logger; very high volume – supports the S&P 500/Dow Jones industrial indices;over 20+ nodes integral market data infrastructure support the SP Capital IQ real time desktop global delivery system; Cassandra Ring has DataStax Enterprise Edition, replete with OP Center; installed

Acunu Analytics; configured Cassandra.yaml to support 200 virtual nodes with default MD5 hashing algorithm;

installed Cassandra ring with automated page scripts, CQL 3 with Python 2.6+, plus clustering (200 page

installation and maintenance guide for offshore team); created various POCs for Windows C# and Java

client for creating and altering keyspace and column families; utilized nodetool and cql to rebalance SSTABLES,

memtables, commitlogs; diagnosed Cassandra problems by setting Log4J Debug mode for detailed tracing

and analyzing Cassandra deferred reads and writes; designed and performed various benchmarks involving

1M, 2M and 5M writes; utilized Linux system commands to analyze Cassandra Java daemon – sar, iostat,

Vmstat with Python 2.6 and Perl 5 scripts; designed and ported csv batch files between Cassandra keyspaces

and MySQL with Hadoop module(MapReduce facility); set up multi data center Cassandra ring topology

for fault tolerant between South Brunswick and 55 Water Street with Gigabit Ethernet via Ciena Network

Service Ethernet 3190 optical switches; adjusted replication factor(s) for rack affinity topology; worked

through numerous issues involving the JVM, jdk 1.7 and Cassandra operational parameters; Cassandra

production ring of 60 nodes can absorb 3000 writes per second from 20+ market data aggregate feeds –

domestic and international(Reuters, Nikkei, Paris Bourse, German DAX 100, Hang Seng Indices); recommended

and delivered various technical strategies for file system performance with key and row caching; adjusted

write consistencies to gain optimal low latency write operations; utilized nodetool to analyze Cassandra

performance and adjusted the Cassandra yaml file for optimal performance and load balancing; responsible

and technical review/factoring of schema design, API client deployment , administration(SSH keys),

integration between Cassandra and Hadoop(Cloudera Brisk) for POC

* Customized Map-Reduce jobs consisting of multiple HBASE tables using InputFormat Java classes,

optimized M-R jobs by using partitioners for 1 –to-many joins, saving execution time; designed and

tested reliability of M-R jobs using unit testing in the HBASE/HDFS dev/qa platforms, unit testing on

Mappers, Reducers and integration testing of Mappers, Partitioners and Reducers, designed reporting

metrics with counters across the distributed HDFS logs, instituted best practices for defensive programming;

Set up OOZIE automated job tasks/streams for ETL imports from Oracle batch files into the HDFS

data artifacts for market data(bonds, equities) 20 Gb nightly OOZIE job, followed with M-R jobs using the

OOZIE coordinator, bundle and EL(expression language) for parameters – stock symbols, SP 500; designed

custom OOZIE job control options with the OOZIE Java API

* Managed, configured, tuned and continuous deployment of 80 Hadoop nodes in a Red Hat Enterprise edition 5; configured via the AWS console for 2 medium scale AMI instances for the Name Nodess, 78 large scale Data Nodes with 8 Intel i5 cores,3.5 Tb of disk and 350 Mb for JVM per Data Node; automated deployment and Linux system configuration via Chef; utilized 25 different dev op tools to log, debug, discern diagnose performance problems at the database level, Linux daemon level, networking level; set up real-time alerts with custom scripting via awk/fgrep/grep for kernel thread utilization; JVM tuning and garbage collection of short versus long lived Java objects on different generation heap spaces with due diligence on “stop the world gc() algorithms, “mark and sweep”; Chef automated deployment on qa Hadoop cluster of 80 nodes (mirror of prod Hadoop cluster); deployment and configuration of 20 Hadoop nodes on AWS AMI Linux instances

of medium size with 40 Tb of market data with 3X replication factor; installed, configured, bootstrapped the

Nagios plug-ins(/usr/local/nagios) – SNMP, CPU, memory, disk, Check\_MK, Nagios sensors; downloaded

Zookeeper tarball, configured Zookeeper ensemble of 3 nodes in standalone and multi-node cluste

established Java based shell; reconfigured Zookeeper znodes –ephemeral, sequential and persistent nodes;

implemented custom logs for ZAB Zookeeper Atomic Broadcast; implemented a Zookeeper Watcher

interface(Java API); installed, configured Ganglia – gmond, gmetad, gweb, set up multicast/UDP topologies and

designed RDD files for high IO demand; set up the Web interface for grid/cluster/physical/host and node

views; set up Ganglia advanced metric monitoring and debugging

### *Corporate Security Expert*

**Rosetta Stone Corporation Harrisonburg, Virginia September 2012- October 2013**

* Comprehensive review and analysis with a complete top down assessment of corporate records retention, storage,

destruction policies; complete review of all infrastructure artifacts – databases, middleware, firewalls, DMZ,\

network routers, subnets, honeypots, SSO/LDAP configurations, hardening and rotation policies of corporate and

external users of rosettastone.com, Web/Apache server/Ubuntu 11/12 kernel hardening/patch reinforcements;

top down review, design and rollout of 3 million customer **Visa and Mastercard** numbers state-of-art encryption

strategies – two keyTriple DES, Skipjack, NIST/NSA advanced encryption standards and recommendations;

review of all corporate email systems for virus and SPAM control, revised strategies and techniques for external

countries for currency exchange, foreign payments and auditing, field activity reporting; instituted

quarterly ethical hacking procedures, reporting, analysis and follow up IT engineering endeavors; including

establishing a corporate security lab to test the latest in pen tests for Windows, Linux, MacOS and Android/Apple

smartphones and tablets; instituted a corporate wide systems responsibility and charter for hardening 4000

company laptops for common encryption/decryption procedures to prevent internal software program theft;

instituted and rollout of Kerberos 5 for internal security/ticketing for all J2ee applications running JBOSS 6/6/1

cluster servers for QA and production environments

### *Enterprise Design Architect*

**Aetna Insurance Corporation, Minneapolis, MN December 2011 - August 2012**

* Launched and promulgated custom business rules engine framework, consolidated and interviewed key

SME’s on pharmaceutical rules and medical conditions based on the National Drug database and

PDR’s for traditional, HMO and PPO membership based on medical history, lab tests, co-pay

criteria, Medicare part C and D; over 5000 rules created; researched into the IEEE/ACM IT

repository for state-of-art algorithms based on the modified Rete II and Rete III algorithm; intiated

and set up RFP to IBM. Oracle and Open Source Drools,to determine “best of breed” technology for

rules engine, based upon dashboard capability, increased parallelism of rule/decision making

capabilities, ease of use transformations from business use cases; refined syntactical and business

rule exception handling and reporting; set up point selection criteria on which rules engine seamless

integration with existing ESB/messaging backbone; created and designed the business rules “request

and response” asynchronous message flows; created and established key performance indicators

and benchmarking criteria for handling cascading style decision making graphs and exposing

duplicate and redundant logic; architected the logical extensibility for decision making logic in

a meta-language business rule repository for SMEs and business analysts to research, modify at

from a team level perspective; spearheaded the initial and subsequence POCs for Drools as well

as from IBM Log4J rules; compared and contracted the Java API for creating the logical

business request and response payload and error handling;

* Comprehensive review of all retail insurance process artifacts, rules engines, message buses, business transformation models, security enforcement of HIPPA /HL7 relating to scrubbing patient data, review of over 5000 + insurance policy due diligence of health and sickness criteria; developed the Aetna Comprehensive Insurance Screening Framework(ACMSF)based upon the precursor of the Affordable Health Care Act; integration of the Kerberos 5 authentication and adjudication policy audit server tracking 3 mil+ inquiries into PPO/HMO/Medicare customers; ACISF built according to the TOGAF 9 methodology; bi-weekly meetings with key executives and stakeholders from the Aetna Enterprise Architecture Review Board for reporting and software and infrastructure component resilience, security, fault-tolerance, performance metrics and SLA’s (4 month effort with business constituencies) resulting in 250 pages of schematics with a 10 EAF steering committee; successful integration into Tibco and Websphere SOA Orchestration server; extensive utilization of best practices of various enterprise integration design patterns for message proxy, modified “spoke and wheel” topology for QA and production messaging frameworks across corporate messaging bus; integrated REST service APIs(over 400+) service calls for insurance policy look ups, claim processing, special APIs created for high speed lookups for insurance actuary tables(Gigaspaces XA) in-memory cache

### *Credit Default Swaps Trading Architect*

**Bank of America/Merrill Lynch, Pennington, NJ September 2010 - Nov. 2011**

**Application(s): FIX 4.5, credit default swaps, fixed income trading, Dodd-Frank compliance; Monte Carlo risk analysis/payoff matrix scenarios; HFT custom algorithms analysis and design; custom Java/C++ software for multiple precision routines(up to several hundred places) interest calculations, factorial/Fibonacci series**

**Technology stacks: Spring MVC/Acegi, Weblogic 10, custom Java/C++ v 1/Boost/STL software; Red Hat Linux/Solaris 10; Hudson CI/Jenkins/Maven; DB2 UDB 8.0; custom design pattern(s); PVCS; JProbe; Python/Jython scripting; Gemfire data caching; SAML 2.0/SSO/Java private/public key cryptography/X.509 digital certificate/passkey/passphrase generation/management/”honeypot” DMZs**

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### *Tibco Architect – Design API Expert*

**Allstate Insurance Corporation, Chicago, Ill. July 2009 – August 2010**

**Application(s): Treasury bond portfolio analytics, high performance database accelerators, custom API design for internal staff of 1000+ on-shore/offshore .Net/Java programmers; high performance messaging backbone(500-600 messages per second); insurance claim/adjustment SDLC; DR; F5 load balancers**

**Technology stacks: Websphere 6.0/6.1, iLog Business Rules engine; Tibco Hawk/Tibco EMS 3.0, BW Engine 5.5;Windows/AIX/z OS, Oracle 10g; CVS source control; JMX controls; caching – memCache, EHCache, Oracle Coherence/MemCache/in-memory database/Oracle Golden Gate(disaster recovery – multiple data centers)**

### *WebsphereSolutions Architect*

**Sumitomo Mitsui Investment Bank, NYC, NY May 2008 – June 2009**

**Application(s): Bank Secrecy Act; Treasury Department cash flow reporting; forex trading(yen dollar currency swaps/hedging options/forward contracts; intelligent lexical parsing of bank wire instructions**

**Technology stacks: Websphere 5.0/6.0; Spring Transaction/Batch/Security; ANT/Maven; J2ee business design patterns; JVM tuning and performance analysis; cell/node/cluster “golden” topology configurations; Websphere Portal Server 5.0 best practices, load balancing, performance tuning, portal clustering; WAS 6.0 integration**

### *SOA Architect*

**Motorola, Schaumburg, Ill. May 2006 – April 2008**

**Application(s): Sarbanes-Oxley compliance and reporting; ESB/SOA enterprise use case design and compliance; POC/RFP competitive analysis of Tibco/Oracle/IBM SOA stack and ESB selection process; business functionality mappings with Zachmann framework/TOGAF 9 framework; establishment of SOA metrics; SOA dashboard UI design/integration; center of excellence(ESB) – ServiceMix, Apache Websphere ESB, Tibco Active Matrix**

**Technology stacks: Websphere 5.0/6.0; Spring Transaction/Batch/Security; ANT/Maven; J2ee business design patterns; JVM tuning and performance analysis; cell/node/cluster topology configurations; JBoss 4.0; XSLT handlers; SOA custom design patterns**

### *Java Security Architect*

**Marriott International Washington DC February 2006 – April 2006**

**Application(s): Visa PCI compliance; enterprise security of over 120 million “live” credit card numbers; CSO/CIO security directives; penalty for not meeting Visa PCI compliance malfeasance penalty: 1.5 million per day**

**Technology stacks: Websphere 5.0/6.0 500 WPS server farm; Cisco router IPv4 subnetting; Oracle 8/9 RDBMS; Peoplesoft hotel application(s); trple DMZ/honeypots; Tivoli Access Manager(TAM); Web Seal; Java cryptography – public/private key generation/X 509 digital certificate deployment and passphrase security**

### *Java Consultant/Architect*

**Verizon Business Corporation Greenville, S.C. October 2005 – February 2006**

**Application(s): Sarbanes-Oxley compliance, conversion from Microsoft Windows Active X 120,000 lines of Visual Basic code converted to Websphere 5 J2ee MVC stack in 5 months into production**

**Technology stacks: Websphere 5.0/6.0, MVC design pattern, Windows desktop/Visual Basic/Visual Studio 2003**

### *Systems Architect*

**Chen Yu Enterprises, LLC Detroit/San Francisco January 1998 -September 2005**

**Application(s): REIT equity fund trading and T-bill buy/sell side trading platform, creation of the the National Economic Data Warehouse application via check imaging; Visa/Mastercard mag card programming; AI/pattern recognition custom algorithm design**

**Technology stacks: Websphere 4.0/Weblogic 6.0 clusters; Linux Beowolf clusters; custom Java threading applications; JMS 1.0 queues and topics; Windows/HP UX 9.0 OS platform (8 CPU); Unix context switching, custom pthread.h programming and Unix kernel tuning; Perl scripting, BASH shell scripting; custom Java Swing Ui development; Windows C++/Visual Basic 5.0 custom UI/graphics programming and development;**

### *Independent consultant*

**IBM Thomas Watson Research Center/ Hawthorne, New York 1996 – December 1997**

**Application(s): custom video stream server client development, design and coding**

**Technology stacks: CORBA technology via Iona Orbix and Visigenics; IDL/C++/Java custom programming; CORBA object mapping and design; AIX 4.0/SMIT, Windows 3.1**

### *Systems Developer/Software Engineer Positions*

**Fortune 500 Corporations 1974-1995**

* Various systems development and design positions with Fortune 500corporations including Merrill Lynch, ATT, General Motors, PrudentialBache, Chrysler, NCR Corporation, JP Morgan Chase/Banc One, Solomon Brothers, L.F. Rothschild, Allied Signal/Bendix, Itochu Corporation (NKK)

### Education

Fairleigh Dickinson University MBA in Management Information Systems

Rutherford, New Jersey

Wayne State University Master’s in Computer Science – emphasis in large scale software system design

Detroit, Michigan

Wayne State University Bachelor’s in Applied Mathematics

Detroit, Michigan

CCDH 5.0 - Cloudera Hadoop Certified– Developer (Big Data)

CCDA 5.0 - Cloudera Hadoop Certified – Administrator (Big Data)

Spark training with DataBricks

Cassandra developer and operations training with DataStax Academy

Kafka training with Confluent.io

Oracle/Sun Certified Enterprise Architect

### Affiliations

Active member of the ACM – Association for Computing Machinery

Access to 2011 ACM Digital Library – over 250,000 papers in software engineering and computer science