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KEYWORD SUMMARY

DevOps, Scalability, Python, Docker, Java, Mesos, Javascript, Puppet, AWS

OBJECTIVE

I am looking for a full-time position as a lead, principal, or senior software (and/or systems) engineer or architect, designing and developing interesting and challenging systems, services, and applications.

HIGHLIGHTS

- 15+ years software development and operations experience
- A highly curious generalist
- Product development and consulting experience
- Depth in language, educational, and community projects

CORE COMPETENCIES

- High-scale web application and service development
- Combined development, deployment, and operations
- Systems architecture and design

EXPERIENCE

Senior Principal Software Engineer

September 2016 - Present

Nuance Communications

Automotive division, Cloud Reliability Engineering, Infrastructure team

Durham, NC

- Swype's Connect Operations team moved to the hosting group for the Mobile division, which later became to the new Automotive division
- Remained in 1st tier on-call rotation for Swype Connect
- Implemented Foreman for system management and provisioning of bare metal, ESX, and Azure instances
- Deployed infrastructure world-wide in Azure using purpose-built and reusable Terraform modules
- Integrated Katello for management of system and application content across all datacenters
- Rolled out FreeIPA to centrally manage SSL certificates, Kerberos, DNS, system auth (sssd), and application auth
- Designed and built proof-of-concept multi-tenant compute platform using Mesos, Marathon, Consul, Calico, HAProxy and Docker to support auto-scaling and blue-green deployments of microservices
- Architected a solution to provide applications and systems "Visibility" for our customers using ELK for logs, Graphite for metrics, and Sensu for alerts
- Built and maintained centralized, per-datacenter, secure, multi-tenant, ELK-stack clusters for "Visibility" using Elasticsearch, Kibana, Logstash, ElastAlert, and ReadonlyREST
- Created go app that generated Sensu checks for services running inside Kubernetes, querying API for services annotated with configmaps that describe alert thresholds
- Deployed Jenkins 2.0 integrated with GitLab for CI/CD. Built shared pipelines (as code) to build all our RPMs, Docker images, and Puppet modules
- Made and/or used rspec-tested Puppet 4 modules to deploy all of the above
- Authored Puppet 4 "base" system module to manage all fundamental aspects of our systems, including: puppet, mco, auth, sshd, time, osquery, limits, firewall, auditd, packages, sysctl, monitoring, logs, selinux, DNS, and metrics
- Used Packer to bake Azure images for faster provisioning
- Setup a CI/CD pipeline to package each customer's "visibility" configurations (Kibana dashboards, Logstash configs, ElastAlert rules, and Grafana dashboards) and install them on the appropriate clusters
- Documented our platforms and stacks, evangelized them to our customers, and assisted with customer on-boarding

PROJECTS:

- + Mobile Compute Platform
- + Mobile "Visibility" stack
- + Mobile Shared and Core Services
- + Jenkins 2.0 CI/CD pipelines
- + Kubernetes Sensu Checks
- + Swype Connect

Principal Software Engineer

January 2012 - September 2016

Nuance Communications

Mobile division, TextIO R&D, Connect Operations team

Durham, NC

- Swype was acquired by Nuance!
- Continued the development and improvement of the Swype Connect API, with the main focus on performance, allowing us to scale to hundreds of millions users
- Improved visibility of our connected services, using Graphite, statsd, collectd, Grafana, Kibana, and SNMP, giving us insight and trending data into how our application is performing and being used
- Switched from EC2 Auto-Scale to a Puppet managed, but manually scaled system
- Migrated SwypeConnect from AWS to an in-house, managed ESX cluster
- Used Hadoop and Pig to mine Cassandra for application usage and trend data
- Built second API in Go, wrapping core business logic written in C, to support realtime predictions in the cloud
- Assumed responsibility of legacy Java/Spring language database mangement system
- Built server support for on-device storefront
- Deployed and support applications in Chinese datacenters

PROJECTS:

- + Swype Connect
- + Language Lab

Senior Systems Engineer

Engineering, Connect Operations team

June 2011 - December 2011

Swype
Durham, NC

- Came on board to lead the effort of building a high-scale web-service to support tens of millions of mobile transactions per day, to enhance phones using the Swype keyboard
- Built a multi-datacenter, geographically redundant, Python/WSGI web-service to support millions of write-heavy requests per day, backed by a similarly redundant Cassandra cluster
- Hosted in Amazon Web Services, for ease of build-out and managed infrastructure, utilizing EC2, AutoScale, CloudFront, CloudWatch, S3, Route53, RDS, ElasticCache
- Used EC2 auto-scaling to ensure a timely response to customer demands
- Built a true DevOps team, using PagerDuty, Nagios, Graylog, SyslogNG, and EC2, plus our stateless custom web service that we both developed and operated in Production

PROJECTS:

- + Swype Connect

Principal Software Engineer

Engineering team

September 2002 - June 2011

BBH Media
Raleigh, NC

- Architected and developed and new website platform; moving all high-volume sites into a centralized, load-balanced, three-tier, standardized codebase using jQuery, PHP on Zend Framework, SOAP, JPA, EJB3, MySQL, and Lucene
- Built a web-service-exposed, JEE middleware to power customer self-service and management portal using JPA, EJB3, SOAP, and MySQL
- Architected, designed, and developed a scalable, clustered, high-availability, J2EE-based content authoring and management system using JBoss, Hibernate, JSP2, XSLT, and SQL Server
- Designed, optimized, and normalized all major business systems' database schemas
- Developed custom content management system using JBoss, EJB, Struts, Velocity, JSP, JSTL, and PostgreSQL
- Made heavy use of DHTML and JavaScript for both front-facing and internal applications, including remote scripting and AJAX
- Built and extended a custom PHP-based CMS system for e-zine publication
- Wrote functional, integration, and unit tests
- Administered CruiseControl and Hudson continuous integration and build systems
- Mentored junior and new engineering hires
- Documented requirements for outsourced projects
- Designed and built internal web applications to automate internal business functions, such as content publishing, indexing, and search
- Built international, multi-currency money management system, including automated thirty-party import and international credit card processing
- Created and maintained PHP and PERL scripts for website management and content validation
- Ported and rewrote legacy PERL scripts with more robust PHP scripts, also adding new site features such as pagination
- De facto and acting Linux, BSD, and Windows system administrator

PROJECTS:

- + Redesign of websites using Zend Framework
- + JEE(J2EE) Content Management System
- + PHP Electronic Zine CMS
- + Multi-currency Payment Processing System
- + Public PHP & PERL scripts

Lead Engineer

Internal Support, Developer Web Services

May 2002 - September 2002

Sun Microsystems
Menlo Park, CA

- Led engineering effort for devCK, Developer Community Knowledge project
- Main developer for reimplementaion of JCP site, tasks included:

PROJECTS:

- + Java Community Process

- Redesigning the entire DB schema, as well as creating object-relational mapping
- Porting and upgrading the administrative site from old Vignette TCL to the new Java platform
- Rebuilding the public website from JSP (Model 2) site to MVC, as well as using the new data model

+ Developer Community Knowledge

Java Engineer

Systems Engineering team

September 2001 - January 2002

James Irvine Foundation
San Francisco, CA

- Independently contracted with the James Irvine Foundation to complete Coral Connect project.
- Designed and implemented message boards, file storage, address book, and other interactive services of the project using Arsdigita Community System, XML, XSL, and Oracle 8i.
- Configured qmail, Courier IMAP, JWMA Web mail, and ACS for Java on Solaris 2.8 for custom integrated webmail feature.

PROJECTS:
+ Coral Connect

Java Systems Engineer

Systems Engineering team

March 2001 - September 2001

Liquid Thinking
San Francisco, CA

- Designed and implemented binary parsing, scoring, and other educational algorithms for an interactive educational product using Rational Rose and ATG Dynamo 4.5.
- Architected and designed file system integration for intranet using Arsdigita Community System 4.6, XML, and XSL.
- Implemented product family parametric search for Cypress Semiconductor using JavaScript, PERL, and ColdFusion.
- Led Quality Assurance effort for Certicom site redesign using Logigear TrackGear.
- Began work on CoralConnect but entire team was then down-sized (finished at subsequent position with James Irvine Foundation)

PROJECTS:
+ Leap Track
+ Cypress Semiconductor
+ Certicom
+ Coral Connect

Software Engineer

Policy division, Center for Technology in Learning

June 1999 - February 2001

SRI International
Menlo Park, CA

- Architected and implemented many web applications, online surveys, and web assessments using Java Servlets, JSPs, XML, and MySQL databases.
- Designed and coded various reusable frameworks, from survey tools to database abstraction layers.
- Co-developed and designed ChemSense, a Java-based Knowledge Building Environment for high-school chemistry students.
- Built CILT Knowledge Network and affiliated web sites, and single sign-on framework in Cold Fusion and MySQL on Linux.
- Designed and authored TeamLab, a Palm Pilot-based open-ended assessment application, desktop conduit, and website that supports off-line data collection and on-line statistical analysis.
- Helped port URLeX from Python code to Java.
- Implemented Instructional Metadata IMS Metadata XML Generator tool, on a contract for Sun Microsystems

PROJECTS:
+ TeamLab
+ ChemSense
+ CILT KN
+ URLeX
+ LOM-IMS XML Toolkit

COMPUTER SKILLS

Computer Languages:

Python, Java, Go (golang), Javascript, Ruby, JSP & JSTL/EL, Scala, XML, PHP, DHTML & XHTML, Groovy, XSLT & FO/P, PERL, Bash, Velocity, i18n, C & C++, ColdFusion, Lisp, MIPS assembly, InstallShield Script

Databases:

Cassandra, MongoDB, MySQL/Maria, PostgreSQL, MS SQL, Oracle, Solid, FileMaker Pro, mSQL, Access

Platforms:

Kubernetes, Mesos, JBoss, Tomcat, Zend Framework, Spring, Resin, ColdFusion, Vignette, ATG Dynamo, Arsdigita ACS

Tools:

Web Servers: nginx, haproxy, uWSGI, gunicorn, Apache

Provisioning: Foreman, Cobbler, Terraform, Packer, AWS CloudFormation, Azure Templates

Container: Docker, Mesos, Kubernetes, Marathon

Virtual Network: Calico, Flannel, OpenVSwitch
Service Discovery: Consul, Zookeeper, EtcD, MesosDNS
Configuration Management: Puppet, MCollective, Ansible, Chef
Search: ElasticSearch, Kibana, Logstash, ElastAlert, ReadonlyREST, SOLR, Lucene, Verity
Monitoring: Sensu, Nagios, SNMP, Cacti, SyslogNG
Metrics: Graphite, Carbon, Collectd, Statsd, Bucky
Identity/Auth: FreeIPA, OpenLDAP, OpenID, OAuth
NoSQL: Cassandra, Hadoop/HBase, MongoDB, CouchDB, Riak
Reporting: Spark, Hadoop, Pentaho, Jasper, Crystal Reports
Messaging: RabbitMQ, ActiveMQ, JBossMQ, JBoss Messaging
IDE: IntelliJ IDEA, PyCharm, Eclipse, NetBeans, Xcode, Visual Studio, CodeWarrior, JBuilder
Modeling: Visio, OmniGraffle, Rational Rose, Visual Paradigm, Poseidon, Argo UML
Version Control: Git, Subversion, CVS, Perforce, SCCS, RCS
Bug Tracking: JIRA, Bugzilla, Eventum, TrackGear
Web UI: jQuery, YUI
Build: Ant, Jenkins, Hudson, Cruise Control, Maven2, Make
Unit Testing: py.test, JUnit, Cobertura, Mockito, EasyMock, JMock, Cactus, TestNG
Performance Testing: JMeter, Apache Benchmark, JProbe
Caching: Redis, Memcache, APC, XCache
Web/Integration Testing: Selenium, JProbe
Persistence: Hibernate, JPA, EJB, OJB
MVC: Django, Ember, Angular, Struts, Grails, Spring MVC, Cake PHP, BeboP
Virtualization: AWS, Vagrant, Azure, VMWare ESX, VirtualBox, Xen
Text Editor: vi(m), Atom, Emacs
Installer: InstallShield, NSIS
Command Line: GNU tools, Cygwin
IM: Jabberd, Openfire
Aspect Handling: AspectJ, JBossAOP

Operating Systems:

CentOS, Windows Vista/XP/2000/NT, RedHat EL, MacOS, Solaris, PalmOS, BSD, SunOS

PUBLICATIONS

[Disambiguating Drag-and-Drop: The Click-and-Fill alternative to managing hierarchies](#)

I explained my implementation of a new "Drag and Drop" like interface

Published: CHI 2000 Conference Proceedings, April 6, 2000

[Workpad + Palm Series Powered Pack 2000 Edition](#)

My software was written up, rated, and included on accompanying CD-ROM

Published: ASCII Corp., March 10, 2000

Language: Japanese

[Workpad + Palm Series Powered Pack](#)

My software was written up, rated, and included on accompanying CD-ROM

Published: ASCII Corp., June 11, 1999

Language: Japanese

EDUCATION

1995 - 2000

Goucher College Towson, MD

BA in Computer Science

Courses in Java, LISP, 3D Graphics, A.I., Assembly, Software Engineering, Algorithms, Hardware Architecture, and Computation

Summers 1994 - 1997

University of Delaware Newark, DE

Graduate & undergraduate courses in C, C++, compiler design, computer graphics, and multimedia design.

REFERENCES

Available upon request