

## **Yigong Liu**

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### **Summary:**

Hands-on senior software engineer with more than 10 years industry experience. Strong background in distributed and cloud systems, mobile, web and database applications.

### **SAP Concur 1/2020 – 2/2021**

#### *Senior Software Engineer*

Develop data processing software pipeline at DataPlatform team; developed AWS infrastructure automation projects using AWS CDK/Java; developed data governance and job runner web services, using Golang/Java, Echo(web framework), RESTful/Swagger/OpenAPI, AWS SDK (DynamoDB, S3, SQS, SNS, Lambda, EventBridge, EMR, EKS), AWS Cloudformation/CDK, Kubernetes, Helm.

### **XCONNS 5/2014 – 5/2019**

#### *Senior Software Engineer*

Develop Kafka work queue for OpenFaaS (function as a service) using Golang, docker swarm, apache kafka and Shopify sarama; Develop "kadm" - an experimental Kafka client for admin api; Develop experimental cluster scheduler/executor using Apache Mesos and Golang (<http://github.com/yglcode>); Design and develop open source frameworks and libraries for distributed message passing and reliable back-end services construction using Golang (<http://github.com/go-router>).

Design and develop mobile communication software for android devices ( <http://peerdevicenet.github.io>, <http://github.com/peerdevicenet>) using Java, Android SDK, SecureSocket/TLS/SSL, RPC/IDL, WiFi/WiFi-Direct, multi-threading, Eclipse.

### **IRIS 11/2013 - 4/2014**

#### *Software Developer*

Develop RESTful web services and web site for IRIS Seismology software products (<http://www.iris.edu/spud>). Using JavaEE/Glassfish application server, Jersey/RESTful services, JDBC/JPA/Hibernate, JSF2/Primefaces/Javascript/jQuery/HTML, Python, Postgresql/SQL.

### **Walt Disney Company 5/2010 – 10/2010**

#### *Senior Software Engineer*

Develop internal RESTful web services for ads reporting using Java, Spring, ApacheCXF, iBATIS, Tomcat, SQL Server.

Develop internal ads log analysis tool using Java, Hadoop, HDFS.

### **Microsoft Corporation 2/2008 – 11/2009**

#### *SDE II*

Develop RESTful services at Windows Live department using C#/C++/ASP.Net.

Develop JavaME based mobile Javascript runtime for feature phones at UPG, including runtime debugging protocol support, implementing generic code generation tools to extend Javascript compiler and runtime DOM to enable Javascript access to phone's GPS, camera, PIM and SMS; using J2ME and Netbeans; Develop backend service to serve photos from Facebook api to mobile clients, using C#/ASP.Net.

### **AOL Mobile Department at Seattle 5/2006 – 2/2008**

#### *Senior Software Engineer*

Develop mobile client and server for mobile IM service. The client is developed with J2ME and backend service with Java/Tomcat servlets, involving serving map tiles and AIM buddy info by connecting to MapQuest services api and AOL IM service api; using J2ME, Tomcat, MapQuest Advantage API, Eclipse and NetBeans.

Develop AOL mobile instant messaging servers processing Wireless Village CSP protocols, communicating with AOL IM server clusters; using Linux, C++, STL and AOL proprietary cluster distributed computing systems.

#### **F5 Networks 10/2005 – 5/2006**

*Senior Software Engineer*

Develop enterprise management software, using Linux/C++/Java/XML/MySQL

#### **OPNET Technologies 3/2005 – 10/2005**

*Senior Software Engineer*

Develop network management software and algorithms which have resulted in the following patent: "Generation of a network topology hierarchy" (<http://ip.com/patapp/US20070097883>), using Windows/Unix/C++/OPNET proprietary GUI/Networking frameworks.

#### **Andrew Corporation 4/2004 – 3/2005**

*Senior Software Engineer*

Develop Serving Mobile Location Center (SMLC) server in accordance with 3GPP standards:

Design and develop pub/sub message-passing framework, multi-thread, multi-process and multi-node server architecture, protocol encoding/decoding library for 3GPP protocols: BSSMAP-LE (3GPP TS 49.031), BSSLAP (3GPP TS 48.071).

Develop main control logic for request processing, error recovery, system configuration and health monitoring.

Developed SS7 Interface using libraries and SS7 cards provided by Ulticom.

Using Solaris 8 / RedHat Linux, GNU C++ 3.3.2, ACE5.4, STL, Ulticom Signalware SS7/SCCP/TCAP, MySQL.

#### **Lambda Optical Systems 7/2003 – 4/2004**

*Senior Software Engineer*

Develop distributed embedded cluster software for a MEMS optical switch which is controlled by cluster of microprocessor blades, using VxWorks and Tornado.

Develop message-passing library with proprietary reliable datagram protocol;

Develop resource management, fault detection and failure recovery software as distributed state machines interacting via message passing;

Design and develop data replication, redundancy and high availability software (across active-standby blades) using message passing and BerkeleyDB.

Develop Ruby test automation framework for distributed/embedded control software.

#### **Business Service Enterprise, AT&T Labs 10/2002 – 7/2003**

*Member of Technical Staff*

Develop JavaEE based billing gateway (BSOM) to replace multiple traditional AT&T billing servers. It processes requests with order entry, provisioning management, long-distance and local services accounts database; using EJBs, Weblogic6.1, Oracle 9i, Corba and message queues.

Develop a data quality interpretive system (DQIS) to reconcile embedded data discrepancies in multiple network, provisioning and billing databases; using Java, Ruby/Perl, Shell, PL/SQL, JSP/Servlet/HTML, Connect:Direct, Oracle 9i.

#### **Lucent Technologies 11/1996 – 10/2002**

##### ***Optical Networking Group (ONG), Lucent Technologies 8/1999 – 10/2002***

*Member of Technical Staff*

Develop distributed/embedded cluster software for LambdaRouter MEMS switch, which is controlled by cluster of Motorola 68360 microprocessors running Chorus or VxWorks and communicating through internal LAN; using C++, Corba, Message Passing, GreenHill Multi debugger, StoreMan main memory database.

Develop device driver for High Voltage DAC Pack and its interface to Corba objects for provisioning.

Develop dither service software running as distributed master-slave tasks across cluster to adjust MEMS mirrors orientation against drifting, using thread pools, priority message queues, fast inter-processor communication.

Develop distributed scheduling (master-slave) service software for setting up connections between input and output ports based on user requests.

Develop multi-threaded message-passing framework prototype using ACE OO design patterns and frameworks.

### ***Optical Networking Group (ONG), Lucent Technologies 12/1997 – 8/1999***

#### ***Member of Technical Staff***

Develop network management system (SNMS). Develop GUI client on Windows PC using Java/Swing and backend servers (equipment provisioning and alarm event handling) using C++/Corba on HP multiprocessor server.

Develop Cpro - CIT interface to Lucent SONET network elements (DDM-2000(OC3/OC12) and FT-2000(OC48)) using VB for GUI and VC++ COM/ATL for equipment data model.

### ***Bell Labs, Lucent Technologies 11/1996 – 12/1997***

#### ***Member of Technical Staff***

Develop testing software for Internet Telephony Servers; using Java and Bongo for Windows GUI and TCL/TK for Linux GUI, driving Korn Shell test scripts.

Develop on-line mall web site for city of Westfield NJ to drive new telephony technologies, using HTML/Java Script/CGI, C++/STL, OODBMS(Illustra) and tcp socket for DB connection pool.

### ***EDS/Unigraphics 06/1994 - 10/1996***

#### ***CAD/CAM Software Engineer,***

Develop parallel CAM geometrical algorithms for tool-path generation for machining 3D surface in UG12.0 (C/PVM), running on workstation cluster.

Extend the interpreter of a high level user language (GRIP) with new features of UG products, using C/Fortran.

Develop user interface features for UG10.4/10.5/10.6/v11.0, using C++, OpenGL and Motif.

### ***China Precision Engineering Institute, Beijing, China 10/1986 - 09/1992***

#### ***Software Engineer, participate in Chinese National Scientific Technological project***

Develop 3D CAD/CAM software products for shoe and fashion industry, develop package for 3D surface intersection, trimming and rendering.

Develop package for interactive design and modeling of 3D patterns on top of 3D surfaces.

Develop package for the deformation analysis and optimal unfolding of curved surface pieces, and algorithm for determining the geodesics on curved surfaces.

Using C/C++, OpenGL, HP/UX/SunOS/IRIX.

### **Patents:**

"Generation of a network topology hierarchy" (<http://ip.com/patapp/US20070097883>)

"System and Methods for Secure Ad-Hoc Peer-Peer Communication Among Computing Devices" US 61/768,909

### **Education:**

EMORY UNIVERSITY May 1996

*Master of Computer Science, 3.95/4.0*

(system and network programming, object-oriented design, parallel processing, cluster computing (PVM/MPI))

Thesis: Parallel 3D Rendering Algorithms on Multiprocessors and Workstation Cluster.

Beihang University **July 1986**

*Master of Mechanical Engineering, 90/100*

(computer aided geometrical design, NC/CNC, CAD/CAM)

Thesis: Optimization of Work Flow at Manufacturing Shop.