WILLIAM LEIBZON
(RESUME SUMMARY FOR JOB PORTAL)

I'm only open to remote consulting work. No consideration of on-site and/or full-time jobs. Would consider challenging projects in Data Science and Engineering, Open Source Development, Monitoring & Observability, Embedded Systems and IoT. To contact send email to william-resume@leibzon.org with a subject "I have read your resume summary.

Programming Concepts and Skills

- **Education**: Ph.D in Data Science and Economics from UC Irvine. Computer Science degree from UCLA.
- **Experience**: 20 years of experience in software development and IT areas. Happy to mentor junior team members
- **Programming Languages**: C, C++, Java, Python, R, Matlab, PHP, Perl, Ruby, Groovy, Ocaml, Julia, GO
- **Development Methodology:** Experience with Software Development Lifecycle (requirements, analysis, design, development, testing), Agile methods such as SCRUM, continuous integration, DevOps approach to infrastructure
- **Parallel Programming**: Experienced with multi-thread programming utilizing Posix Threads, OpenMP, Java Threads, CUDA and multi-process programming and process communication with shared memory and unix pipes.
- **Network Programming**: Experience with network programming using TCP/UDP sockets for both IPv4 and IPv6. Can use SSLayer and Cryptlib to provide network security and channel or data encryption with public or private keys.
- **Backend Development**: Have been involved in backend programming for applications written in PHP, Java and Python. Have written web interfaces with CGI (C, Perl), PHP, Java using MySQL, PostgreSQL and Oracle databases.
- **GUI**: Worked on GUI and Mobile (Android) applications and tools using Java (Netbeans framework), QT, PhoneGap
- **Software Repositories and Build Systems**: Experience with GIT, SVN, CVS, Mercurial, SourceSafe, StarTeam software repositories. Experience with variety of build systems: gnu automake, cmake, Maven, Ant, Gradle, Jenkins
- **Algorithms & Problem Solving**: Good with data structures and algorithms. Generalist with knowledge that transcends many areas. Known for prototyping and "thinking outside the box" to come up with solutions for complex problems.
- **Open-Source**: Open-Source enthusiast and contributor. User of Linux for almost 25 years (from early 1990). Contributor to Linux Kernel, several gnu utilities, monitoring tools, and other software

Data Architecture and Database Programming:

- **Data Architecture**: design focus on best solution - SQL for structured data and where complex queries are common, noSQL in memory like Redis for key-value data, MongoDB for large general document store with some structure, Cassandra, Hbase or similar for columnar, time-series, historic data and extremely large data sets
- **SQL/noSQL**: have done database design and SQL schemas for use with MySQL, PostgreSQL, Oracle. Helped come up with hybrid SQL and noSQL (redis, mongodb, neo4j) designs for optimizing application data use and speed.
- **PL/SQL**: have written stored procedures, triggers, views in PL/SQL and SQL/PSM for Oracle, Postgres and MySQL
- **Redis**: have used Redis and Memcache on backend for efficient storage of small data. Wrote popular monitoring plugins to check database consistency and ti allow using redis as a basis for monitoring events from other devices
- **MongoDB**: Have used MongoDB for backend storage for Node.JS application and as a datastore for unstructured data. Training on use of MongoDB for data analytics tasks. Regular attendee of MongoDB meetups in Orange County.
- **Neo4j and Graph Databases:** Used Neo4J as a backend for Data Mining of social networks (GitHub, Meetup) and other sites. Data analysis after with TinkerPop Gremln, R, Gephi. Also familiar with Titan distributed graph database.
- **Hadoop and HBase:** Have setup Hadoop cluster for research with SparkQL for data mining research application. Can write MapReduce Java and R programs. Have setup HBase as alternative for storing data for monitoring system.
- **Cassandra, InfluxDB, Kafka:** Have done micro-service architecture and development that used Cassandra for storage and Kafka for data aggregation for real-time data analysis. Have setup and used InfluxDB for time-series metrics data

Data Science and Machine Learning:

- **Education**: Ph.D in Economics with Data Science Certificate. Prior degrees in Computer Science and Mathematics.
  - Ph.D work in: Evolutionary Game Theory, Social Network Analysis, Complexity Science, Computational Modeling
  - Courses in: Probability & Statistics, Computation Linear Algebra, Artificial Intelligence, Graph Algorithms
- **Math and Statistics**: Linear Regression, Model Selection, Predictive Modeling, Single Vector Decomposition (SVD), Primary Component Analysis (PCA), Least Squares, Kernel Analysis methods, Spectral Clustering, Convex Optimization, Exponential Random Graph Models (ERGM), Random Forest, Gradient Descent
- **Machine Learning:** Supervised (Linear Regression, Decision Tree, Naive Bayes, Neural Networks, Deep Learning), Unsupervised (K-Means, Topological), Reinforcement Learning (Monte Carlo, Adversarial, Deep), Predictive Analytics
- **Data Analysis and Modeling Tools:** Python – SciPy, Numpy, Pandas. Social Network Analysis – Gephi, Pajek, iGraph, NetworkX, Statnet. Sentiment Analysis - CoreNLP, Pattern, SentiStrength, SentiNet. Deep Learning – Caffe, TensorFlow, Merlin, OpenDeep, h2o. Agent-Based Modeling - NetLogo, Mason, Swarm. Visualization – Plotly, d3 & d3.js, Graphite

Cloud Systems Architecture:

- **Public Cloud (AWS):** 10 years of experience with architecture and setup of infrastructure using public clouds
  - Lot of experience with Amazon AWS including: EC2 (with and without elastic disk storage), ELB, S3, RDS (MySQL/MariaDB, PostgreSQL, Aurora), SQS, SES, Elastic Cache (Memcache, Redis), DynamoDB, Titan
  - Also familiar with Rackspace, Google, Azure and several smaller clouds vendors
- **Private & Hybrid Cloud:** Experience with cloud infrastructure using OpenStack, OpenShift, Eucalyptus and Vmware
  - OpenStack used was for internal development, integration & testing environment, and for analytics
  - Vmware used in production hybrid cloud with databases on dedicated server and application on vmware servers.
  - Used Docker for production micro-services architecture. Experience with Docker Swarm, Mesos and Kubernetes. Can also use docker with Jenkins to build development & test environments for future cloud services.
- **Cloud Architecture & Security:** Architecture with High Availability and Redundancy. Performance focus on Disk and Memory for Database vs CPU for Application servers. Cloud Security with separate groups for each server type.
- **Configuration Management:** Cloud systems configuration management using Puppet (most experience with), Chef, Ansible and orchestration setup with SaltStack. Vagrant for development. Familiar with: JuJu, RightScale
- **Performance Tuning**: Experience optimizing to achieve peak performance while balancing costs of cloud services. Pro-active monitoring architecture to test for faults, and log monitoring to react to faults, with graphing of all stats

Observability and Monitoring Architecture:

- **Open-Source Monitoring:** Top expert in open-source monitoring tools and architecture. Can build systems based on Nagios, Zabbix, Ganglia, OpenNMS. Observium, Sensu, OpenITCockpit, Prometheus, Grafana, WebInject, Selenium.
- **Nagios Expertise:** Nagios MVP (Most Valued Professional) award for contributions to Nagios Core and plugins. Wrote 50+ SNMP and other plugins for Network devices, Linux, MySQL, Redis., Java. Can create distributed redundant system based on Nagios XI, Centreon, Icinga, Naemon, Op5 with NRPE, mod_gearman, dnx, check_mk_multisite, livestatus.
- **Enterprise Monitoring Systems:** Experience with enterprise monitoring using HP Open View and SolarWinds
- **Log Collection and Analysis:** Experience with syslog-ng, rsyslog for log collection. Experience with log4j, logc, logly libraries for application logging. Experience with ELK Logstash, Splunk, Dynatrace for log analytics.
- **Observability and Applications Tracing:** Experience with application observability, tracing and cloud monitoring based on OpenTelemetry/OpenCensus: Prometheus, Zipkin, Jaguar, Haystack and New Relic, Datadog, InspectIT

Embedded and Linux System Development:

- **Linux Kernel:** First contribution in 1996 – scsi driver, then 2000-2003 to LSM development, and occasional patches to drivers (last wireless 2013). Was on linux-kernel mail list, attended several Ottawa Linux Summit conferences
- **Linux Distributions:** Worked with linux distributions based on Redhat, Debian, Ubuntu, SuSe, Slackware, Gentoo, Arch. Can customize linux kernel. Created two custom linux distributions for appliances and servers.
- **Filesystem Development**: Have written code for block device access for Linux for prototype project. Have written filesystem drivers 3 times: one for DOS in 1990s,, one linux kernel driver, and one FUSE driver
- **Embedded ARM Boards and Android**: Have worked with Cortex A9, A15 and other ARM processors and ARM-based boards. Worked with SnapDragon, Tegra and Exynos chips for Android devices. Worked with BeagleBone, with Intel Atom based boards and chips. Can set up new board hardware and debug boot process using serial console and JTAG.
- **Embedded Systems Build:** Have worked with crosstool and timesys toolchans. Have created embedded distribution with buildroot and from scratch, both with glibc and uclibc libraries. Custom-compiled BusyBox and other binaries. Have worked with OpenWRT and created custom Android distributions based on AOSP and Cyanogen.
- **Embedded System Management:** Have written C programs for web CGI interface. Can use lighthttpd, uhttpd, appweb with some ejscripting. Written new MIBs and SNMP server additions for external system monitoring and coniguration.
- **Network Software Development:** 10 years of experience as a network engineer. Familiar with and have written software for every ISO layer: L1/L2 - VTP and CDP linux implementation, L3 - BGP routing and analysis using Bird, L4/L5 – udp secure transport for VMF protocol, L6/L7 - DNS, HTTP, SNMP, SMTP, XMPP, WHOIS clients and servers
- **Network Security**: Written tools for network analysis, packet inspection, honeypots and filtering tools. Created custom linux firewall appliance. Used Wireshark, Snort, NTop, Tripwire, Nessus, SAINT and pcap, openSSL, Cryptlib libraries

Unix System and Network Engineering:

- **Unix Systems**: 20+ years of experience in automating on Unix systems and tuning system performance. Have worked with many Linux flavors including Redhat, RHEL, CentOS, Debian, Ubuntu, SuSe and others. Also FeeeBSD, Solaris. Experience with debugging, profiling and performance tuning of unix programs, and linux kernel, finding memory leaks.
- **Network Infrastructure**: 20+ years of experience with TCP/IP networking. Have setup and supported multi-city multi-datacenter ISP infrastructure with Cisco routers and switches. Experience debugging using Wireshark and other tools.
- **Network Protocols and Unix Programs**: Experience with DNS (Bind, Dnsmasq, PowerDNS, djbdns), HTTP / HTTPS (Apache, LightHttpd, NGINX, Haproxy, Squid), SMTP/POP3/IMAP (Sendmail, Postfix, Qmail, Courier, Cyrus, Dovecot), Java App Servers (Tomcat, JBoss, JRUN), SMB/CIFS (Samba), NFS, NTP, FTP (proftpd, ncftpd), SSH (openssh, dropbear)
- **Unix Scripting**: Experience with scripting using Bash, Cshell, Awk, Perl. Experience with POSIX and PERL style regular expressions. Experience creating scripts and web interfaces for configuring new servers and adding new users

William Leibzon

Location: Long Beach, CA   Citizenship: USA
E-Mail (see above notice): william-resume@leibzon.org

OBJECTIVE

Seeking challenging consulting software development and systems architecture work. Particularly interested in projects involving data science and data engineering, cloud computing, network and systems monitoring, open-source development, network security, embedded linux, IoT and mobile devices..

Only telecommute / remote consulting work will be considered (max acceptable travel or on-site is 10%)

EXPERIENCE

CONSULTANT: Linux & Open-Source Developer. Cloud & Data Architect. Monitoring Expert

AT&T (2019-2021): Sr Technical Architect. Network Orchestration. Cisco NSO. Java. Python. Kafka. Zipkin
L3 Interstate Electronics, Anaheim (2017-2018): Real-Time Data Analysis Software. Java. Python. VMWare.
Comtech, Germantown MD (2015-16): Embedded C++ Programming. IPv6. Threat Analysis Modeling
50Cubes, San Francisco (2012-14): Amazon AWS Architecture. Nagios. Puppet. MySQL Redis, MongoDB
GPS Logic, Irvine (2011): Embedded Linux Router work. Buildroot architecture. C Programming
Neovan Networks, Cupertino (2009-2011): AWS EC2 Architecture, Java and PHP Programming
NetLogic, San Jose (2009) : Perl Tools Programming, Nagios Monitoring. NetApp performance analysis
Mypoints, SF (2006-2009) : Tools Development, Nagios Monitoring Architecture. PHP, Perl, C, Java
Exelixis, South SF (2006) : Setup of Monitoring for Biotech Research Application. Python programming

Information below incorporates consulting and open-source work for many companies (largest listed above):

Micro-Services Architecture

Java & Python Application Development

Embedded Development: ARM & Android. C/C++, Python, PHP, Javascript

Data Science & Machine Learning Semantic Analysis, Python & NumPy

Software Security Code Analysis, Threat Modeling

Monitoring & Performance Visualization: Nagios, Splunk, Prometheus, Zipkin, Jaeger

- Work with Cisco NSO to architect and support network orchestration and management system for large client with Cisco routers and firewalls. Programming of features and extensions in Java and Python. New platform built using Docker for visualization and debugging of NSO performance based on OpenCensus tools: Prometheus, Grafana and Zipkin with custom Zipkin exporter. Data analysis pipeline using Kafka with Cassandra for storage. Platform integration with Erlang based core system of NSO.
- Architecture and programming in Java of data inspection gateway. Created highly redundant secure multiprocess pipeline-worker architecture to pass NSA requirements for cross-domain filtering system. Support for UDP & TCP protocols with media access controls for multicast VMF protocol. Wrote XML config schema (40+ pages) and STAX API processor. Job scheduling using flow-graph. Java Swing GUI with Python backend. New MIB + SNMP agent using SNMP4j. RHEL7 on VMWare ESX deployment.
- Embedded Systems Architecture and Programming (5+ contracts/clients): custom ARM cortex boards, beaglebone, arduino, raspberry pi, openwrt, android phones. Custom linux systems using buildroot (3 times) and custom kernel including kernel driver debugging and fixing for 2.4, 2.6 and 3.x. Crosstool and timesys toolchains and upgrade of existing platforms from glibc to uclibc. System software in C/C++ and Python. Web interfaces in C, PHP, Javascript, Node.JS. SNMP agent programming and new MIBs.
- Android OS system development to integrate Android application with image processing algorithms implemented using PIL and NumPy and running within QPython.on Android.
- Data Science / Machine Learning software that can semantically analyze web pages to determine the category and type of site using machine learning. Software analyzer & miner written in Python
- Software vulnerability & security analysis of C++ software used in satellite communication. Used flawfinder, RATS & other tools. Fixed security holes related to email. Created Threat Model document and software architecture security diagram for complex multi-agent secure network messaging software. Also updated software for dual-stack IPv6 support & fixed other issues.
- Architecture, setup and programming of monitoring systems for a number of clients for both cloud and multi-datacenter (largest thousands of servers) using open-source software. Programming and design work includes customizing nagios software (patches with 5000+ lines of C code) and setup of monitoring cluster with primary, failover and collection (worker) servers, programming two dozen nagios plugins (mostly in Perl) and new web interface for data graphing. JMX-based java application performance monitoring and monitoring integration using Glowroot and Stagemoniitor with InffluxDB. Micro services architecture based on Open Census / Open-Telemtry with Prometheus, Zipkin, Jaeger.
- Infrastructure architecture and setup of production environment for startups (5+ different companies) on hardware and cloud (Amazon EC2) with custom configuration, release, and deployment scripts
  – Setup using redundant admin servers responsible for config management, monitoring, dns, syslog. Puppet or Chef for config management. Nagios and/or Splunk for monitoring.

Cloud Systems:
AWS EC2, Azure
Apache, Nginx,
MySQL, Hadoop
MongoDB, Redis
Puppet & Chef

– Architecture is fault-tolerant, horizontally scalable with high availability.. Worked with PHP, Python, Java.apps, tomcat, apache, nginx servers. haproxy and Amazon ELB load balancing
– Database is typically MySQL with master-master setup. For NoSQ worked with MongoDB, Redis and Cassandra also done some work with HBase & Hadoop as well
– S3 storage and optionally s3fs file system used for fault-tolerant storage
• Programming of custom disk space reporting and graphing tools for Netapp (>2TB, used perl with pthreads). Programming of custom memory and cpu utilization tools for sun cluster.

Network &
Security Tools
Development:
Firewall Software,
Security Test Tools,
SSL Encryption,
Intrusion Detection

• Network Security appliance work to design and setup custom Linux firewalls with support for multiple VLANs, special iptable modules written in C and custom configuration front-end.
• C/C++ development of network monitoring system utility using pcap that does low-level packet analysis of ethernet, ipv4, ipv6, tcp, udp headers and http data. Programming of network intrusion detection utilities (custom tcp honeypot to simulate ssh & ftp) and tools for automated correlation of multiple events. Custom HTTP client library and utilities doing certificate chain validation and full client-server authentication, Work on dns infrastructure security and dns attacks/intrusion detection utilities. Installation and support of network intrusion software (SNORT and others).

Open-Source
Contributions:
Linux Kernel,
Nagios & other.
C/C++, Perl, PHP

• Design and development of linux cluster with dns & HTTP load balancer using geolocation. Programming of high-availability multi-threaded loadbalancer for use with different TCP protocols..
• Open source project contributions including for linux kernel (scsi driver module and contributions to linux security modules [LSM]), unix services (inetd, ssh), wine emulation project. Participation with PHP and Javascript development for tikiwiki and bitweaver/tikipro CMS open-source projects. Open-source programmer with Nagios project and speaker at conferences.

Elan Communications Inc., San Jose (2000 - 2007)
Operations Engineer and Chief Network and Systems Architect

Network
Architecture:
Cisco, Ascend,
BGP, OSPF,
F5, Alteon

• Design and setup of network infrastructure with POPs in San Francisco Bay Area, Los Angeles, St. Louis, Chicago with multiple upstreams and direct peering. BGP configuration of Cisco 7200, 7500, GSR/12000 routers and switches. F5 & Alteon load-balancers configuration and help for clients.

Company Portal
Programming:
SQL, PHP, Perl

• Programming of IP assignment software. Design of SQL database and application for billing and customer portal in PHP. Integration with nagios monitoring. Shared customer access to dns and radius.
• Programming of network tools - ip traffic measurement, BGP analysis, whois server (complex proxy that supported 150+ tlds with integrated dns and other features) and client with its own dns resolver
• SQL data architecture and optimization of a large database/ Wrote data processing utilities, new Postgres data type and index (all in C), bulk loading scripts and many sql stored procedures and triggers.

SIP and VOIP

• Work on multiple projects to help clients with e-commerce application integration for payment processing support. Development involved PHP, Java (JSP), Perl, C/C++ (Unix CGI), ASP.
• Setup of VOIP (SIP) server and gateway and work on telephony application integration for customers

Early IPv6 Testing
Participated in
IETF, ARIN, Nanog

• Work on IPv6 testing, including 6-bone, configuration of routers, ipv6 dns support & other services, ipv6 tools and applications porting. Discussed IPv6 allocation policies at ARIN & NANOG conferences.

Email Security

• Research on topics of ip analysis, ip security, email security, distributed internet databases. Participated in IETF/IRTF CRISP, IDR, SIDR, NAMEDROPPERS, ASRG, MARID, DKIM, SIEVE and other work groups. Internet drafts on email tracking, e-mail messaging security, and BGP security.

Emerson Motor Company, St. Louis (1997 - 1999)
Java Programmer

Java Software
Development

• Involved in design of a large Oracle database for electric motor parts and components
• Java servlet application integration to access database and generate reports using Crystal Reports
• Design of database structures for the application with special security access requirements - implemented using PL/SQL stored procedures for updates, generated from Erwin data model

Database Design:
Oracle, PL/SQL

• Design of Java classes and components used as templates for creating new database screens (UI) and library for database operations. Further work on front-end UI and screens for specific motor parts.
• Installation and setup of Borland DBAnywhere JDBC server and Netscape Application Servers

BizNet Communications Inc., St. Louis (1996 – 2000)
Network Engineer

Network
Engineering

• Setup of 56k dialup network first with unix PPP servers with BRI lines, expanded further using Ascend and 3Com for PRI. Support for dedicated ISDN and T1customers using mainly Cisco equipment.
• Setup of Linux, FreeBSD, Sun servers with Apache, Sendmail, POP3, Radius, NFS, Samba, MySQL

Sysadmin Work

• Setup of Microsoft NT 4.0 with IIS Server, Netscape FastTrack, Microsoft SQL 6.5 & 7.0 databases
• Design of virtual domains e-mail system using Cyrus IMAP with Java admin frontend. SSL for IMAP
• Patch to ssh to support group-based security. Programming of SSL Server administration tools

CERTIFICATES	- Data Science Certificate from UCI Data Science Initiative (2016) - Linux (RedHat – RHCT, RHCE [#804005382618126](#)) - Brainbench (top10 score in several tests , 5 job role certificates), see [public transcript id 5072844](#) - Cisco (CCNA, CCNP, CCDP) - expired in 2008, Microsoft (95, NT 3.5), Novell (before 2000)

EDUCATION

University of California (UC Berkeley, UCLA, UC Irvine)
  part-time Physics and Anthropology at UC Berkeley (2007-2009),
  M.S. in Computer Science at UCLA (2010-2012),
  Ph.D in Behavioral Mathematics and Economics at UC Irvine (2013 - 2021)
- Courses in Computer Science, Mathematics, Statistics, Bioinformatics, Physics, Geology, Biology, Anthropology, Psychology, Sociology, Business Management, Economics, Complexity Theory (Complexity, Systems Modeling and Data Analysis emphasis)
- Projects in Scientific Programming with Matlab and R, Computational Genetics, Quantum Computing, Numerical Analysis, Filesystems and Data Structures, Analysis of Open-Source Software Development, Social Systems Modeling, Social Network Analysis, Cultural and Biological Evolution, Election Data Analysis
- Research Interests: Computational and Data Science, Game Theory, Decision Theory, Political Economy, Behavioral Economics, Social Networks and Graph Theory, Agent-Based Modeling, Complexity Theory, Evolution of Cooperation, Human Evolution
- Archeology, Geology, Photogrammetry and GIS field work during summer
- IEEE member.. Santa Fe Institute Complexity summer school fellow. ACM ASONAM, Sunbelt, CompleNet conferences presenter. On program committee for Computational Social Science

SKILLS

Hardware: PC (Intel x86), Sun Sparc, Dec Alpha/VAX, Cisco, Juniper, ARM embedded devices

Programming Languages: C, C++, Java, Python, Perl, PHP, Erlang, Groovy, Ruby, R, Matlab, Julia, GO, Ocaml, Javascript, SQL, XML, HTML, TCL/TK, LISP, Haskell, Basic, VBScript, REXX

Development Tools and Libraries: GCC, Sun JDK, JDBC, CUDA, pThreads, OpenMP, MPI, Eclipse, NetBeans, Quanta, QT Creator, Kdevelop, Symantec Visual Cafe, Microsoft Visual Studio, CVS, SVN, GIT, SourceSafe, Erwin, iSQL, RRD, Cryptlib, OpenSSL, MapReduce, Gremlin, Jira, Jenkins, iPython Notebook, qPython, Android Studio, Genymobile, gprof, Valgrind, Systemtap

Protocol Development Projects: SMTP, IMAP, DNS, HTTP, SNMP, WHOIS, RWHOIS, BEEP, IRIS (XML-based Whois Protocol), BGP (using Bird), XMPP (Jabber), TLS (SSL), SNMP, REST

Data Science Tools and Methods: SciPy (& Numpy, Pandas), Social Network Analysis (Gephi, Pajek, iGraph, NetworkX, ERGM & Statnet), Sentiment Analysis (CoreNLP, Pattern, SentiStrength, SentiNet), Deep Learning (Caffe, OpenDeep, Merlin, Neon, h2o, DSSTNE), Statistics (Linear Regression, T-index & Model Selection, Predictive Modeling), Linear Algebra (SVD, PCA, Least Squares, Kernel methods, Spectral Clustering,, Convex Optimization), Evolutionary Games Theory, Agent-based models, NetLogo

Operating Systems: Linux (many variations, including: Redhat, RHEL, Fedora, CentOS, Immunix, SuSe, Debian, Ubuntu, Slackware, Arch, Gentoo, Openwrt, Android), Sun Unix (SunOS, Solaris), Digital Unix (True64, OSF/1, Ultrix), SGI Irix, FreeBSD, Windows (NT, 2000, 2003, 7, 10), OpenVMS, Cisco IOS & CatOS, Lucent/Ascend TACOS, DOS, Novell Netware, OS/2, MacOS

Cloud Systems: Amazon (EC2, S3, RDS, SQS), Google, Vmware, OpenStack, OpenShift, Docker

Provisioning & Configuration: Puppet, Chef, Ansible, SaltStack, Vagrant, Kubernetes, JuJu, RightScale

Application & Database Servers: Nginx, Haproxy, Apache Web Server, Tomcat, JBoss, Sun iPlanet, LiveSoft JRUN, E-Mail (Sendmail, Postfix, Cyrus IMAP), Samba, OpenLDAP, MySQL & MariaDB, PostgresSQL, Redis, MongoDB, Neo4J, Hadoop, Hbase, Cassandra, Memcache, ActiveMQ, RabbitMQ

Security and Monitoring: Ethereal/Wireshark, Snort, NTop, Tripwire, Nessus, Retina, SAINT, GPG, Nagios, OpenNMS, Splink, Prometheus, OpenCensus, Zipkin, MRTG, RRD, Cricket, Grafana, Graphite, CflowD, ELK, LogStash, Checkpoint Firewall

Network Protocols: TCP/IP, IPv4, IPv6, IPSec, HTTP, DNS, BGP, OSPF, RIP, EIGRP, HSRP, MPLS, NFS, CIFS, IMAP, POP3, SMTP, FTP, RADIUS, SSH, (R)WHOIS, BEEP, XMPP, DRBD, VMF

Other Software: Visio, Dia, yEd, Photoshop, GIMP, OpenShot, Pencil, InVision, OpenOffice, LaTeX & Lyx, Microsoft Office, MS Threat Modeling Tool, MS Access, Publisher, Borland Paradox