**Xiangdong Huang (Victor)**

**Cloud ML DevOps Architect**

**Objective:**

* Cloud automation Architect for DevOps in blockchain, Machine Learning, M2M cloud automation -- Challenging my 9 years’ experience on mobile networking & my over 19 years’ experience in Silicon Valley.
* Language: English, Mandarin, Cantonese. Status: Green card holder.
* I am a green card holder. Remote only if jobs are out of Silicon Valley.

**Summary:**

* Optimization architect on all scales of MLOps infrastructure.
* PKI-trade-off Generalist for Distributed, decentralized storage and cryptocurrency-based NG supply chain.
* Smart Data Analyst on KubeFlow/microservice with Sphinx, MLFlow, tensorflow, numpy,scipy,pytorch, keras, mxnet, especially Arm Cortex based Apache mxnet performance tuning with Edge ML workload.
* Cloud native TDD hacker with NLTK on Docker, Ansible, Vagrant, Puppet, Chef, Jenkins, Rocket, Atlassian packs, OpenStack of all flavors including juju on Ubuntu.
* Proactive CI/CD/Deployment Automation pipeline builder with Golang R&D .
* Full-scale Optimizer & Debugger for Cloud Tool on messaging, networking, grub-boot, Linux Kernel, docker container, user-space, assembly level – with full-span tool-chains and network hardware.
* Master of networking for Vcenter-based Data Center migration, re-construction, upgrading & integration to Hybrid Cloud for continuous integration, continuous deployment, continuous delivery.
* Business pain-point healer and creative monetizer.
* Neuro-Linguistic Programming communicator winning people’s love on subconsciousness level. Tech mentor awakening team-players’ dream.
* Solution Architect and ML DevOps Methodology Evangelist for Performance optimization in cloud, crypto mining and machine learning.

**Technical Strength:**

* mplayer as wrapper(7 yrs), ffmpeg(10), Media codecs (MPEG1/2, Theora, 10), H264/AVC(8 years),
* CI, CD with Jenkins(5 yrs) & Docker Life-cycle Management (3 years)
* GCP/GCE SDK(5 years), Google GKE/Kubernetes(3), EKS(3), Cloud(7), aws(7), Azure/AKS(3), cloud migration(5), Golang(3), Python(9)
* CircleCI(3), Travis(4), TeamCity(3), codeShip(3), qubeship.io(3)
* RHEL, CentOS (7 years)
* Container(3): Docker, Kubernetes, HashiCorp Nomad & Terraform, Openshift Origin, CoreOS
* Atlassian Pack(5 years): Jira(5), Bamboo(3), Stash(4), Confluence(4), Trello(2).
* Android: NDK(7 years), SDK(7), adb(7), gradle(7), studio(4), maven(5), CI/CD(5).
* Tensorflow(3), Pytorch(4), MXNet(2), SciPy(5), NumPy(5), Matplotlib(7), Prophet(2)
* Kafka(5 yrs); node.js(10);
* Mean Stack(4 years, mongodb, ExpressJS, AngularJS, Node.js).
* OpenStack(4 yr), C/C++(15), Python(9), Puppet(2), Chef(2), Ansible(3), Salt(1), VMWare provisioning automation (1yr). Aws cloudformation(5 yr), Java(12), ec2(2 yr), gcm(2 yr); Euca2ools(2); scala(3); golang(3); spark(3); docker & golang(3). SolrCloud(2), Solr(4), lucene(2), nutch(3); Hadoop(5), Hbase(5); pig(5); hive(5);Cisco Fog(2), NoSQL(5): ELK(3), Cassandra(2), mongodb(3), Redis 2.8(3), Riak1.2(2), CouchDB(2), HyperTable(2). Hbase throughput tuning with ramfs & SSD(2), Raid Nodes for log & conf file distro(2).

**Professional experience:**

**Sharpool Consulting, Santa Clara, CA Oct 2019 – Present**

**Cloud architect, for fortune 500 companies like Apple, Broadcom, BOA for cloud/HMI DevOps with testing, deployment.**

* Optimizer for ML Data pipeline for kubeflow on aws(eks), GCP, azure, for text processing with NLTK on commoncrawl.
* Vcenter-based Data Center migration, re-construction, upgrading & integration to Hybrid Cloud aws, GCP, azure, especially with vCloud Director 9.7.
* GeoPy Development for most popular geocoding web services, from OpenStreetMap Nominatim, ESRI ArcGIS, Google Geocoding API (V3), Baidu Maps, Bing Maps API.
* Aws Connect solution and live customer continuous speech recognition ML on KubeFlow with jupyter notebook.
* PKI tuner for NVidia-GPU ML data-pipeline in tools: python “profile” module, spark 20X upbeating, pytorch, tensorflow, pyspark, scipy, numpy, matplotlib, panda, statsmodels, and scikit-learn, messaging on kafka.
* Synced KubeML data to Heroku Postgres database, manipulate data with GraphQL and store learning unit files to
* Amazon S3 buckets, visualized in ELK, optimized for multiple security group performance.
* Legacy artifact repo CI/CD integration with K8s/Helm charts, Private Docker Registry, Jfrog Artifactory, Nexus, SonarQube, Azure Blob storage.
* POC with k8s with scala-driven CI/CD Orchestra, gained HA, extendability, job parallelism for big-data projects.
* NATS-kafka integration with writing Jenkinsfile with groovy for for setting up pipelines, as well as Jenkins GUI coding onto underlying pipelines among multi-continent messaging
* Cloud automation with Chef, Ansible, CloudFormation, Openstack Heat on CentOs with DevOps toolchains of Terraform, helm-chat, k8s yaml, swarm yaml, dockerfile & docker artifacts.
* CentOs security auto-tightening script in python & golang.
* Optimizer With gcc/gdb/gprof for C, C++; C#, xUnit, Visual Studio, PyQt/Python , Trolltech QT/Qtopia over Cygwin.
* GPU solution Accelerator for Microsoft Azure with NVIDIA hw with KPI boosting for C++ & Java API, scala, where build automation in gradle and maven.
* Generator for Graph Database with NoSQL: learning knowledge via pyspark writing analytics to MONGODB integrating MEAN-stack(mongo,elasticsearch, angular.js, node.js).

**Apple INC, Cupertino, CA March 2019 – Sept 2019**

**Pipeline Automation Architect**

* GCP, 3rd party and oem video partner integration solution with KPI tuning on multi-region redundancy, cost reduction analysis, LBS based Disaster Recovery in GCP
* Energy optimization algorithms for wavelet-based video codecs on power-aware processors Arm Cortex families.
* Line Echo Bot: Line chatbot implementation using various Python web frame-works including django), flask among multi-continent messaging over distributed gitea (by J-plugins integration with kafka, st2), in Apple radar fixed 2 p1, 2 p2, and a lot of top priority hard issues.
* With golang writing adapter, generating Jenkinsfile pipeline on the fly, Creating a data streaming base ML system.
* DNS driven server-fleet Solution Improving bandwidth, UX and Intelligence of HMI between Jenkins GUI and Jenkinsapi in python work space, disaster recovery and annealing, roll-back, roll-out for PLM data-streaming, AR, solr,podcast and distributed networking.
* Log analytics for Web behavior and Pipeline for legacy analytics with ELK(ElasticSearch, Logstash, Kibana) and improved migration onto Kafka, spark.ml inside pyspark for integration, QA automation.
* Pipeline: Architected and built an end-to-end ML pipeline including a flask application and deployed the solution in fleet of in-house MacOS servers
* Exploited HBase Coprocessor feature for large scale social media analytics.
* Minute to minute using k8s/helm chart incubator for modifying values.yaml in customization.
* Python development using jenkinsapi library for automation for Jenkins, SME for resolving oem-partner pipeline and SSO time-out issues by smart reconnection python class implemented.

**Sharpool Consulting, Santa Clara, CA Nov 2017 – Feb 2019**

**Aws/EKS microservice architect in Multiple projects with CI/CD, Machine Learning in Crypto Labs**

* Worked on full stack development of a django application for biking groups & route, optimization and monitoring of alarms for safety and heat-map.
* Developed a flask app for text preprocessing, hyperparameter tuning, and visualization for topic models.
* Stable Chart for Jenkins 0.26 on K8S/Helm Optimization & modification into tool-chain Ecosystem on GCP.
* Helm stable/atlantis 1.0 – terraform for teams, for customization into DevOps builder.
* Multiple Target hw optimization using tensorflow XLA, supports JIT compilation on x86-64 and NVIDIA GPUs; and AOT compilation for x86-64 and ARM.
* EQBot, With PyTorch, Caffe, Tensorflow, Torch, OpenCV do 8 expressions base EQ idiom & sentence machine learning, first body language reading robot, using LSTM and RNN.
* Employed the AWS suite to deploy a flask app powered by an XGboost model to predict a user
* MLFlow tuning with python profile module on: Tensorflow, scikit-learn, scipy, numpy, CaffeOnSpark, Spark Mllib
* Implemented ansible automation scripts for to deploy Supply chain SaaS VMs, using docker images, and create private blockchain networks
* Kubectl automation in GKE/openshift for smart cluster with docker private registry and rancher 2.10/nginx/htpasswd 3-in-1 using omgwtf ssl certificates building hybrid cloud.
* GPU/FPGA Accelerators improving transactions per second.

**CA Technologies, Santa Clara, CA Mar 2015 - Oct 2017**

**Cloud Automation Architect, SaaS DevOps for data center & App Store serving fortune 500 banks, Pioneering and finalizing Results**

* GCP Cloud Transaction Automation via search driven Machine Learning on Container-as-service (CAAS) Lead, laying ground for the distributed, Hybrid Cloud Framework of whole SaaS DevOps of CA Technologies.
* Wrote playbooks during routine maintenance -- which take hosts in and out of proxy rotation, dns, connection outage.
* Setting up team GPU/FPGA Docker CI & CD SaaS, realize DevOps methodology using Docker-based jenkins, or Atlassian Bamboo as well as RT github webhook; with subscription service of CircleCI, Travis, TeamCity, codeShip or qubeship.io, acted as chief architect, designer and principal implementer.
* Azure Messaging which Designed & implemented an azure service bus messaging application runtime cluster management algorithm to balance and distribute workload between nodes based on application availability and current capacity using node election patterns, and azure service bus messaging distribution.
* Cloud Package Management installer (helm chart, rpm, deb, pkg, slp, apk, tgz) for packaging towards repo, artifacts, with SonarQube, Jfrog, nexus repositories.
* TOSCA blueprint to PodSpec feeding Kublets on live trinity (file, Http endpoint and server). Mapping [[1]](#footnote-2)in-houses SaaS abstraction into kubernetes Hierarchy in pods, minions, kuberlets, selectors, replication controllers, name space.
* TOSCA universal cloud-blueprint interpreter/compiler in python3.0 with targeting option using aws api, Azure cmdlets api for both public and hybrid cloud, and pyrax, PyvMomi with NLP, AI & mapping kdb.
* Integrate a blockchain benchmarking tool, BlockPerf, With C++, Golang, Shell, Node.js, Python, got TDD BlockPerf for testing private blockchain platforms, supporting Hyperledger fabric, Ethereum and Parity
* Designed a consensus mechanism for handling transactions coming to the blockchain with

**Samsung Electronics INC, MSCA, San Jose. CA Oct 2013 – Feb 2015**

**Android Multimedia Cloud Consultant, Cloud Innovation Labs, Principal leading over 10 POC Projects**:

* Analysis and PKI improvement of MPEG-1, MPEG-2, Media Codec Performance on Samsung Galaxy phone.
* Wrote Analyzer for video Codec Buffer and Delay under Time-varying Channel for Samsung TV and Galaxy Tablet.
* Video messaging Data handling with ActiveMQ and Storm, Hadoop, HBase and Pig
* Twitter Sentiment Analysis with Apache Spark ( pyspark ), an python open source API.
* Designed and implemented a framework with an Android app and flask backend used for QR code based people search on travel alumni.
* Jenkins Large-scale automation with Gradle builds over hadoop cloud.
* Computer vision, bluetooth beacons, skeleton tracking, environmental sensing, location-based services (LBS) of mobile and social networks, include indoor/outdoor map
* Mobile Porting Protocol with GAN/UMA integration: bind9 DNS, dhcp3.0, free-Radius 1.2, YeaPhone, SIP Proxy; FreeRadius as the wifi authentication gateway of UPNP/DLNA capability for sharing collaboration office devices with smartphone over video, LBS.

**Cisco Systems, INC, Milpitas. CA Mar 2013 - Sept 2013**

**Mobile Networking and Multimedia Architect, Enterprise Networking Labs**

* Envision, design and prototype then implement products with a variety of 6 groups for below tasks, and hand-on:
* Implemented real-time MPEG-2 transport multiplexer for newly created video CODEC and AAC audio.
* Device drivers, DLLs, and libraries for parallel DSP codec board.
* Successfully developed and prototyped a system (based on Hadoop, HBase and written in Java+scala) that can bring together data from multiple databases
* Semantic segmentation streaming on projects that use FPGA to generate IP/UDP/Sflow header for, for sampled packets and then send it to collectors.
* Analytics for geo-LBS over HDFS Performance comparison : with PVFS on micro-benchmarks and macro-benchmarks running on a 4,000 core Internet services cluster

**Nvidia Inc, Santa Clara, CA Nov 2012-Feb 2013**

**Crypto Mining and ML Performance SME Consultant**

* Bootstrap, Streamline, project and then mentor and drive projects within budget and deadlines:
* Implemented for WebEx the ISO MPEG-4 and ITU-T H.263 standards codec on SHARP's DDMP (Data Driven Media
* Processor), and Matsushita Electronics, then Cortex's family processors for better power performance.
* Created an API with Pig for a customizable recommendation engine application to JavaScript, Python, simplify optimization techniques for users; built sample recommender systems.
* Cisco Wifi hotspot WebGui with Django on physical hardware including switch and firewall console.
* Built for automatically protecting social media account-manager fighting fraud, using Node.js django-graph-auth.
* Chose AWS’s DynamoDB, and implemented the right partition and sort keys to build the RubyScript app later on.
* Integrated Cassandra as a distributed persistent metadata store.
* Designed a hybrid file system for game repositories, based on FUSE which uses local SSD and amazon S3 servers for storage. It supports caching, segment level deduplication and snapshots.

**Analogix Semiconductor Inc, Sunnyvale, CA Feb 2012 -  Oct 2012**

**Software App Architect in US Headquarter**

* Implemented the ITU-T video codec standards H.261 and H.263 in C and x86/MMX Assembly language.
* Headmaster innovations and initiatives, finalize the white papers, specs, drive collaboration to success – Representative to OEM partners like Google, Intel, Apple, AMD, LG, Samsung, Asus as Unified SlimPort Architect
* Cloud building up with Puppet script coding for incremental-development open-source buildbot, hudson, setting up daily best practice for 120 people team.
* Ruby version manager for Redmine project management setup, Integrating with CPAN perl to write plug-ins into bugzilla. Linux distros in the form of (rpm, deb, tgz, apt-yum).

**Samsung Electronics, San Jose, CA Aug 2010 – Jan 2012**

**Consultant for POC Group, Convergence Lab in US**

* Creative Prototyper & team builder for below projects:
* Setup product-line of Galaxy S(I,II): tablet and phone, working with OEM & biz partners using llvm-g++, scatchbox, sb2; Example-driven PLM for team: show 1st example, scrum by webex & skype mentoring over team's gdb bt stacks, respond and resolve in-house requests as SME, key transferring to right peers to scale productivity:
* Using Pattern Recognition in Real-time LBS over RFID IioT.
* Did Hadoop & Hbase porting & optimization on arm processors enabling tablet-based computing cloud.
* The AR-subtitle over-stream frame-buffer experiments with openGL/OpenCV environment inside Qt/Meego running on GalaxyS. POC is based on PyQt, the python version of Qt.
* Implementer for intelligent mobile robotics, including sensor & actuator modeling and calibration, basic control, probabilistic localization, task and motion planning, and other behavior architectures.

**Oracle INC, Redwood Shores, CA Oct 2009 – July 2010**

**Consultant for Mobile IDM project**

* Cross-media & mobile distributive-db Principal acrossing IBM, HP, NT servers on ZFS-FUSE.
* Worked as a core developer on the electronic trading platform using Java and Cassandra
* Solutions on demand: C-based high-performance Linux GFS terabyte filesystems, Solaris & AIX, ZoL (ZFS on Linux).
* Cloud & Event Cloud architecture Analysis, Design with Fusion-One as wire-format, with django satchmo, postgreSQL then django-mongodb, hbase with pig – restful python db API.

**Synaptics INC, Santa Clara, CA Jan 2009 - Sept 2009**

**Consultant in Cross-OS Driver Project**

* Next Generation Secured Gesture UI Architect and Designer work with China, India, USA:
* On-device OpenSSO mobile implementation with sha-256 based certificate, with Java PKI from J2EE.
* Design & write in Linux Kernel Driver for Multi-Touch touch-pad on d-bus Over Limo & WM6.
* Kernel 2.6 bootup optimization using menuconfig working with boot loader grub.

**Motorola Inc, Sunnyvale, CA Jan 2008 – Jan 2009**

**OMA DM Principal**

* Initiate, Implement Teamwork Projects integrating LAMP-based pinax/django across Oracle.
* PLM for wifi/3g OTA POS for Enterprise Mobile Payment Adapter on sms, XMPP, OpenSSL with Cross-platform porting over WM, Android, Symbian, LiMo under environment of eclipse CDT, appliance debugging with gdb-server;
* Hadoop/hbase/ActiveMQ/JMS from J2EE, with additional add-on of: 2.0) PKI integration; 2.1) templates of wml/xhtml/ce-html; 2.2) BDB for mobile social media (e.g., Mobile Facebook, twitter)apps – 2.3) with SCTS1.2, libwbxml, lib expat, OpenID, and all kind of FUMO, SCOMO enabler.

**Innopath Inc, Sunnyvale, CA Oct 2007 - Jan 2008**

**Cross-platform Principal**

* Carrier Platform Performance Optimizer and Infrastructure Builder, orchestrate 7 groups
* Both J2EE & J2ME SATSA security package & JC RMI for phone, coding with closed integration among Webkit Engine, Kernel Framebuffer, DirectFB on Linux System/J2ME with internal service-protocols.
* For Carrier packaging middle-ware for OEM feature set w. CMake/CPack meta-build.

**Engineering Center in XDS Inc, Cupertino, CA Feb 2006 – Sept 2007**

**Senior Tech. Staff**

* Responsible for graphics & streaming designing, coding and debugging in cross-platform development as part of Transaction-Enabled Service with Desktop Virtualization Product of XDS INC using AAA as facilities:
* Mobile Porting Protocol with GAN/UMA integration: bind9 DNS, dhcp3.0, free-Radius 1.2, YeaPhone, SIP Proxy; FreeRadius as the wifi authentication gateway.

**Tibco Software SDK Group in Tibco Software Inc, CA Feb 2005 - Feb 2006**

**Senior Engineer for SDK**

* Consulting world's largest Telecoms, fortune 100 companies like Walmart, FedEx, BOA, etc with EDA/EAI, OpenGL, RFID Co and Financial Institutes etc. Tool-chain: Apache, MySQL, Tomcat, J2EE, J2SE.
* Architecting and writing their application based on Tibco Middleware SDK on Message-Driven Architecture, RV, and EMS/JMS based on J2ME/J2EE and C++.
* Linux Kernel Programming and Debugging with TIBCO SDK.

**MediaG3, San Jose, CA 2003 - 2005**

**Architect & Senior Software Engineer**

**Anasift, San Jose, CA 2001 - 2003**

**Senior Software Engineer**

**Foliage Software Systems, Campbell, CA 2000**

**Senior Software Engineer**

**Education:**

* 1984-1987 : Master Degree With Honor of "PKU Excellent Graduate Thesis": Computer Simulation of Context-Interaction for dispersion on Carrier Surface with model in Cellular Automata, Joint Program by Institute Of Molecular Engineering and Science and Society Research Center, Peking University (“Harvard of China”).
* 1980-1984: B.A. major in Search and Retrieval System in Library Automation in Dept. of Information Management, Peking University. Graduate Design: All-field Chinese-Text Retrieval System (which is now still in use with UNIMARC & LC-MARC format) in Peking University Library, the 3rd biggest Library in China.

**Awards:**

* My Invention of Semantic Search -- Chinese context-error Checking Software was enlisted in the National Torch Project, by the Ministry of Science and Technology of China, 1999, with a Certificate. This is awarded only to the top 70-100 most important high-tech products (of which software is 1%-3% percent) annually in China.

1. [↑](#footnote-ref-2)