Frank Sun

Curriculum Vitae

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Summary

Golang	**Strong Golang Developing skills**, *Deliver full featured, high-performance golang application*, application design; concurrency with goroutines/context/sync/atomic/pool; communications using tcp/udp/http/gRpc; configuration, commandline solution; logging framework; error propagation.
Cloud Architecture	**Microservice, AWS**, *Design and build cloud-based, distributed, high available microservice system*, Familiar with cloud computing concept, API design, integration of API gateway, Message Queue, Service Discovery, MySQL/NoSQL, Distributed locks, necessary knowledge of monitoring with Prometheus/Grafana, AWS; knowlege of kubernetes.
Software Design	**Solid Object Oriented, data structure skills**, Familiar with common data structure, design patterns, clean architecture method; Familiar with Agile method, Solid math backgroud.
Quality Code	**Clean code, TDD, High test coverage**, *Test with Testify and GoConvey framework, TDD, gomock*, deliver clean, scalable, maintainable, well tested code by TDD.
Devops, security	**Linux, CI/CD, PKI**, *Performance analysis using Flamegraph, pprof; Comfortable working on Linux, Deploy and operate 40+ Linux nodes on cloud in prod(ansible); Load testing; Practical knowledge of PKI system*.
Others	**Curiosity, Positive Personality**, *continuous learner, team player, knowledge sharing, tech blog writer, runner*.

Employment History

2018-Now	**Golang Developer at Macquarie Group**, *Infra Team*, Golang, Sydney. Automation of Macquarie's infra for other internal tech teams
2016–2018	**Senior Backend Developer in Udesk**, Golang, Beijing. Leading service desk SaaS platform of China, develop and deploy core systems: call center, faq system Chief programmer, code reviewer in team
2015–2016	**Backend Developer in CrowdConga**, Node.js, Sydney. Start-up e-commerce website
2014–2015	**Backend Engineer in Alibaba Group**, *Map Service Center*, Linux, C++, Beijing. Leading map service provider in China, develop transit service for Alibaba and Apple Inc. in China region
2011–2012	**Software Developer in Alcatel-Lucent Shanghai Bell Co., Ltd**, *Internship*, Windows, C++, Beijing, Shanghai.
2008–2010	**Software Developer in Beida Jade Bird Group**, Windows, C++, Beijing. Top 2 fire alarm systems provider of China, develop PC system configuration tool

Project Experience

2019–2019 **Macquarie infra automation**, *Golang*, AWS, Building microservice to automate host allocation of VMWare.
- Co-design and technical solution research and decision in microservice system: service split, communication framework, high-availability, deployment, queuing, etc
- Implement core functions and cross cutting features like logging, error propagation, metric framework
- Knowledge sharing and advocates of tracing, error propagation, monitoring, concurrency, nosql inside microservice architecture in team

2018–2019 **Macquarie private cloud automation service and tool**, *Golang*, Linux, Automate operation task on Macquarie's Private Cloud.
- Working with cloud architect to design database breakglass solution for DBA team. Implement it myself
- Working with stakeholders and other teams(Asset, database, security) to verify, test and deliver breakglass solution
- Features: Password retrieving(SSH), SetUID, verify request(HTTPS), signing/verify routes(PKI), SSH library, terminal library, session management
- Code refactoring of automation service: log tracing; refactor problematic sync handlers; refactor coupled components, add more unit testing.
- Docker security hardening of automation service according to CIS docker security benchmark
- Maintain and implement new features

2018–2019 **Udesk's Call Center System**, *Golang*, SaaS, 25,000 sip phones registered, over 300k calls made daily.
- Co-designed and built distributed microservice system using Golang, core components: API gateway, Service Discovery, CTI, ACD, ADS, Resource, Agent, Record, TTS, netdata as service monitor;
- Built CTI's sip phones manager module: managing all sip phones connected; establish tcp connection with freeswitch; sent http msg to subscriber if state changed;
- ADS service's forecast system: implemented msg based, time series indicators collecting system, to forecast future calls based on last 30 minutes' call data; 3500+ lines, no bugs found since testing
- ADS service's multitask system with priority: implemented by using redis as priority request queue and resource allocator, subscriber used go channels to receive resource token to proceed call dialing action
- Refactored CTI, ACD services: Implemented FSM pattern to represented all states change of calls life cycle and agents; Added go-hystrix, context to projects to tolerate latency and fault of system
- Solved critical problems in production environment: broken connection pool, unstable freeswitch, ACD deadlock, slow msg push service, sudden increase of cpu load, etc.
- Deployed 30+ nodes in production environment by writing playbooks of Ansible, necessary linux system administration work, developed load tests scipts used by wrk tool
- Tech stack: http/tcp/gRpc, openresty/nginx, redis, nsq, mysql, etcd, freeswitch, netdata, wrk, docker

2016–2018	**Udesk's Faq Robot System**, *Golang*, SaaS, over 300 business used, 700k queries daily.

- Built request routing system: route requests to live nodes by config; node liveness managed by etcd; node manager service, subscriber of etcd, generating valid route info used by openresty automatically; provided easy to use APIs to support manually config like add/delete nodes, migrate tenants, show node status;
- Developed knowledge points module: information retrieval subsystem; msg/event based; implemented simple DSL parser by go-ANTLR; regular expression generation and match;
- Tech stack: openresty, redis, etcd, nsq, mysql, bm25, antlr

2015–2016	**Crowdconga website**, *Node.js*, SaaS.

- Built dashboard, order and delivery, input hint and search subsystems; vehicle data generation(csv to json);
- Tech stack: Node.js/meteor, postgresql, jquery, python

2014–2015	**Alibaba And Apple's Public Transit Service for China**, *C++, Python*, SaaS, Top 2 map service in China, DAU over 60 million.

- Code maintainer of bus service, train service, gateway service; major contributions: index compaction, gdf time format implementation, transit strategies; implement bus data offline cache building and distributing system;
- Log analyze using hadoop/python: provided key statistics such as PV, frequent requested locations, latency report, etc
- Transit service representative of outsourcing team for Apple's transit service; code maintainer, refactor transit service code
- Features: http, select/epoll, routing algorithms, cache design, high performance

2008–2009	**Fire Alarm System Configuration Tool**, *C++*, Windows.

15,000+ lines code, Features: MFC/win32, UART, ADO, UI ctrls, custom expression parse

Education

2011–2014	**Master in Computer Science and Technology**, *School of Computer Science, Beijing University of Posts and Telecommunications*.

28th of U.S.NEWS's Best Universities for Computer Science, scholarship for three years

2004–2008	**Bachelor in Electric Automation**, *School of Information Technology, Beijing Technology and Business University*.

GPA average HD, top 5% among 120 students, scholarship for three years

Awards & Accomplishments

2018.7	**Complete Stanford Machine Learning Online Course**.
2017-2018	**Excellent Employee of the Year in Udesk**.
2011-2014	**Three-time Annual Scholarship of BUPT**.
2004-2007	**Three-time Annual Scholarship of BTBU**.
2012-2013	**Complete 2012, 2013 Beijing International Marathon**.

Reference

Available upon request.