Huiming **Sun**

Software Engineer · Full Stack Developer

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Education

University of Illinois Urbana-Champaign *Cumulative GPA: **3.91** / 4.00*

Master of Computer Science *Aug. 2021 - Dec. 2022*

University of Missouri-Columbia *Cumulative GPA: **3.88** / 4.00*

B.S. in Computer Science *Aug. 2016 - May. 2019*

Work & Research Experience

Google Ads Planning *Google Irvine, CA*

Software Engineering Intern *Jul. 2022 - Sep. 2022*

- **Software Engineer of ACX(Ads Common Experience)**. ACX Web create shared front-end infrastructure that help Google teams build large-scale single-page web applications in the most productive way.
- Led the design and implementation of Angular Dart Server-Side-Rendering. Server-Side-Rendering is one of the important options that provide customers with a better web user experience by shortening the initial page load(IPL) time.
- Identified potential technical challenges from an early stage with spikes through cross-team communcation and iterate Angular Dart Server-Side-Rendering MVP by collecting significant requirements from stackholders in Agile workflows. Ensure project delivery with small-grained story and high-bandwidth context sharing.
- Implemented the Angular Dart Server-Side-Rendering prototype. The prototype leverages the existing Angular Dart Compiler, Angular AST Parser, Dart2JVM and Dart Analyzer infrastructure to provide Server-Side-Rendering capability through Kotlin code generation without embedding a heterogeneous VM in server side.
- Integrate the Angular Dart Server-Side-Rendering compile toolchain with the Blaze build system. It provides the Blaze build rule to support Server-Side-Rendering in JVM-based applications.
- Published design documentation for Angular Dart Server-Side-Rendering, indexing a series of Architectural Decision Records(ADR) on Angular Dart Server-Side-Rendering. Hosted a Knowledge-sharing presentation of the results with 5 teams includes ACX Server, ACX Framework & Tools, Google Ads Table & Component Infra, ACX Sharding and Dart Native Runtime.

Nvidia Colossus *Nvidia Santa Clara, CA*

Cloud Software Engineering Intern *Apr. 2022 - Jul. 2022*

- **Architect/Core contributor of IMX(Intelligent iMage eXchange)**. IMX is an implementation of Nvidia Image Build As A Service, currently used by **50+** developers across the infrastructure team, it provides a simple, standard, and consistent interface to access standard OS image deliver platform capabilities for Nvidia heterogeneous bare metal cloud OS image matrix build.
- Investigated internal requirements through domain-driven design thoroughly, and provided IMX solutions to solve the bottlenecks and pain points of the OS image matrix build. Aggregated multiple functions into standardized platform capabilities.
- Developed OS image build checkpoints for migratable contexts, reducing rebuild time by an average of **91%** and enhanced OS image build pipeline MTTR by **34%**.
- Implemented multi-stage OS image build, to enable OS image build on top of existing OS image instead of build from scratch, which speeds up OS family image matrix build by **25%**.
- Redesigned configuration layer for OS image builds to create reusable build configurations for a unified platform abstraction, which reduced redundant configurations by **86%**.
- Containerized build OS images using custom KVM-mounted concourse and rootless Podman, providing a stable, consistent, and reproducible environment for every OS image build. Reduced OS image build pipeline MTBF by **22%**.

Humana Digital Health and Analytics Data Platform *Humana Campbell, CA*

Software Engineer *June. 2019 - Aug. 2021*

- **Core contributor/Co-tech lead of Humana data platform**, which was used by **70+** developers across **5+** teams within the organization. Platform services are designed as self-service and cloud-native (Azure) and implemented in Golang and Python.
- Implemented Infra Provision Engine within an agile software development team in Data Platform. Went through the whole stages of data platform from scratch to relatively stable.
- Engineered reusable infrastructure component solution with a code generator that generates semantic-based type-safe kotlin infrastructure constructor from a terraform schema obtained by reflection from a given terraform-provider.
- Developed AzOps (A better CLI alternative of Azure DevOps services) and corresponding python library for automating the interaction between data platform and Azure DevOps. Support operations on Repo, Pipeline, Variable Groups… by extensible plug-in architecture.

- Created the VUtil Golang module, include file system, os config, environment, process processor and http requestor's fake implementation and interface, which indirectly increased the test coverage by **9%**.
- Designed Infra Template mechanism to decouple the release cycle of the Infra provision engine and the actual Infra set. Provided Infra template manager CLI to create, build, publish and dependency resolve Sub-Infra template for developer.
- Proposed architecture design record (ADR) to drive the detailed implementation of the hexagon architecture. Implement and maintain database adapters and microservices adapters.
- Led the establishment of standard operating procedures (SOPs) by stabilizing and automating continuous integration and delivery framework using Azure Devops and JFrog Artifactory.
- Boosted Domain-driven design for Data Platform through cross-team communication. Determined components context boundaries through interfaces and contracts, which promoted the process of domain model construction.
- Organized regular knowledge sharing sessions and mob programming sessions. Empower developers and downstream consumers to synchronize business and technical context.

Personal Project

Nameless Mist — *Urbana, IL*

Developer — *Feb. 2022*

- Nameless Mist is a chaos engineering framework that tests the resilience of distributed systems by injecting failures such as node crashes, bandwidth restrictions, dropped/corrupted packets, slow CPU, and memory contention, while simultaneously collecting and analyzing critical system metrics.

XFuzz — *Urbana, IL*

Developer — *Oct. 2021*

- XFuzz is a lightweight utility CLI tool for fuzzing arbitrary programs. It provides a simple and practical user interface to help developers perform fuzz testing of programs to find bugs from God.

Infra Block (Reusable Infrastructure Component Solution) — *Urbana, IL*

Developer — *Apr. 2021*

- A code generator that generates semantic-based type-safe kotlin infrastructure constructor from a terraform schema obtained by reflection from a given terraform-provider.

Dockerfile Probe (Dockerfile AST manipulator) — *Humana Campbell, CA*

Developer — *May. 2020*

- Cross-platform single static binary CLI utility that extracts structured metadata from AST of Dockerfile and do custom transformation based on passed-in golang template string.

Lumin (High Performance Chat Service) — *University of Missouri-Columbia*

Developer — *Feb. 2018*

- Chat Service that using custom chat application layer protocol, using Protocol Buffers to serializing custom chat protocol payload, using Netty as NIO client server framework. With optional TLS and heartbeat support.

Skills

Program Language	**Golang**, **Python**, **Java**, **Kotlin**, **TypeScript**, **Rust**, C/C++, Dart, Haskell, Swift, Elixir, Racket
Back-End	Golang Gin, Flask, Spring Boot, Laravel, Vert.x, Node.js, Kafka, MongoDB, PostgreSQL
Front-End	React, Angular, Angular Dart, Redux, ECMAScript, HTML5, CSS3, Sass, D3.js, Storybook
DevOps	**Azure**, **Ansible**, **OpenStack**, **Terraform**, **Azure Devops**, **Concourse**, **Docker**, **Podman**, **Packer**, Kubernetes, Istio, Vault, OpenTelemetry, Grafana, Ceph, AWS, Consul, GitHub Action
Language	Native in Chinese Mandarin, Fluent English
Miscellaneous	Jira, Git, Bash, JFrog, VSCode, Vim, Wireshark, Intellij, LaTeX, Spark, SQL, QEMU