

Fengkai Liu

Bytedance Senior Infra Engineer

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Summary

Currently in the Bytedance Flutter Infra team, responsible for the Compile direction and the Oryx self-rendering engine direction. Pay attention to Compile/VM related technical fields, and be keen to invest in open source technology. Maintaining some high-star projects open source on github, and also Committer/Contributors for Dart, Flutter, multiple programming languages, and VM projects.

Work Experience

Bytedance Flutter Infra

China-BeiJing

Senior Software Engineer

2018/07/-present(2.89 years)

- **Compile:** Responsible for sorting out the work direction and vision of the Flutter/Dart Compile side of the group, and making corresponding technical plans daily. Design and develop the external compilation link framework design of TransformerTemplate Pipeline in Dart VM, and complete Dart Hook (compile-time AOP scheme), Coverage full instrumentation coverage statistics, and Conditional Import cross-version syntax and Pub multi-homed compatibility scheme. Various functions have been used in the company's 20+ businesses online. Promoting the Hook program into open source, also submitted a number of valuable optimization and repair PR to Dart VM.
- **Rendering Framework:** Dominates the technical work, framework design and main function realization of Oryx, the underlying rendering framework of the mini program co-built by the Flutter side and the mini program group. Oryx realizes the ability to parse DSL, code block interpreter evaluation, build multi-layer rendering nodes, process CSS styles, and finally be able to render small programs under the basic modification of Flutter's capabilities.
- **Dynamic:** Participate deeply in the development of Dart VM dynamic solution. It is the first implementation of dynamic solution that can execute any Dart program. It also realizes some package size optimizations for the solution. At the same time, a Dart program reflection solution that can also be used under AOT is implemented in Dart VM.
- **AppFramework:** Responsible for designing and planning multiple Flutter-side application frameworks, including the realization of the bridge-side capabilities of the reusable web on the flutter/native side, and participating in the development of the cross-host application framework Vessel, which has been launched in the company's many businesses.

Dashbase Backend Infra (Cisco Acquired)

China-HangZhou

Intern Software Engineer

2017/12-2018/06/(0.5 years)

Based on the high-efficiency Log Index/Search underlying engine of Dashbase, participated in the development of elasticsearch-proxy and prometheus-proxy, providing SQL-like grammar and aggregation and parsing queries for business parties, and providing convenience for toB business parties. Bring value.

AliBaba Infra Platform

China-HangZhou

Intern Software Engineer

2017/07-2017/12/(0.5 years)

- The middle-office system needs to rely on expression judgment for business routing and distribution to obtain requests, so the system needs a high-performance expression calculation engine. During the internship, I independently completed the design and implementation of the EL-Engine engine, and independently realized the compilation, interpretation and runtime compilation and optimization of Expression-level languages.
- The expression calculation of EL-Engine has a growth rate of 20% compared to the original open source project.
- The expression parsing engine plays a more important role in the system. The frequency of visits to large-scale businesses in China and Taiwan is relatively high, and the daily PV can reach hundreds of millions.

Personal Project

YAPyPy

77 stars

<https://github.com/Xythony/YAPyPy>

2019

The Python virtual machine implemented using modern Python technology is compatible with CPython and has convenient syntax expansion.

JustWeEngine

760 star

<https://github.com/lfkdsksk/JustWeEngine>

2015 年

Developed for 15 years based on the Canvas package, a native game rendering framework, which has a certain degree of community usage and influence.

HobbyScript

<https://github.com/lfkdsk/HobbyScript>

The self-implemented programming language has two backends: JVM interpreter execution and LLVM.

73 star

2017

Just-Evaluator

<https://github.com/lfkdsk/Just-Evaluator>

JVM platform, high-performance, lightweight expression calculation engine, while providing two operating modes of interpretation and compilation.

GitHub

2017

SICP-Magical-Book

<https://github.com/lfkdsk/SICP-Magical-Book>

For the in-depth introduction of the connotation of SICP and the re-interpretation of modern technology, there are 2k subscriptions in the zhihu column.

148 star

2017

Education

Dalian University of Technology

Bachelor of Software Engineering

· Major (software engineering direction)

China Dalian

2014 - 2018

Speech and sharing

Part of the articles

SICP's Magic

In-depth guidance and reinterpretation of modern technology for the connotation of SICP

Column Article

2017 to present

Dart Hook usage and core principles

Introduced part of the architecture of Dart Compiler, how to use Hook and the core principles of its development

ByteDance Technology Official
Account

2021 year

Technical presentation

Rich text rendering scheme with multiple input sources

ByteDance's first Flutter technology salon

- How to design a rich text rendering component that supports multiple input sources and separates front and back ends, including: Parsec-like parse combinator toolchain migration, The front and back ends of the interpretation layer and the rendering layer are separated, supporting multiple types of data source input, Strong extensibility, grammar support, and flexible customization of component generation.

China BeiJing

2019/09

Deeply explore the Dart Compiler architecture

Byte Beat Flutter Public Course

- How is Dart Compiler implemented in the overall structure? How do we dig deep into the entire compilation system?
- Introduce the progress of the work at this stage, how to do full instrumentation support? Jsonify generated during automatic compilation? How to achieve Dart multi-version compatibility?

China BeiJing

2020/04

Thanks

Thank you for taking the time to read my resume, and I look forward to having the opportunity to work with you.