图数据库解谜

搞清楚什么是图数据库，它能做什么，为什么它做的好？如何学用大厂们都选择了的 Nebula Graph？

古思为

DEVELOPER ADVOCATE @ vesoft

墨天轮 线上直播

Dec. 9th, 2021

古思为

- Nebula Graph 开发者布道师
- 程序员
- 开源信徒

wey-gu

wey_gu

siwei.io

Overview

- 什么是图？图数据库?
- 为什么需要图数据库?
- 到底图数据库可以做什么?
- 为什么大厂都在用的新一代开源图数据库：Nebula Graph

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图数据库简介

什么是图？ 什么是图数据库？ 为什么我们需要一个专门的数据库？

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什么是图?

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"以图结构、图语义来用点、边、属性来查询、表示存储数据的数据库

什么是图数据库

wikipedia.org/wiki/graph_database

了解更多关于 什么是图数据库

为什么需要图数据库?

传统数据库

图数据库

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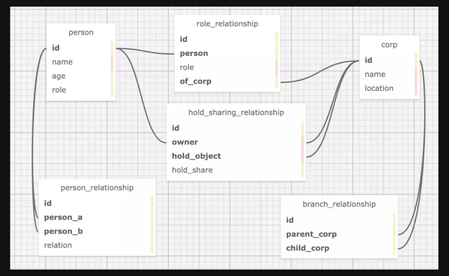
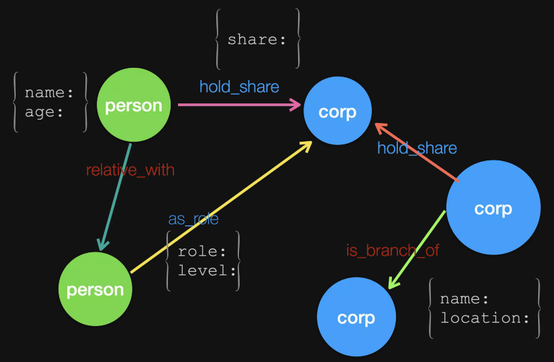
为什么需要图数据库?

传统数据库

图模型的结构



图数据库



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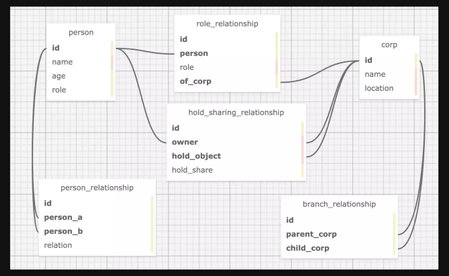

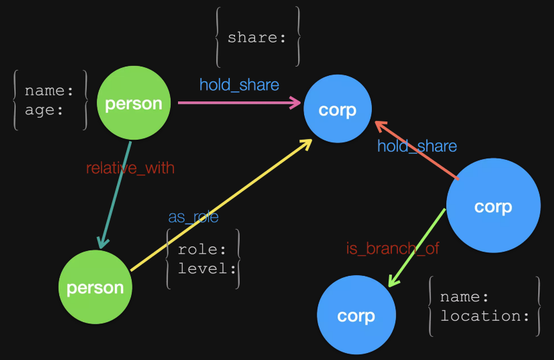

图语义的查询

```
SELECT a.id, a.name, c.name
FROM player a
JOIN serve b ON a.id=b.player_id
JOIN team c ON c.id=b.team_id
WHERE c.name IN (SELECT c.name
FROM player a
JOIN serve b ON a.id=b.player_id
JOIN team c ON c.id=b.team_id
WHERE a.name = 'Tim Duncan')
```

```
GO FROM 100 OVER serve YIELD serve._dst AS Team | \
GO FROM $-.Team OVER serve REVERSELY YIELD $$.player.name;
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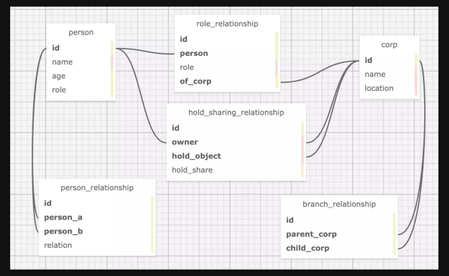

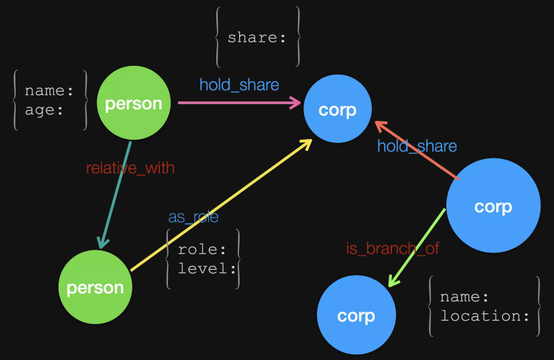

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性能

	主要应用场景	2-hop 延时 (~2.5K)	3-hop 延时 (~110K)	4-hop 延时 (~600K)
图数据库	关系遍历	0.01 秒	0.168 秒	1.36 秒
SQL数据库	信息检索	0.016 秒	30 秒	1544 秒

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Nebula Graph!

如何发音：['nebjələ]， 它有哪些特点?

Nebula Graph 介绍

一个可靠的分布式、线性扩容、性能高效的图数据库

世界上唯一能够容纳千亿顶点和万亿条边，并提供毫秒级查询延时的图数据库解决方案

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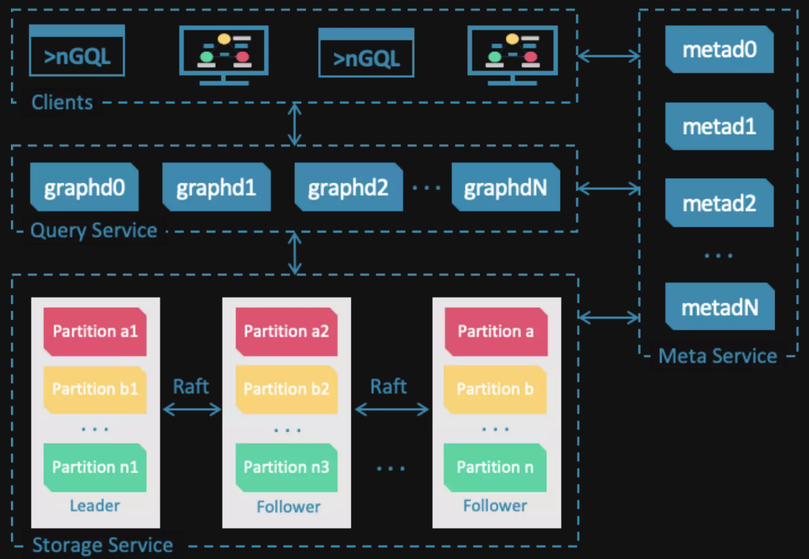

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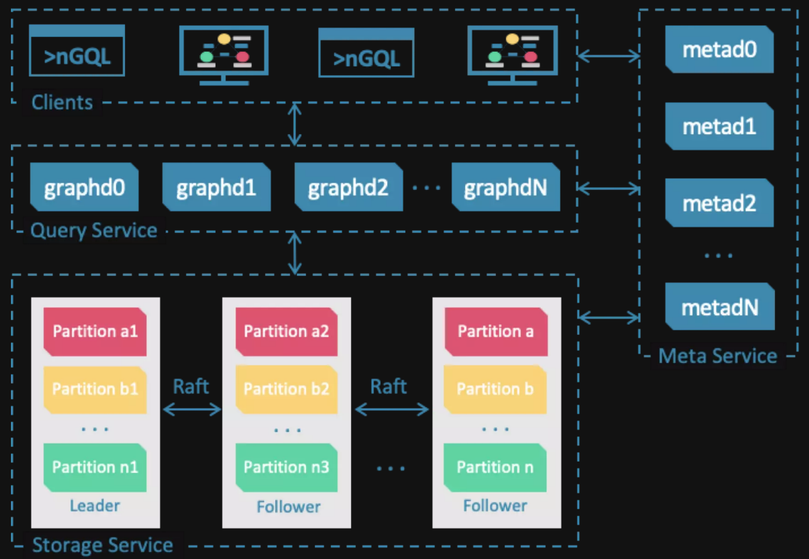

京东数科 · 美团 · 有赞 · 小红书 · WiFi万能钥匙 · Tencent 腾讯 · WeBank 微众银行 · vivo · 企查查 · 快手 · 知乎 · 360数科 · SUNING 苏宁科技 · BOSS直聘 · 网易 · Seeyii 视野金服 · 思知 · 半云科技 · 同盾科技 · 携程金融 · akulaku · 合合信息 · 中国移动 · oppo · 微信 · 众安保险 · 网易游戏 · Soul · ziroom自如 · HUAWEI

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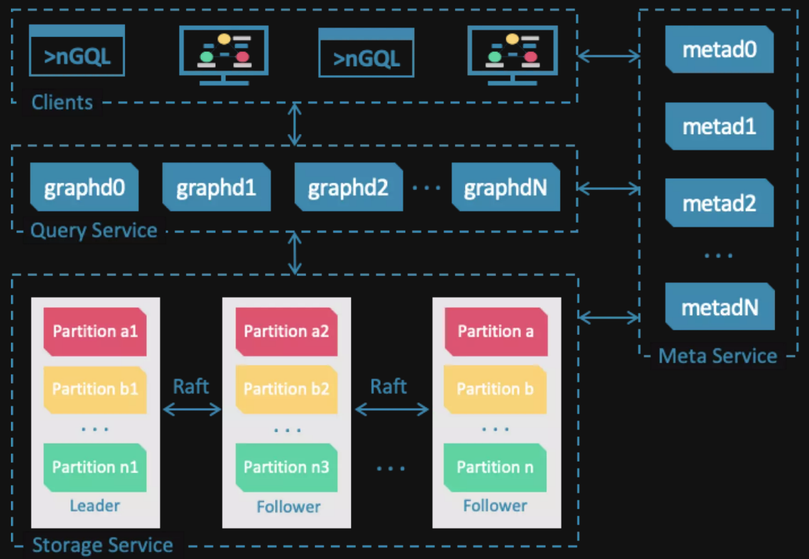

了解更多 >>>

文档：Nebula 架构

官网：用户案例

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关于漫威电影宇宙（MCU）与姚明的故事

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图数据库的应用场景

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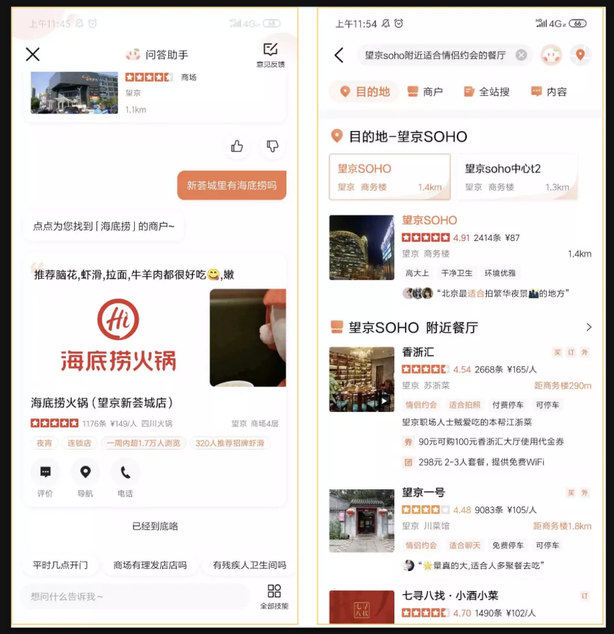

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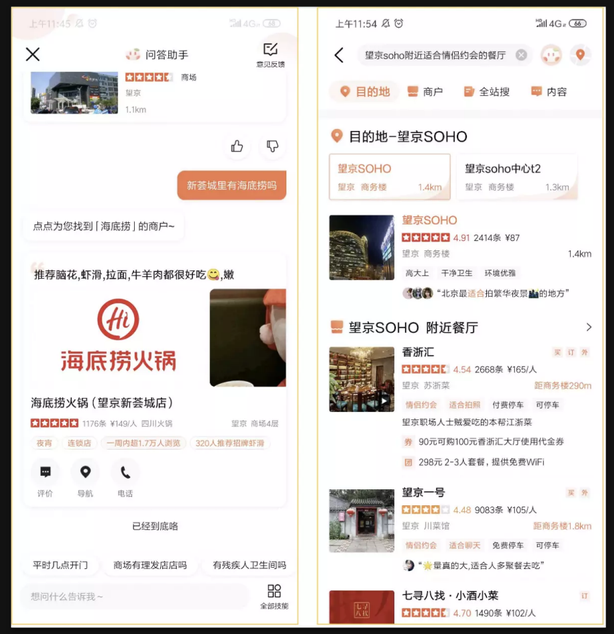

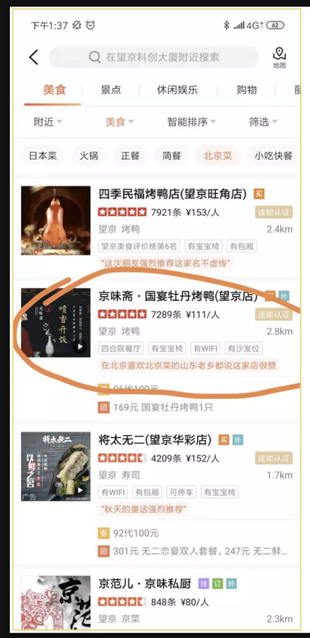

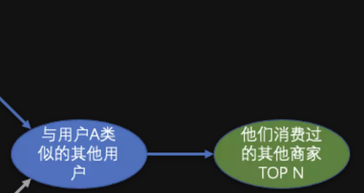

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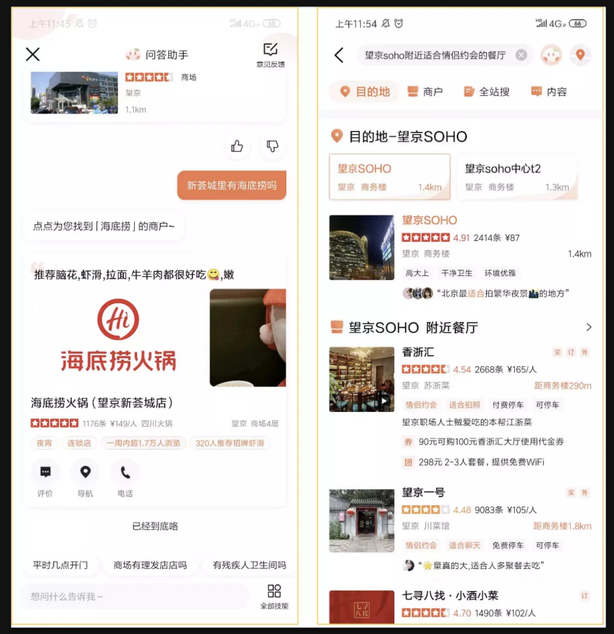

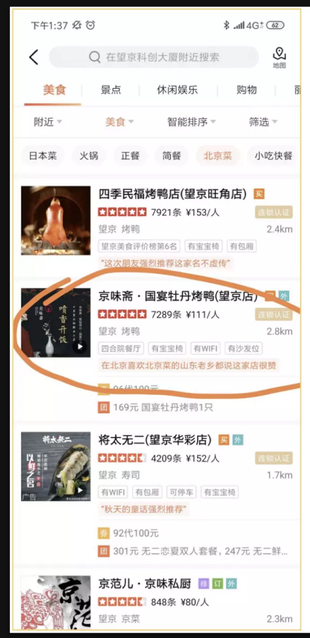

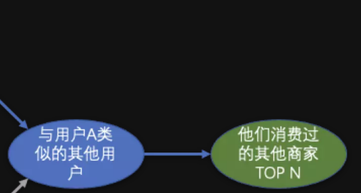

tech.meituan.com/2021/04/01/nebula-graph-practice-in-meituan.html

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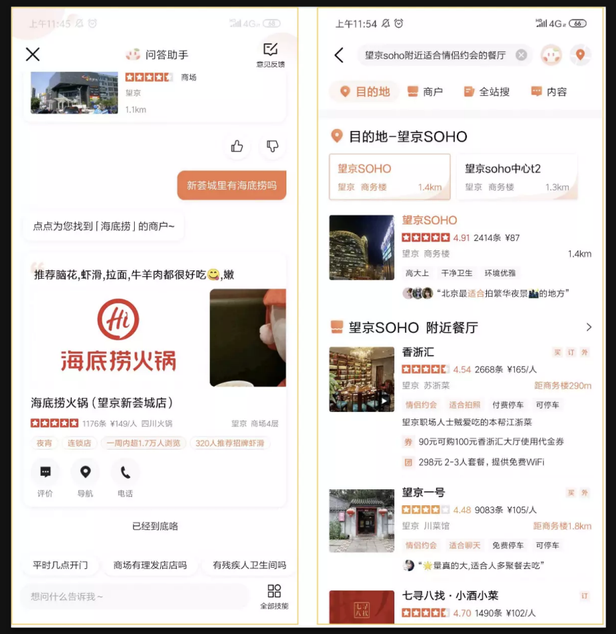

典型场景

社交网络(meta)	风险控制	公共安全	知识图谱	机器学习
生化制药	物联网	区块链	数据血缘	智能运维

tech.meituan.com/2021/04/01/nebula-graph-practice-in-meituan.html

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Siwi

Siwi (/ˈsɪwi/)，一个知识图谱驱动的智能语音助手

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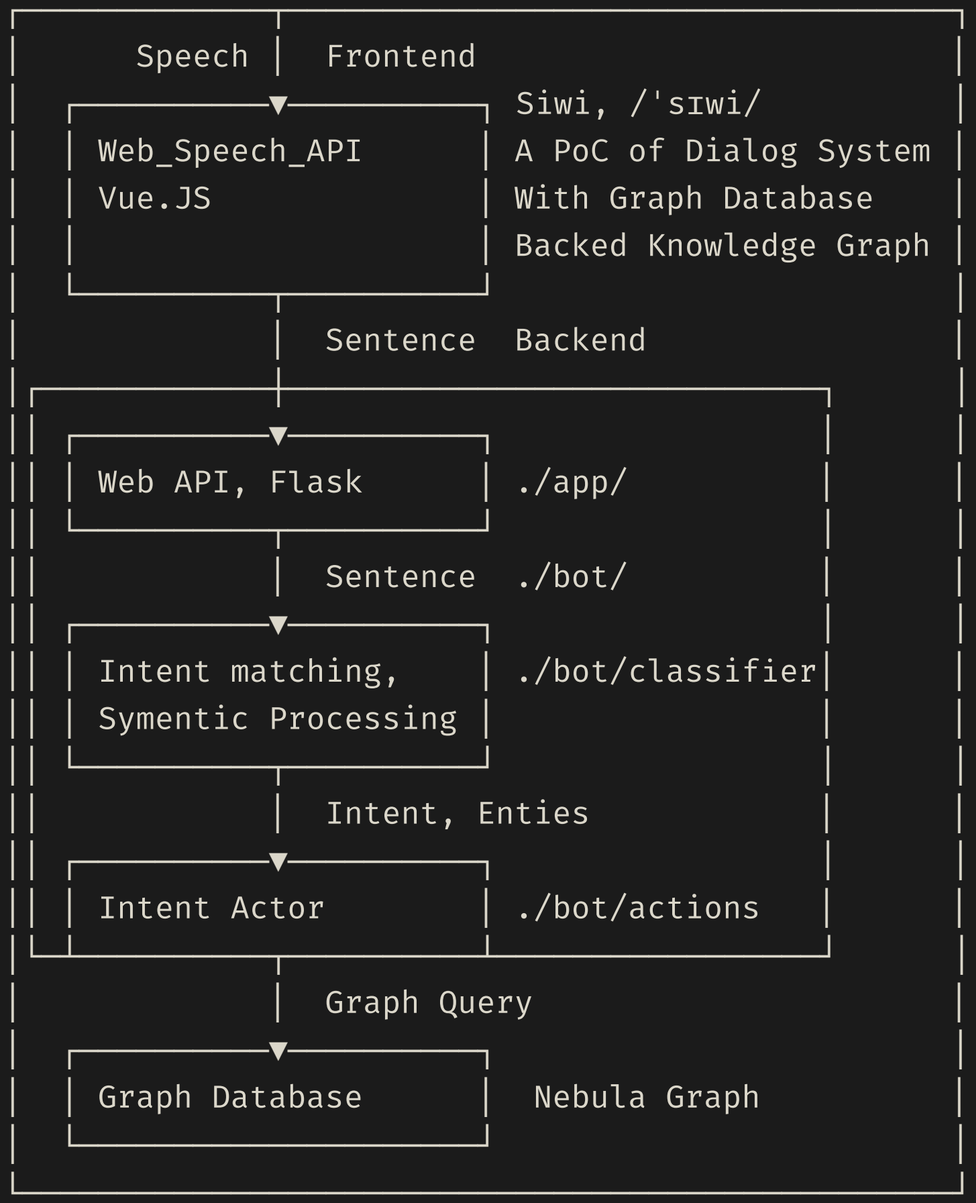
Arch



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wey-gu/**nebula-siwi**

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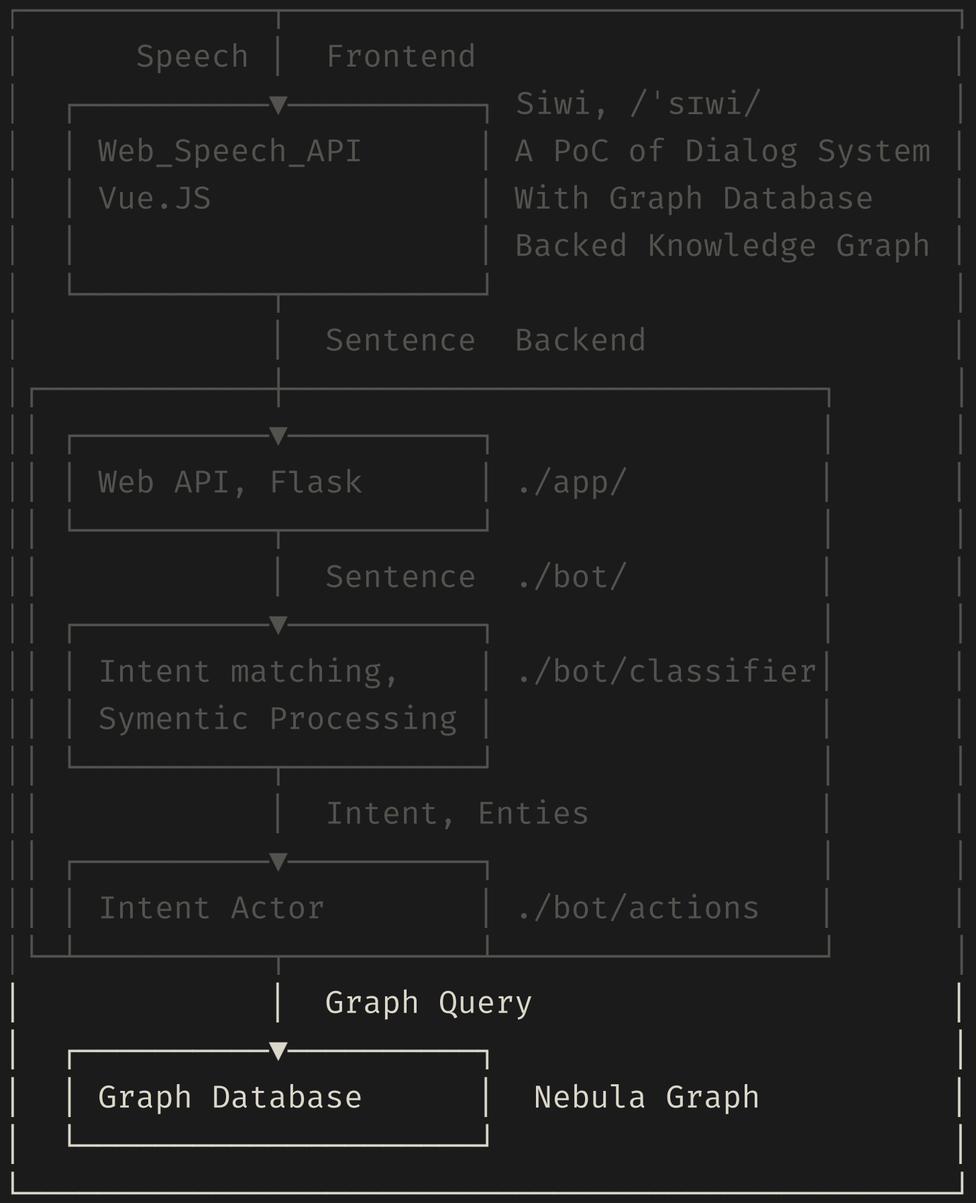

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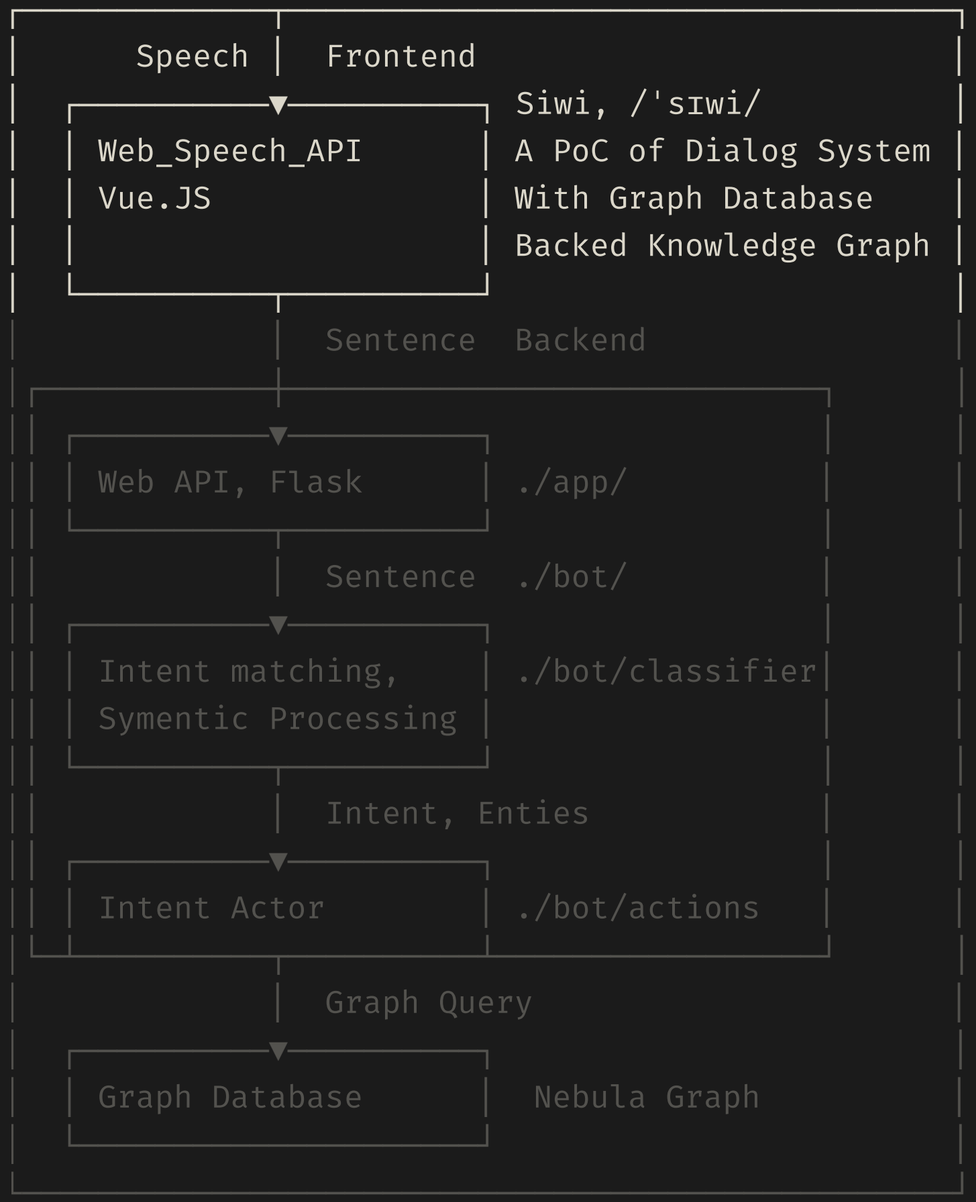

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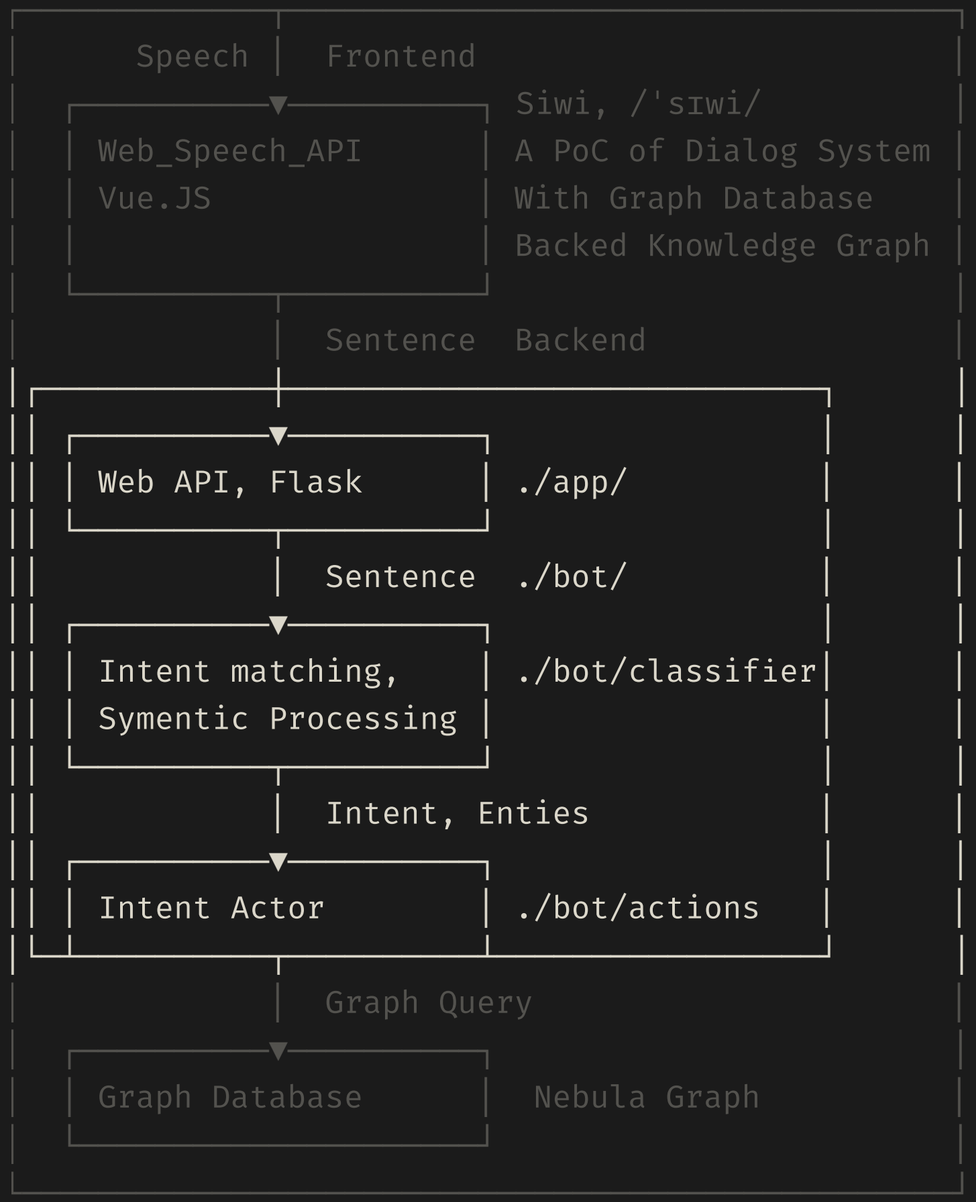

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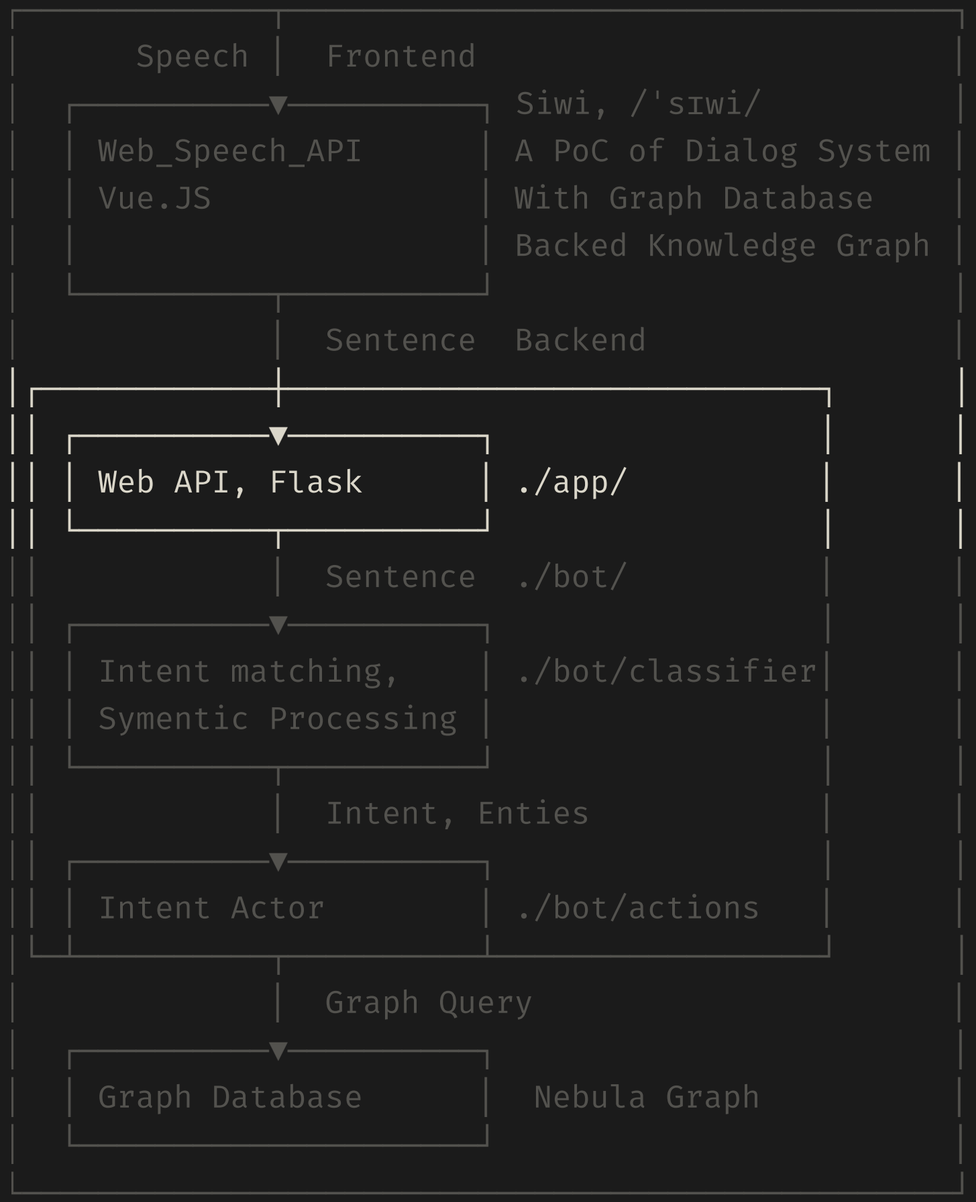

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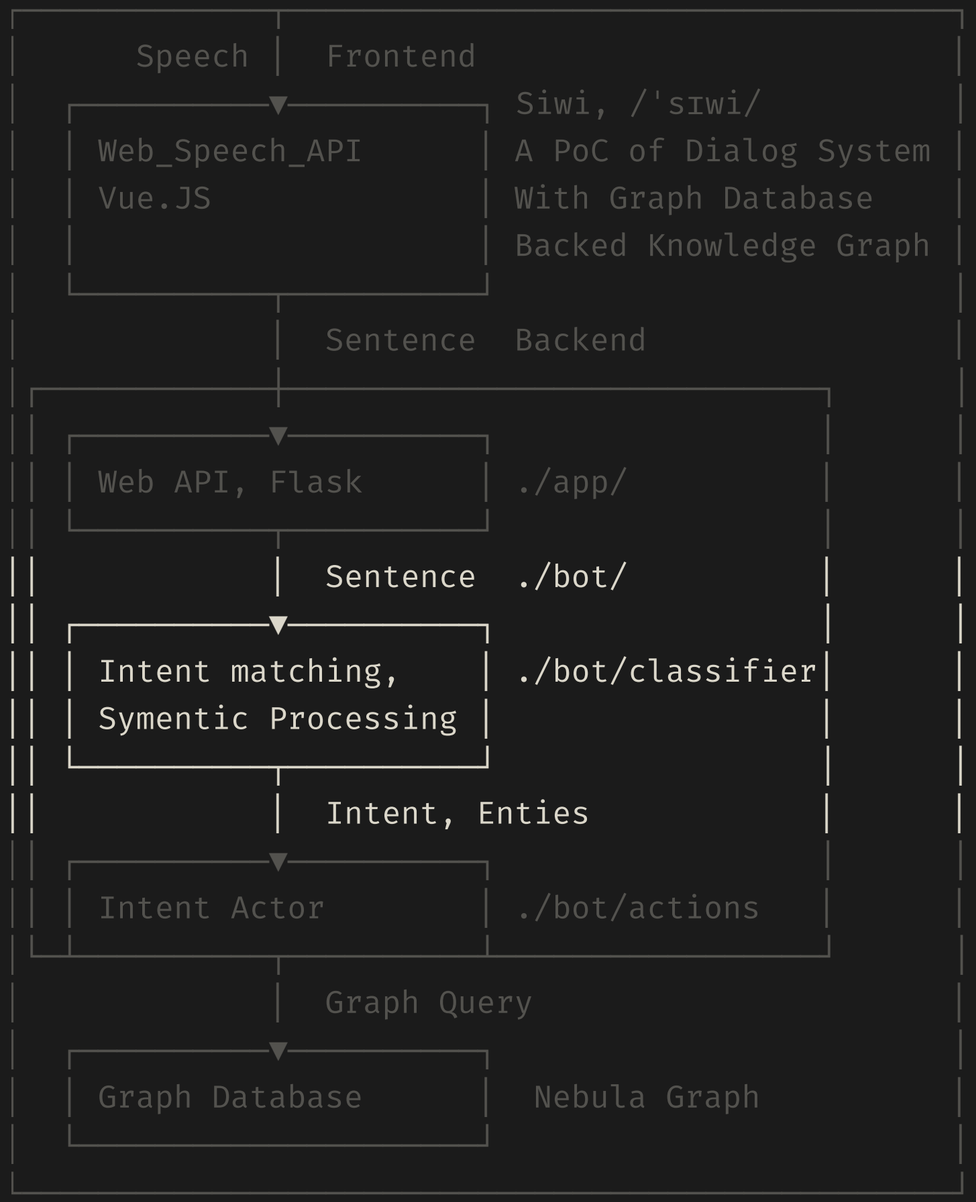

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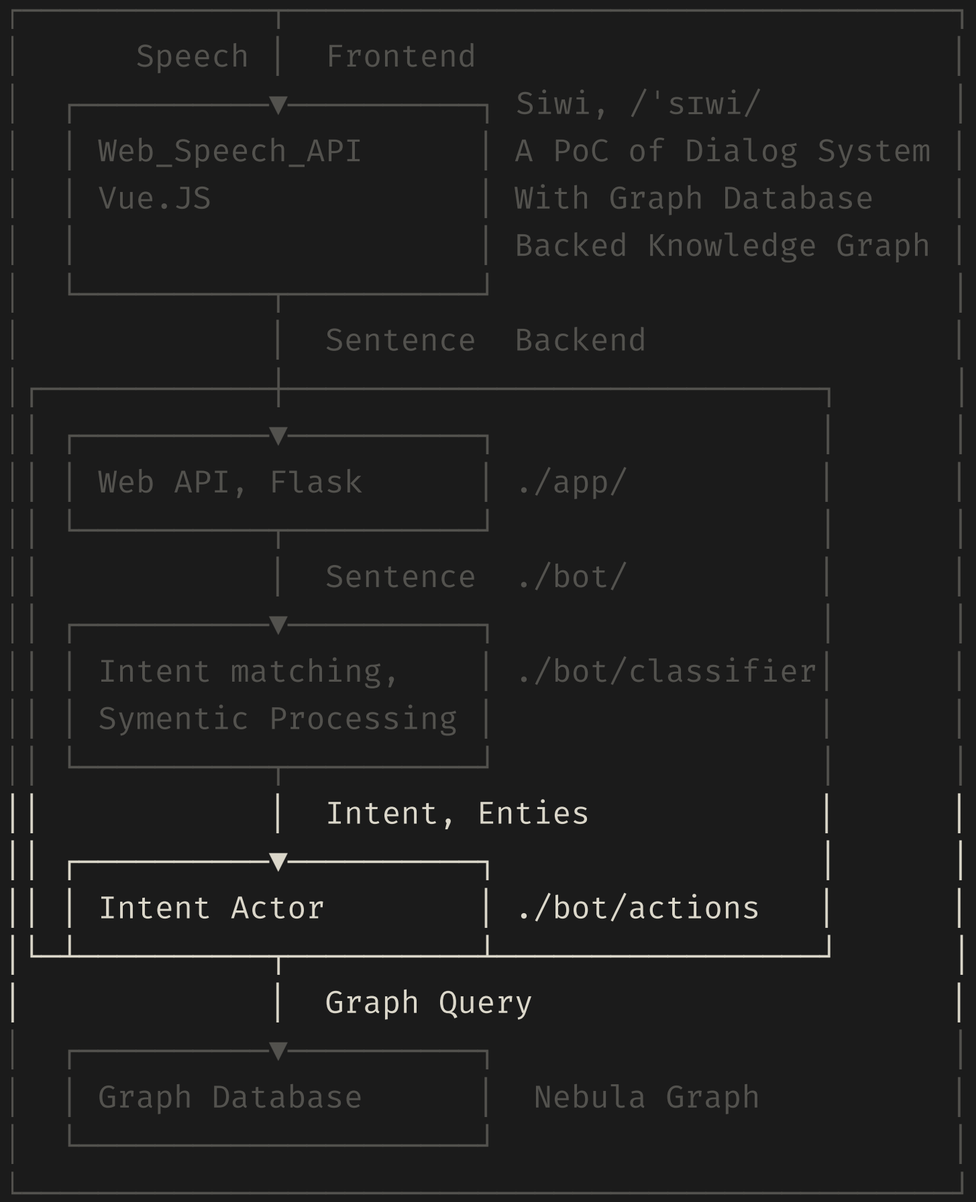

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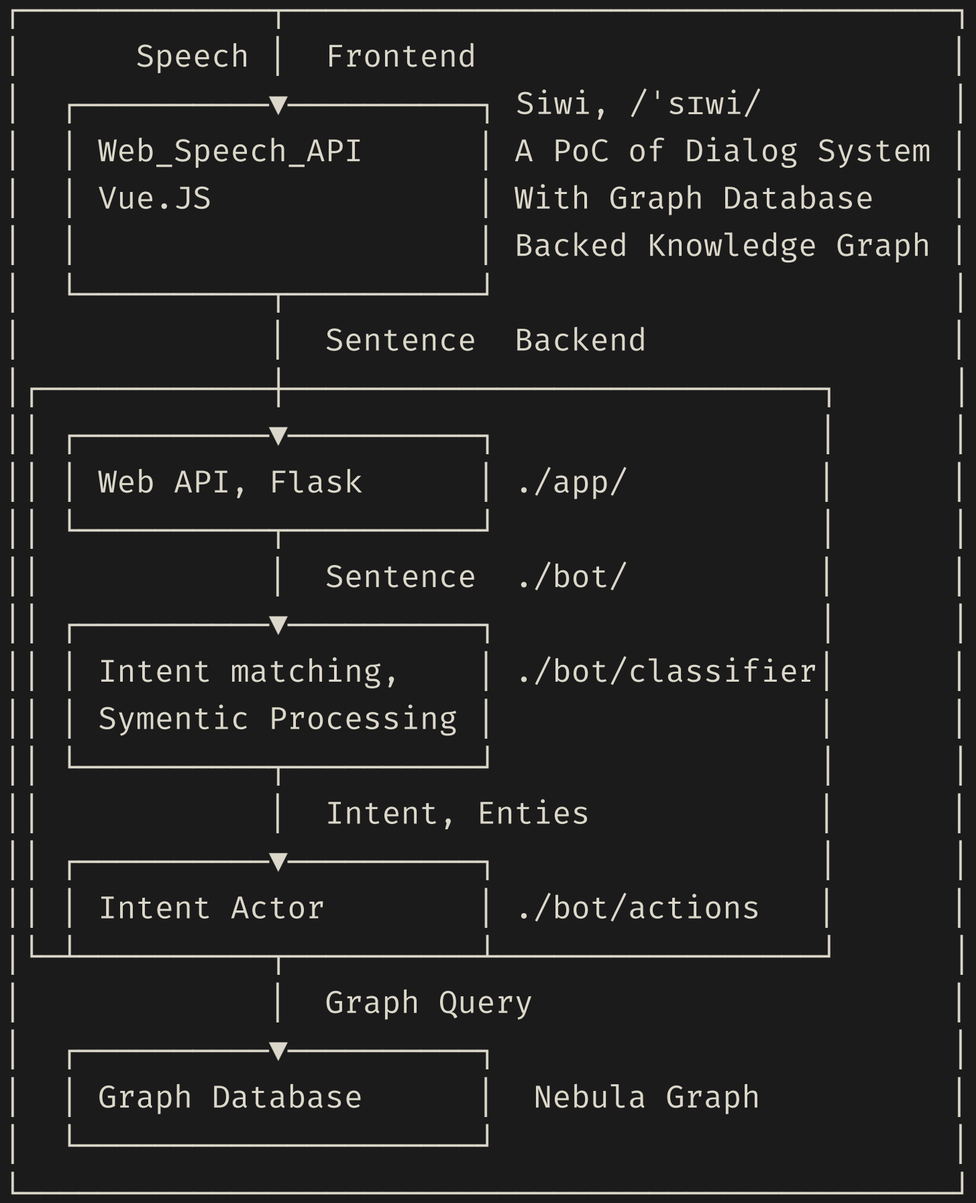

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wey-gu/**nebula-siwi**

一个接地气的小 Demo

Siwi 智能语音助手

Corp-Rel-Search

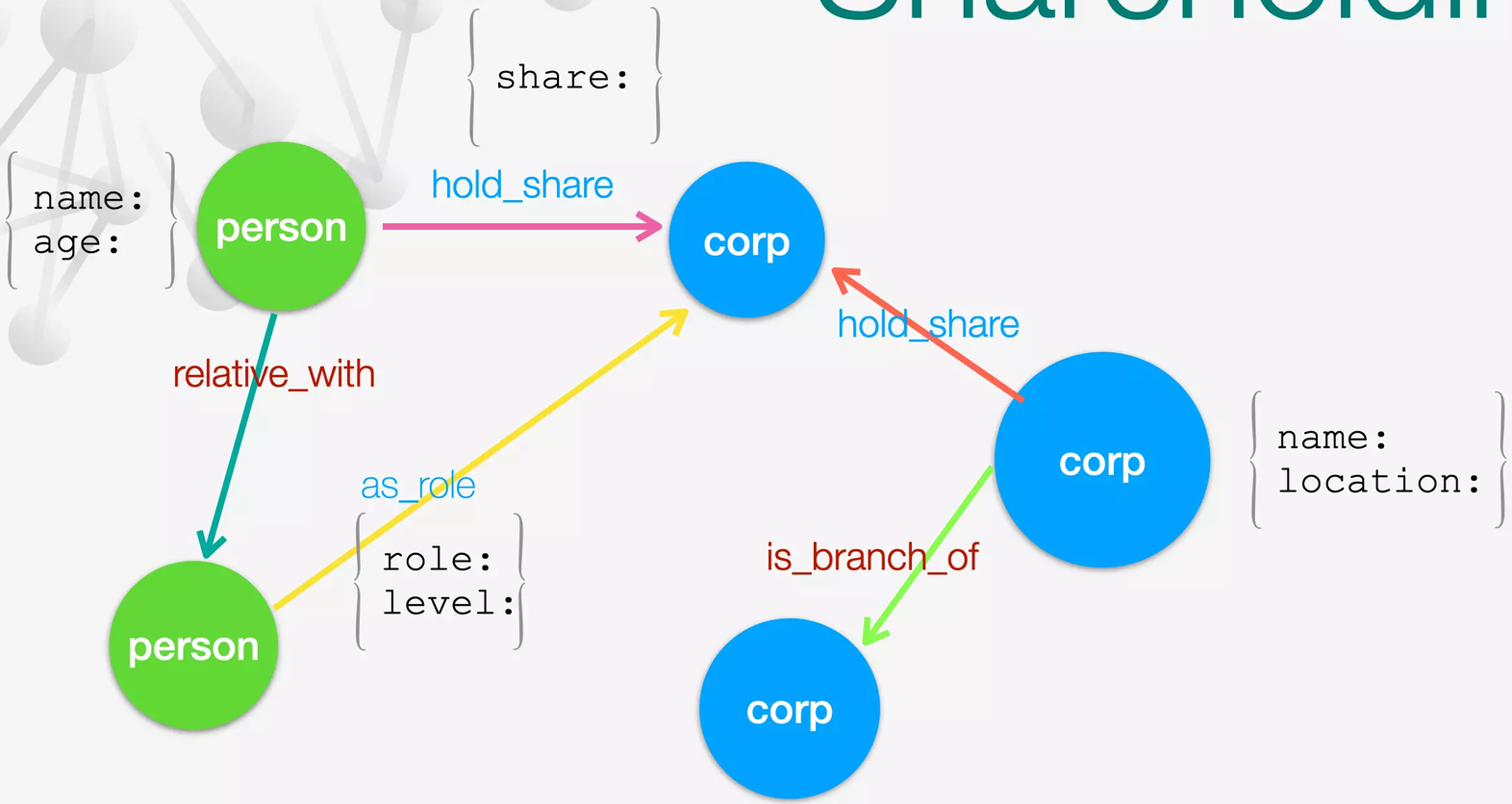
一个企业股权关系分析系统

墨天轮

https://nebula-graph.io

Shareholding

NebulaGraph



wey-gu/**nebula-shareholding-example**

https://nebula-graph.io

Shareholding

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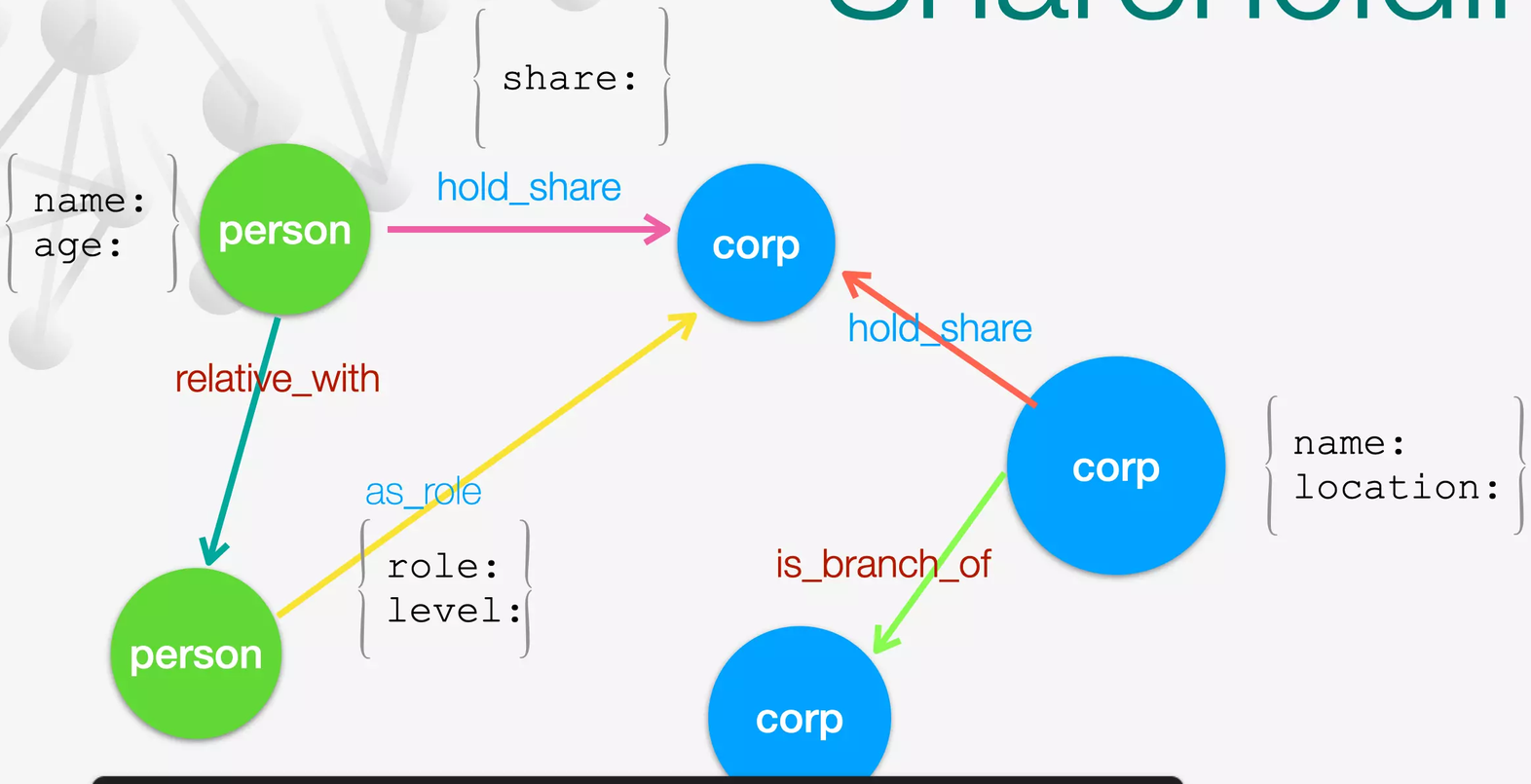


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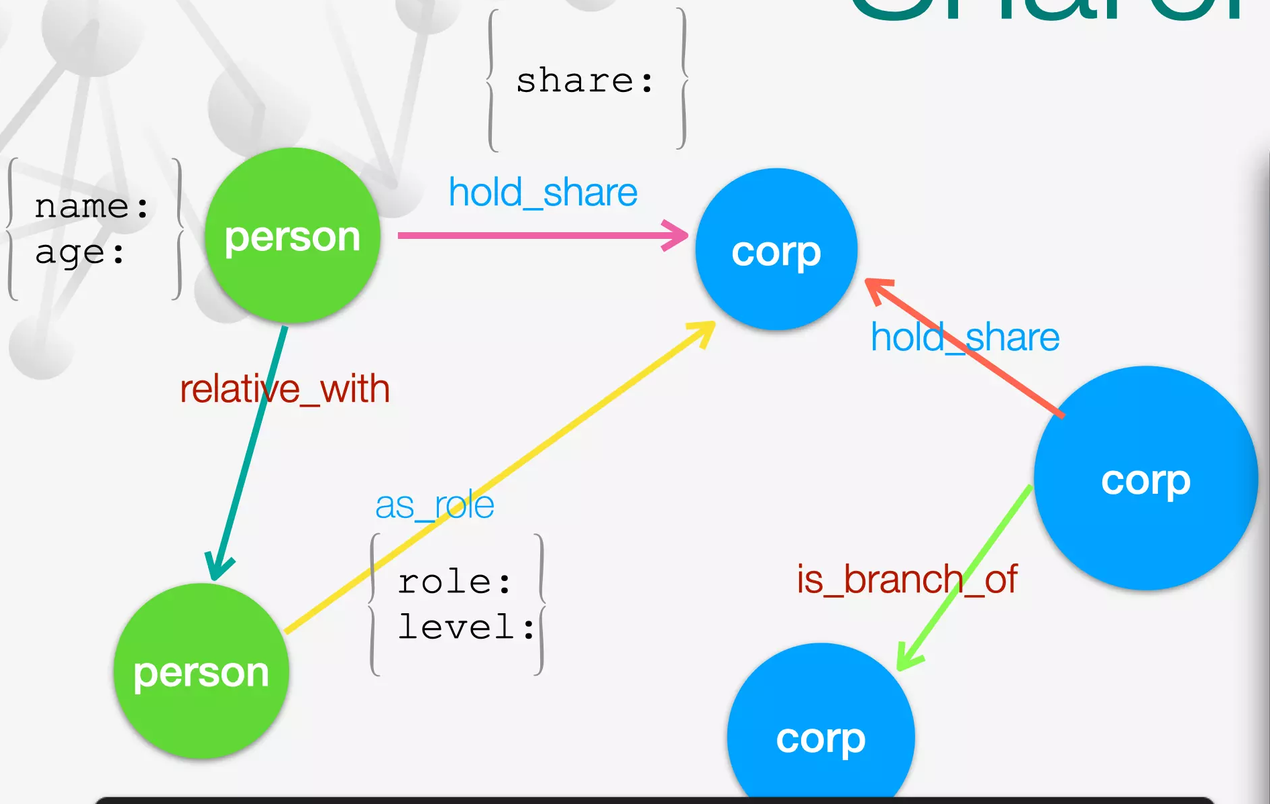

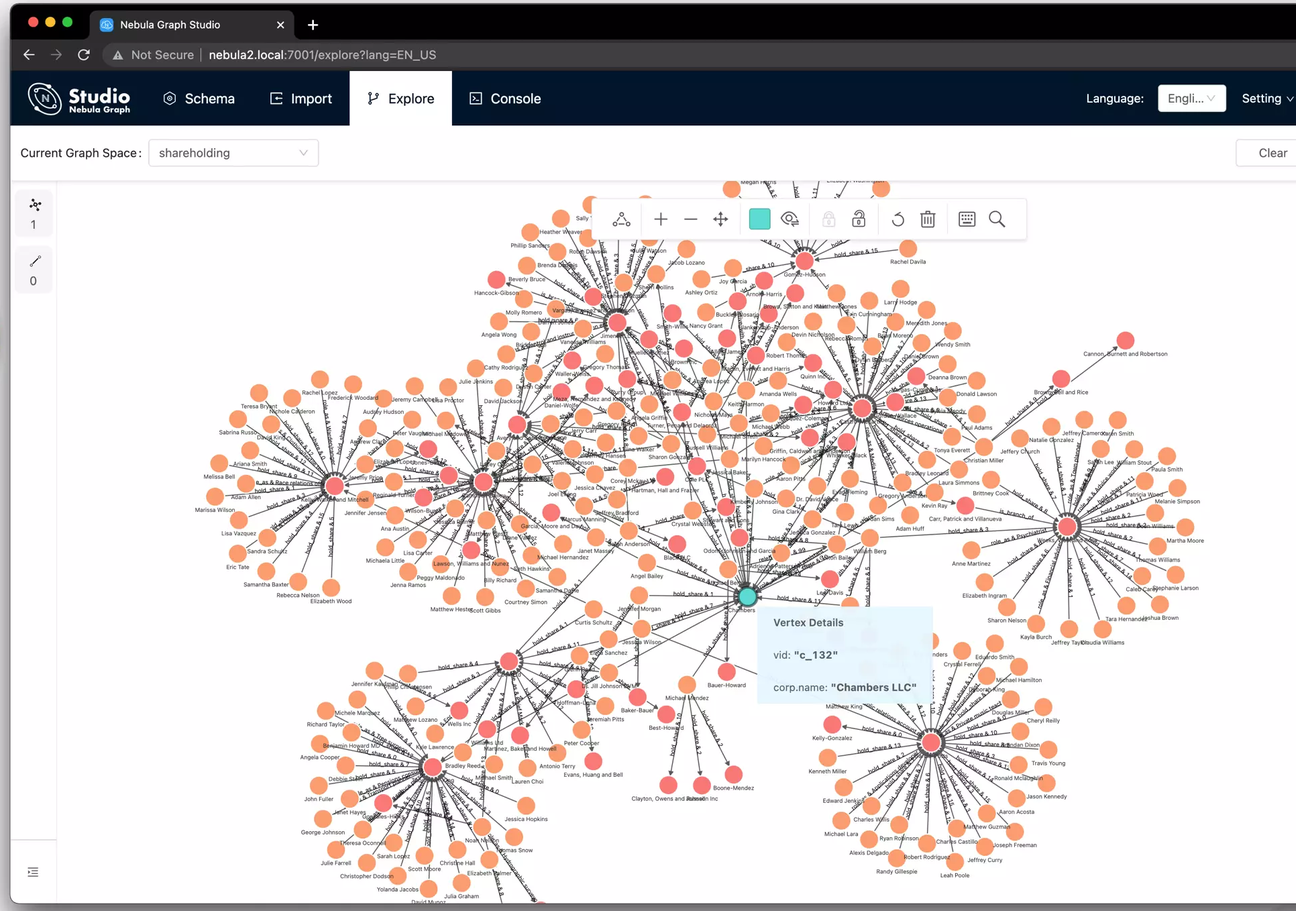


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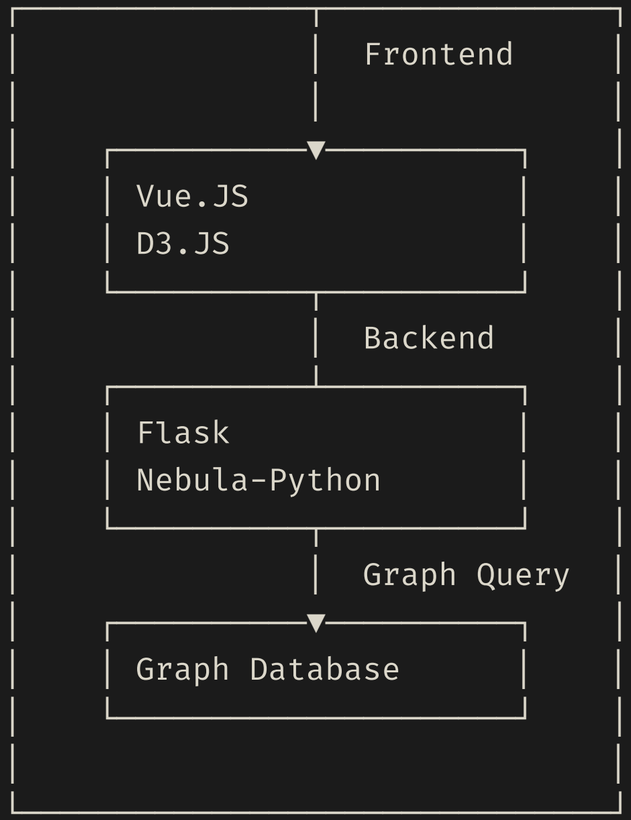
架构 Corp-Rel-Search



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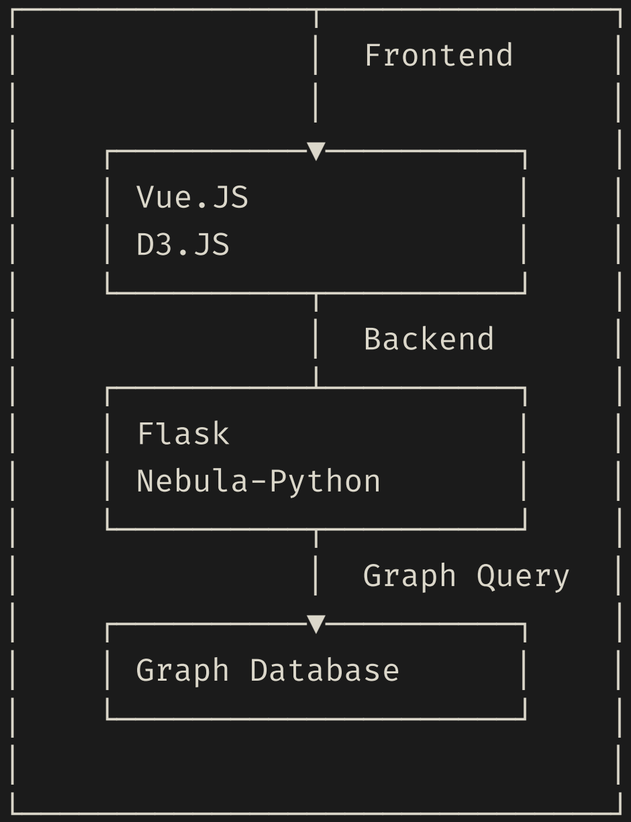

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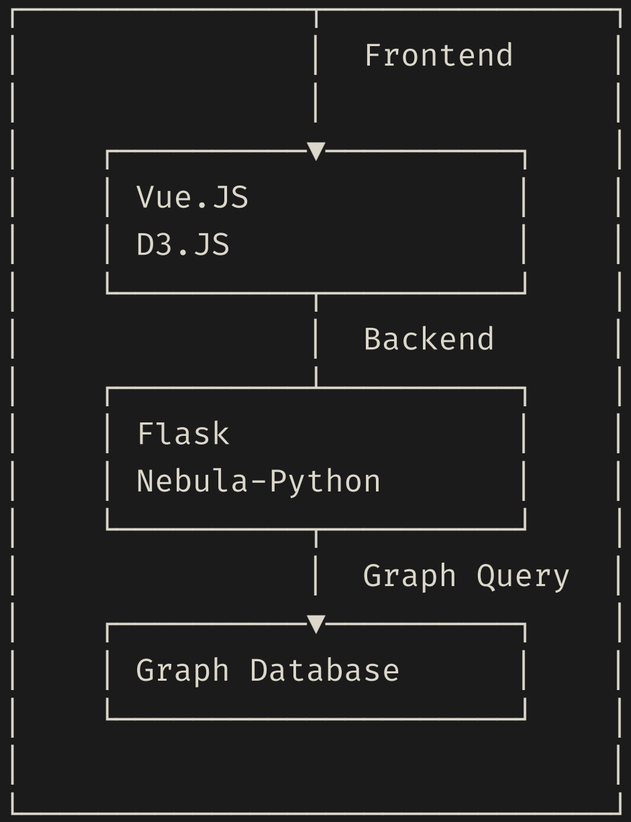

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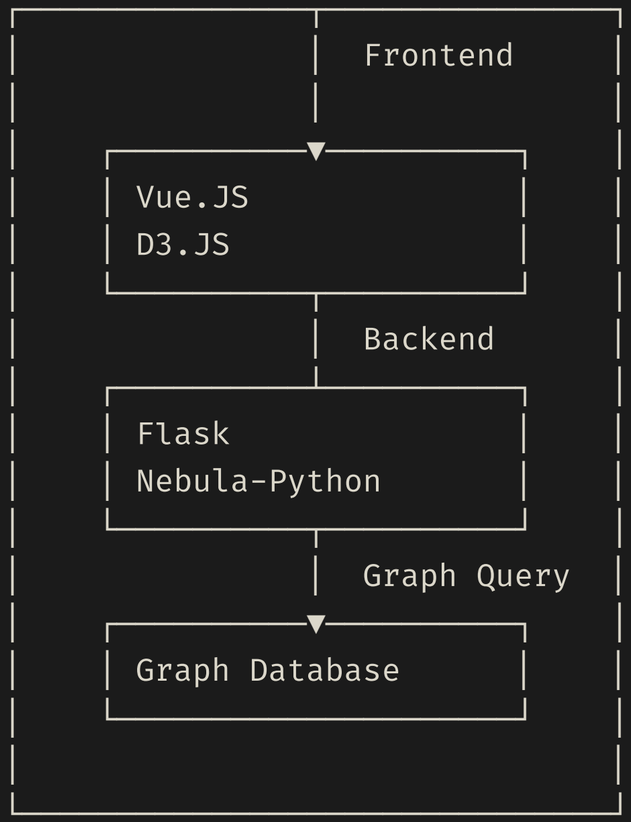

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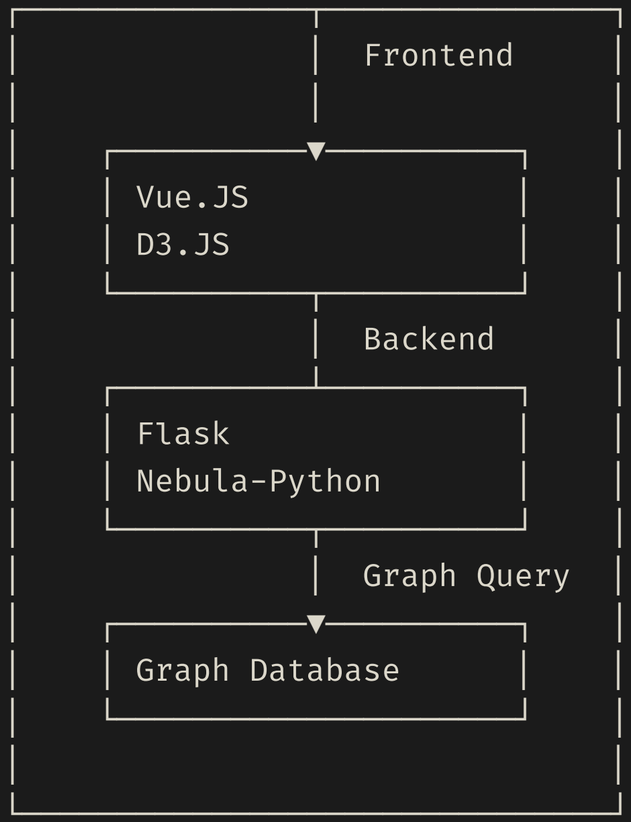

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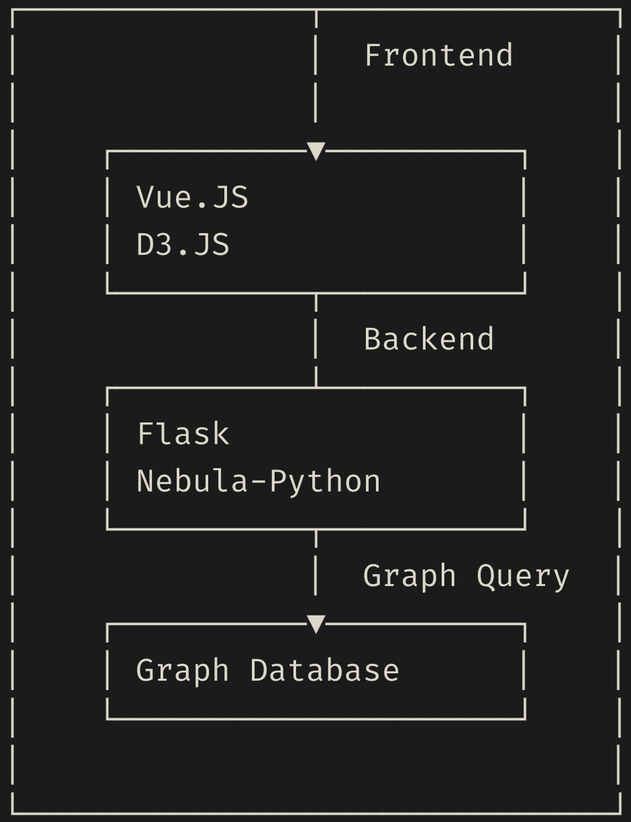

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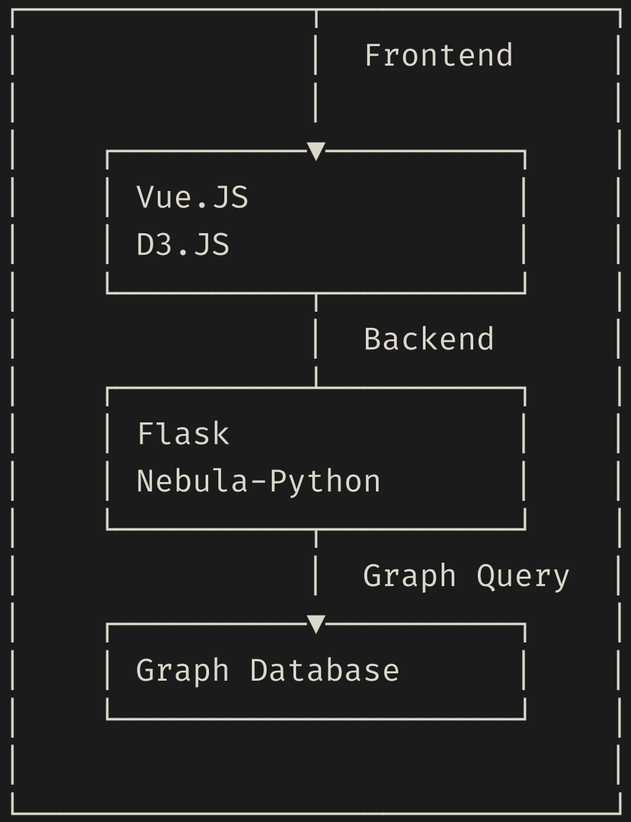

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Nebula Graph in Docker and Dataset Import

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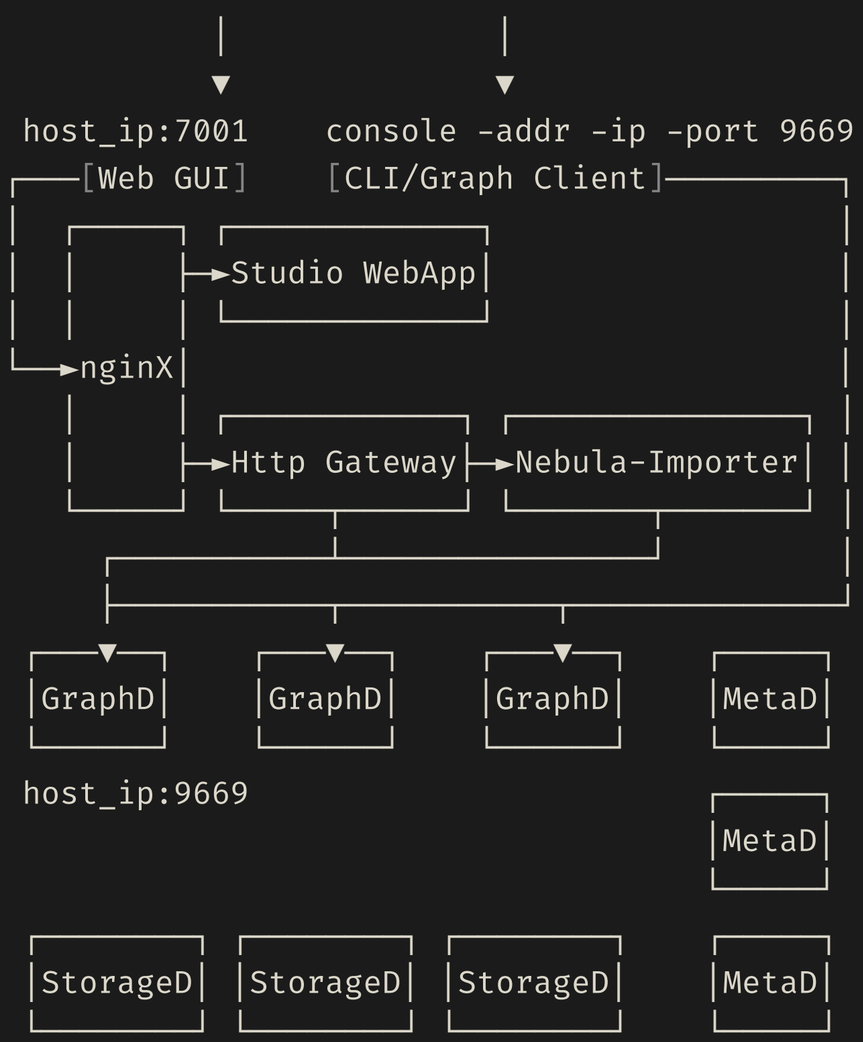

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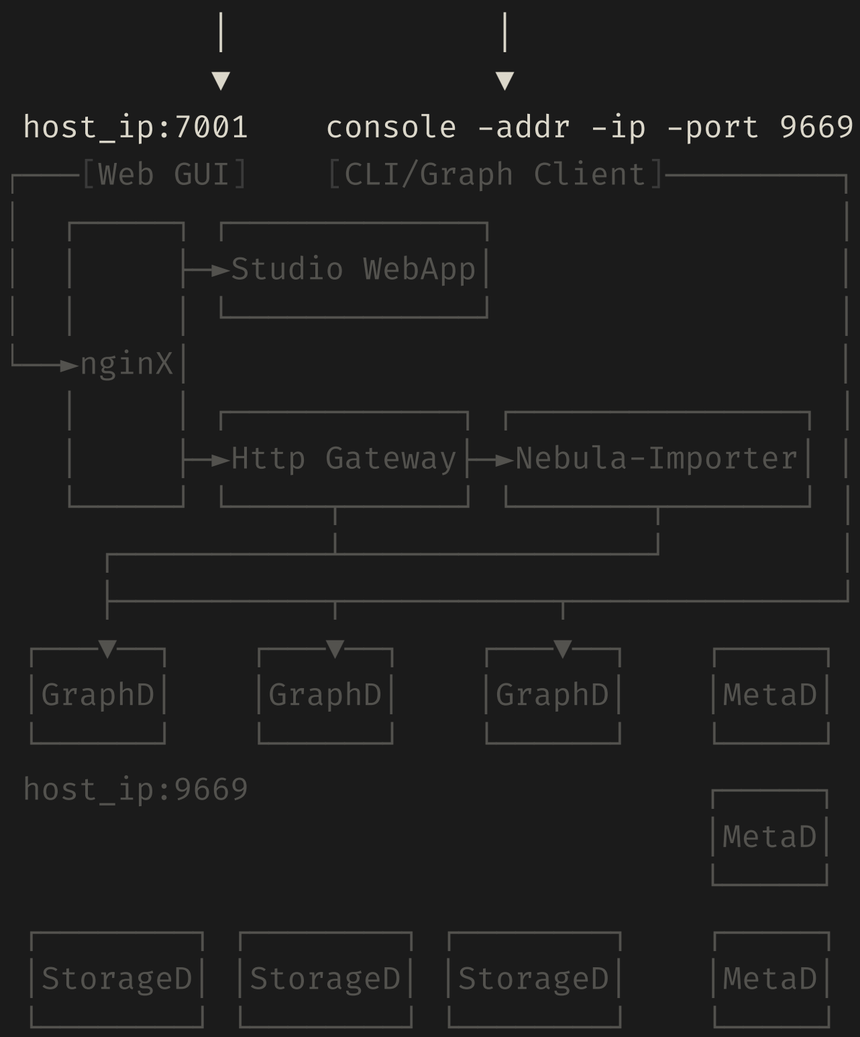

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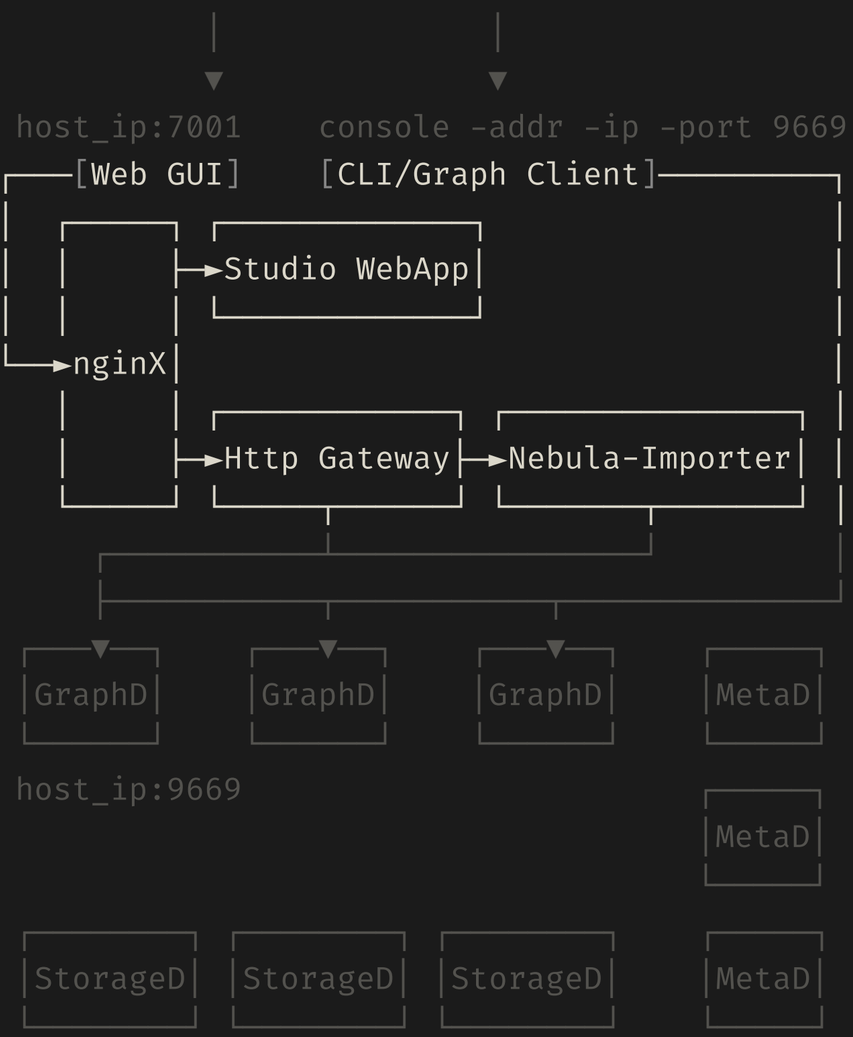

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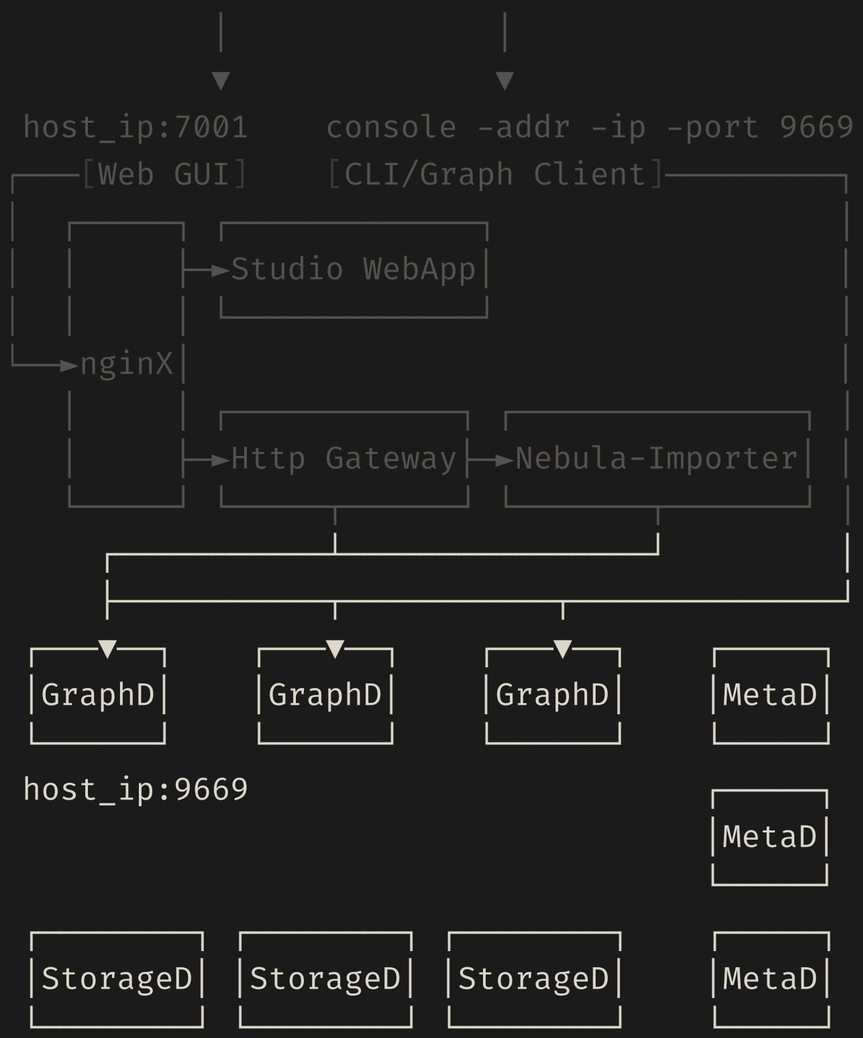

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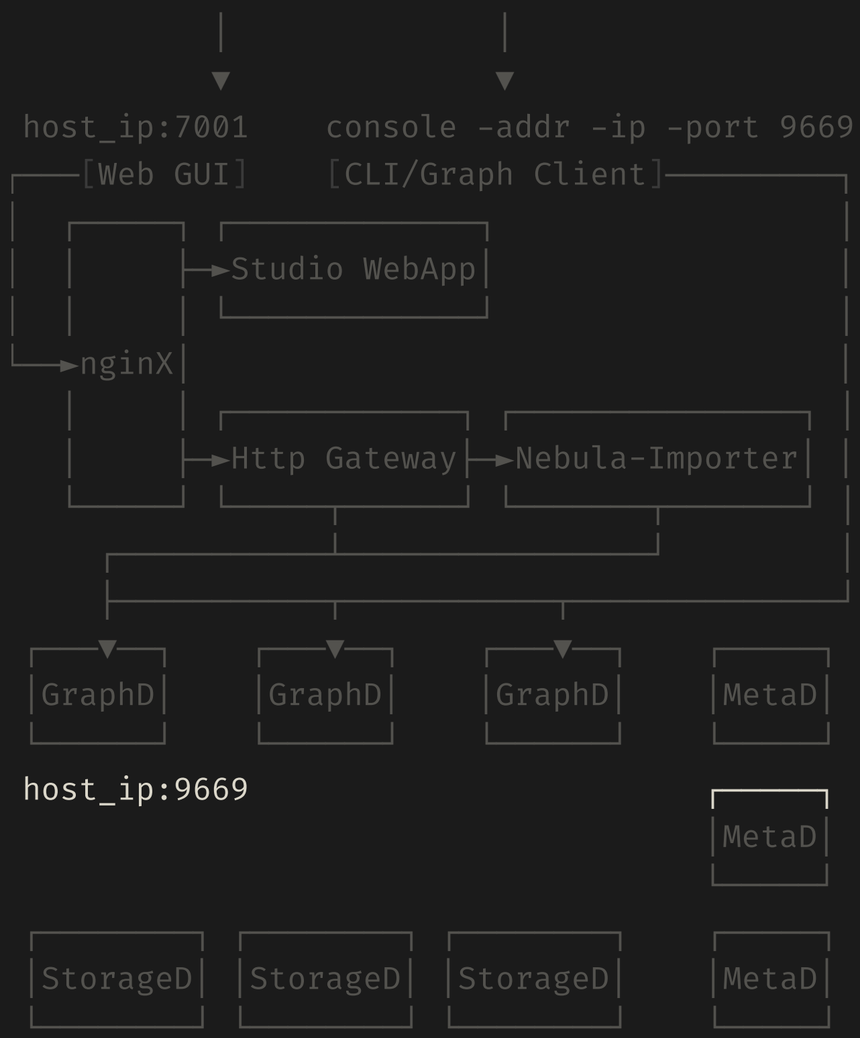
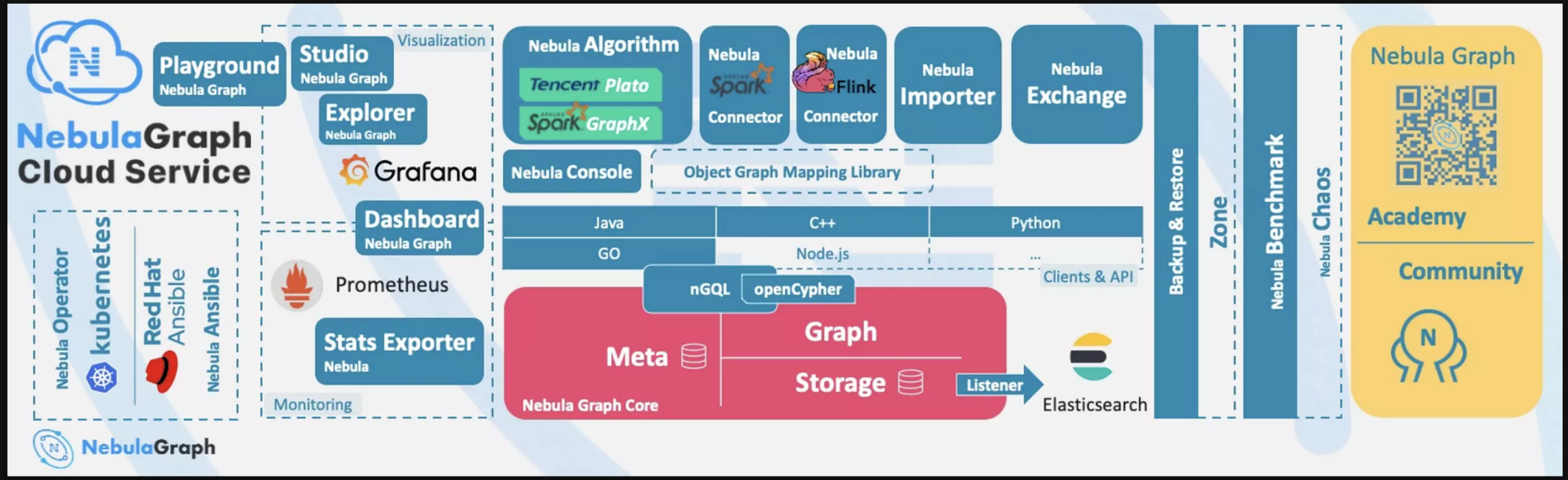


Nebula Landscape

Nebula 社区生态非常丰富，并且还在日益拓展，欢迎同学们了解、参与贡献。

- Deployment, Monitoring
- Data Visualization
- Algorithm, Analytic
- Clients, Connectors, ETL



vesoft-inc/**nebula**

墨天轮

为什么选择 Nebula?

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ⓘ x-lab/2020 开源报告

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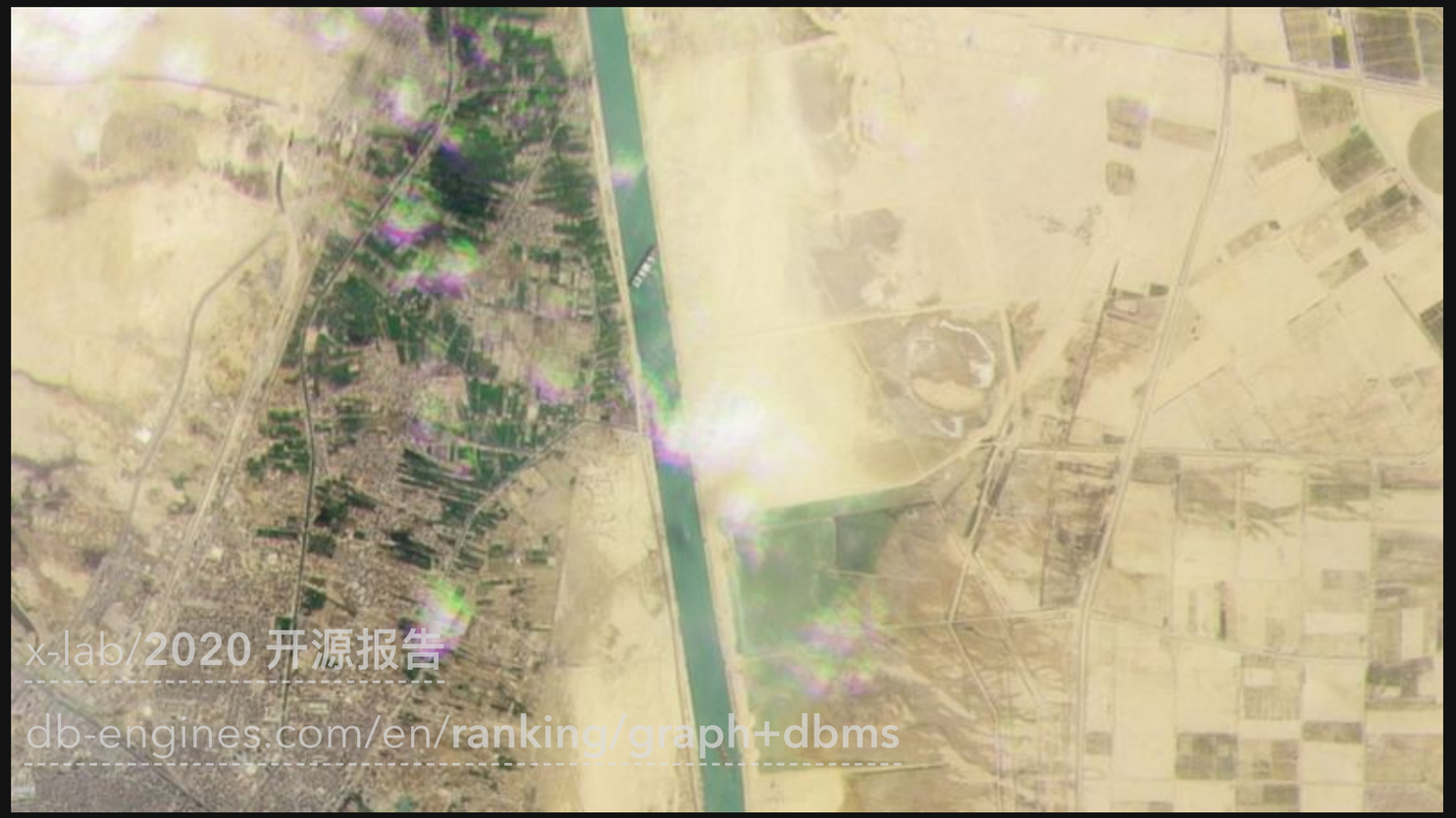

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Scale makes differences
@NebulaGraph

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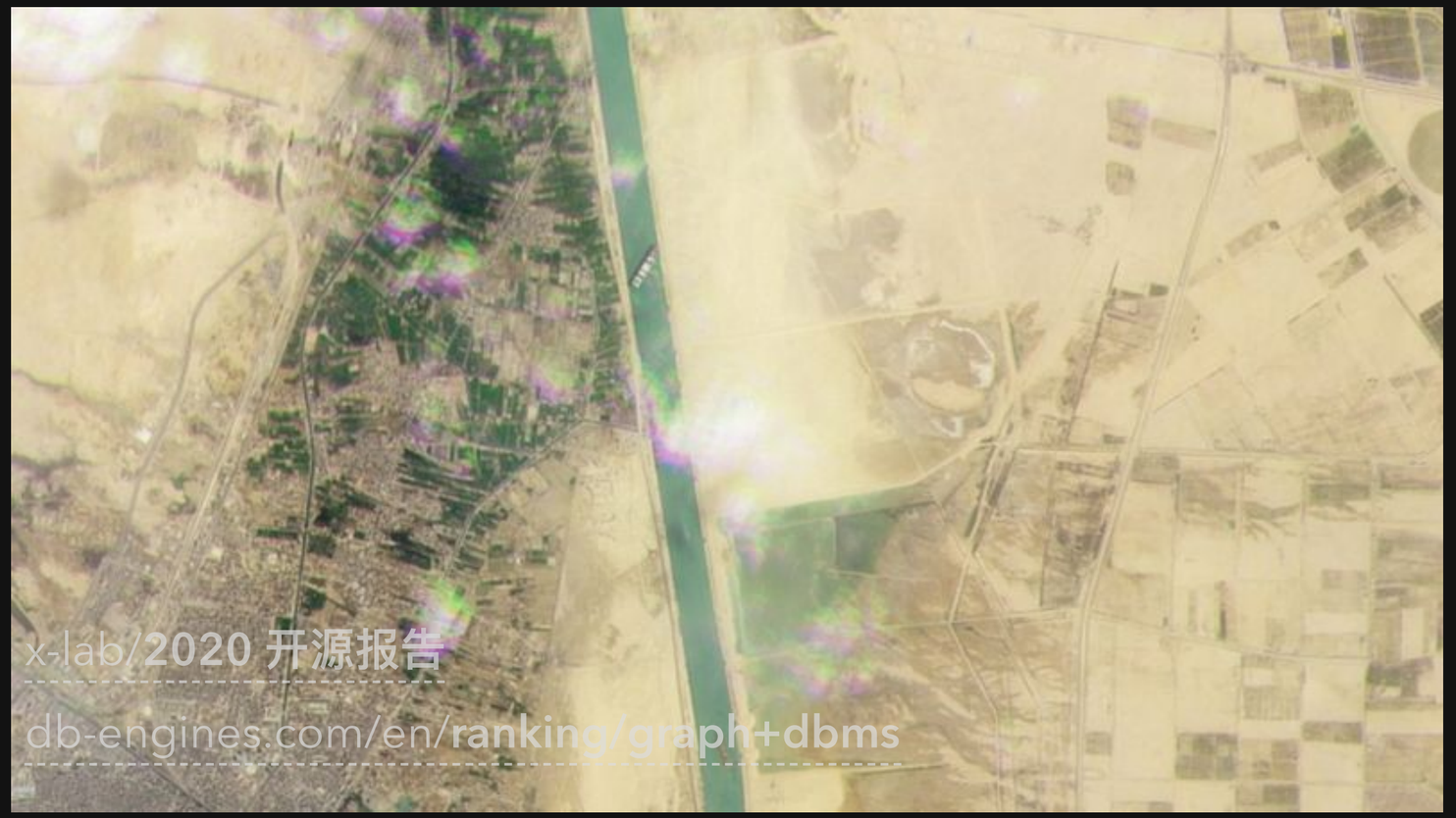

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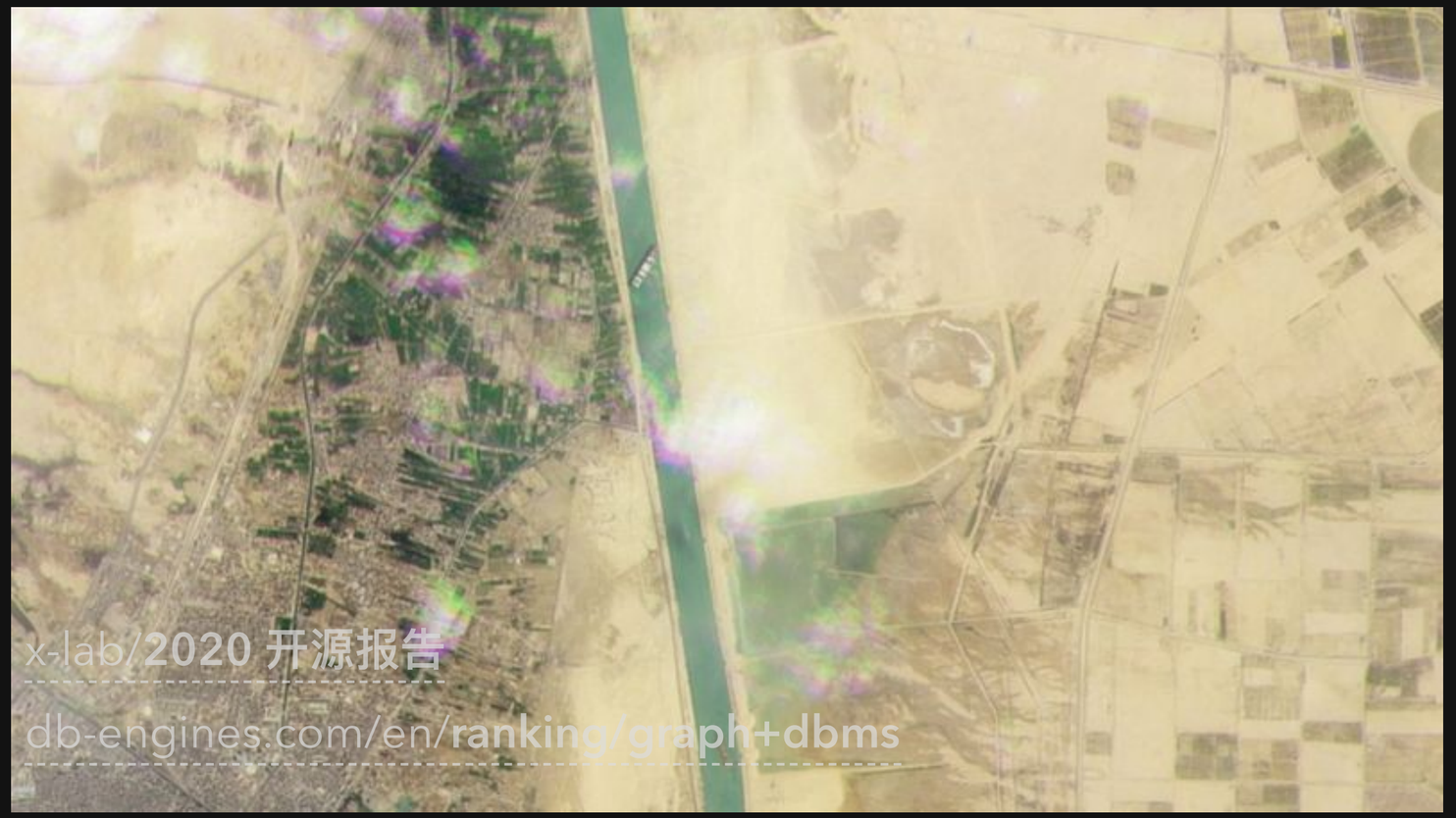

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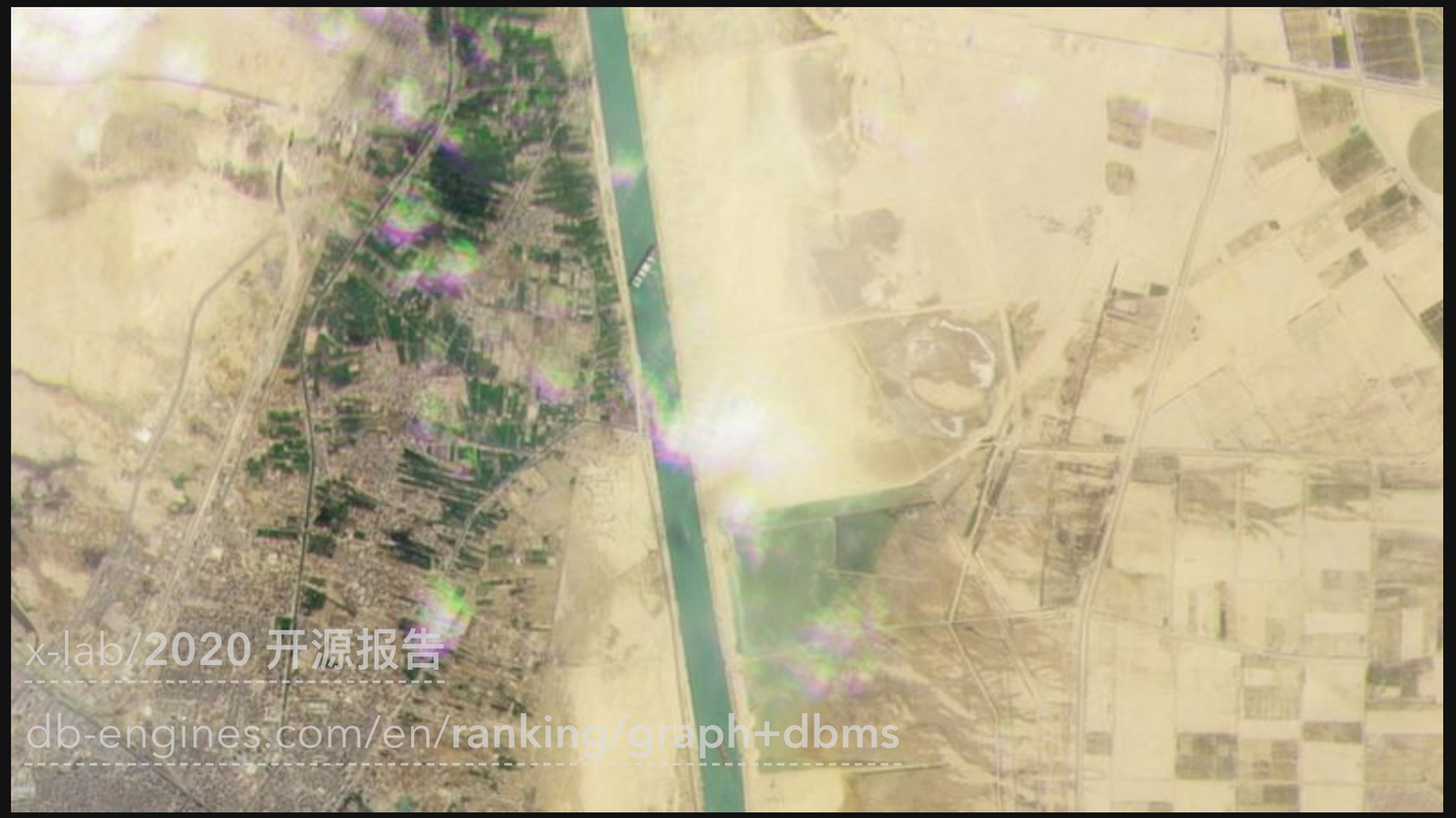

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