How Open Source AI impacts Industries including Networking

Wei MENG

ZTE Corporation
Open Intelligent Computing Industry Alliance
Linux Foundation AI & Data

Biography

◆Head of Open Source Program Office at ZTE

◆Chairperson of Governing Board at Linux Foundation AI & Data (2023-2024)

◆Chairperson of WG3 FG-ML5G at ITU 2018-2020

◆Secretary-general of COIA (Open Intelligent Computing Alliance)

◆Engaged in IT technology research and development for 20 years, including 12 years in standards work. He has compiled more than 10 international standards and more than 20 Chinese standards, in standards organizations such as IETF and ITU, covering network protocols, 5G, and AI. Since 2015, he has been responsible for ZTE open source team. In 2018, he participated in the establishment of the Linux Foundation Deep Learning Foundation (the predecessor of LF AI & Data) in the US. In 2023 and 2024, he has been elected as the chairperson of the Governing Board of LF AI & Data.

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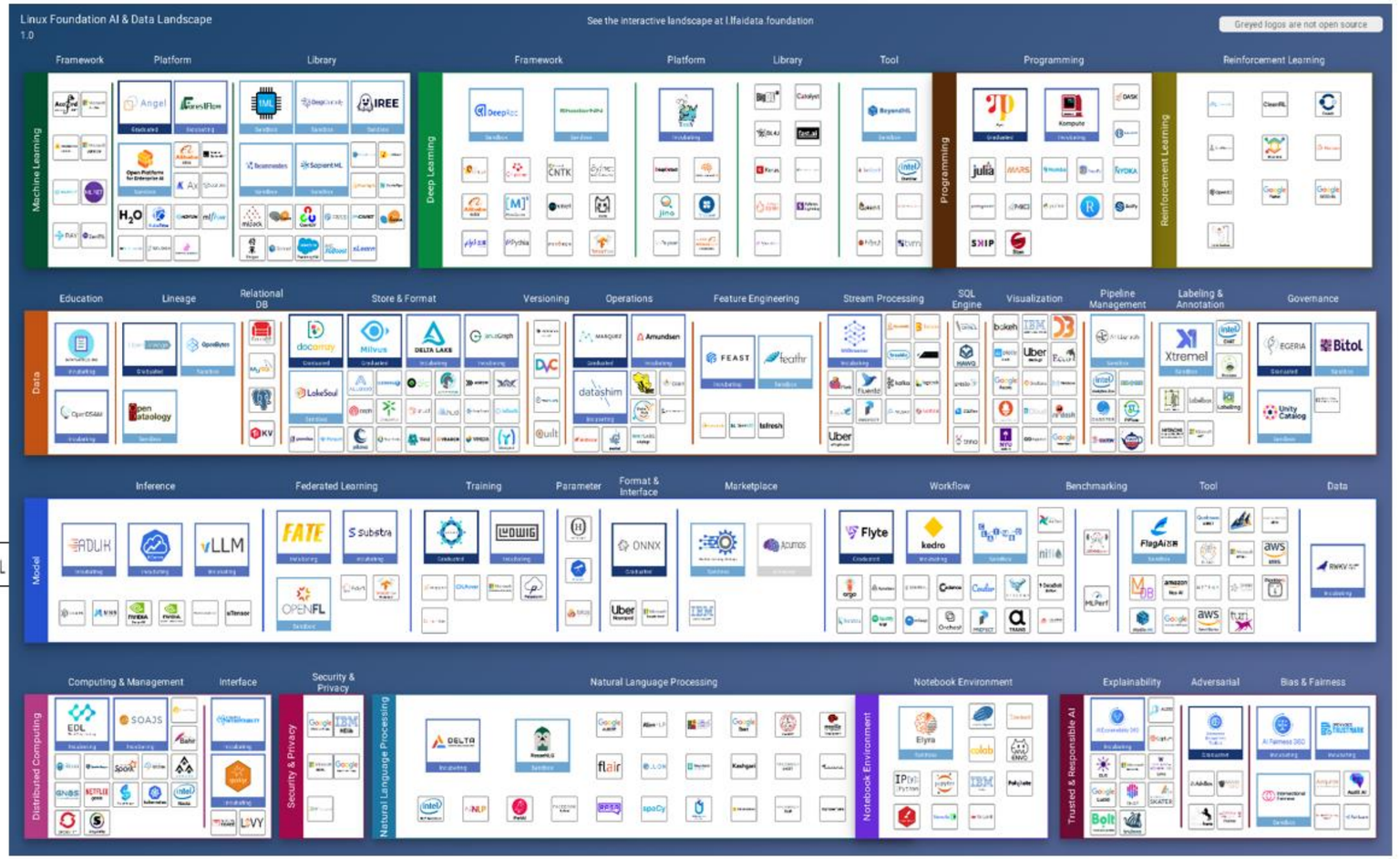
Who is LF AI & Data

A growing ecosystem: The barrier to entry in AI is lower than ever before, thanks to open source software

The LF AI & Data Foundation is an umbrella of The Linux Foundation that supports open source innovation in artificial intelligence, machine learning, deep learning and data open source projects. The LF AI & Data Foundation was created to support numerous technical projects within this important space.



LF AI & DATA Landscape

- 365+ Projects
- 3.3M+ GitHub Stars
- 100K+ Developers
- 200+ Founding Org
- 600M+ LoC
- 1M+ LoC / Week
- 1000s of Contributing Orgs

Introduction to COIA

- **On December 18, 2024**, under the support and guidance of the world's largest open-source foundation — the **Linux Foundation**, and the **China Open Source Software Promotion Union**, the **Open Intelligent Computing Industry Alliance** was officially launched. It was jointly initiated by **ByteDance, China Mobile, China Unicom, Digital China, H3C, Intel, Alibaba Cloud, UnionTech Software, ZTE**, along with institutes such as **Beijing Academy of Artificial Intelligence (BAAI), China Academy of Information and Communications Technology (CAICT), the Fourth Electronics Research Institute of the Ministry of Industry and Information Technology, and Peng Cheng Laboratory**.
- The Alliance is committed to promoting the adoption of open-source AI and large models in Chinese industries, incubating more AI application projects, and fostering more unicorn companies in the field of artificial intelligence.
- The Alliance has established a **Council, Secretariat, Technical Committee, External Liaison Committee, Security Committee**, and several **working groups**, as shown in the diagram below.

Members:

Adopted Projects:

LF Projects

Open Platform for Enterprise AI

ADLIK

CO-SIGHT

SynerFuse

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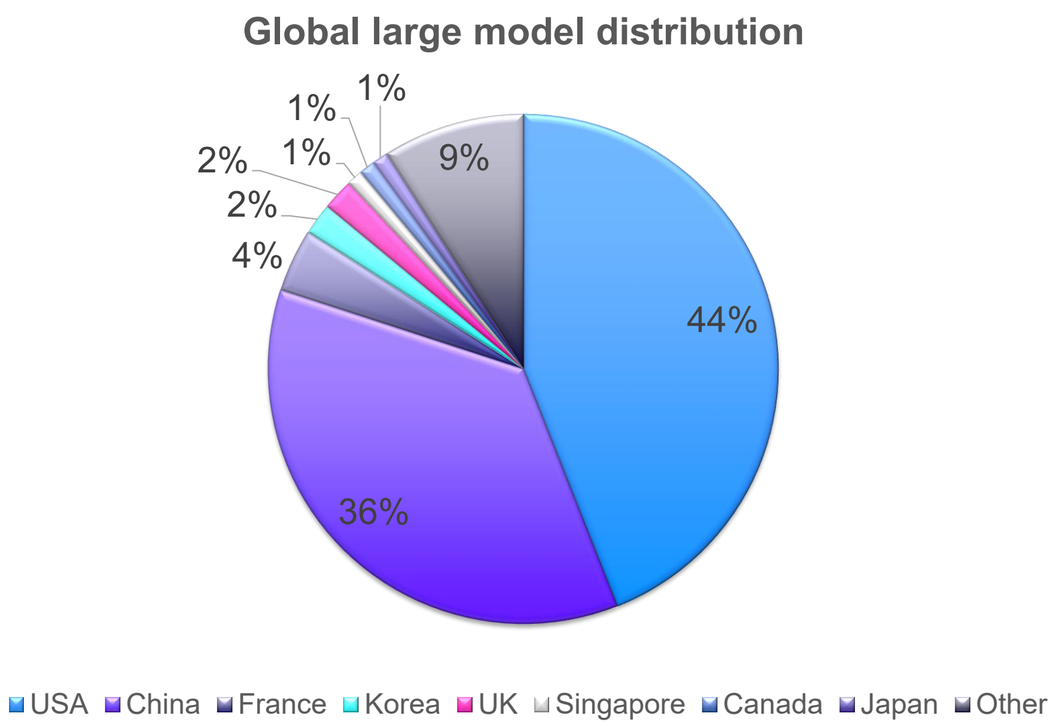
Opportunities of AI implementation

Opportunities



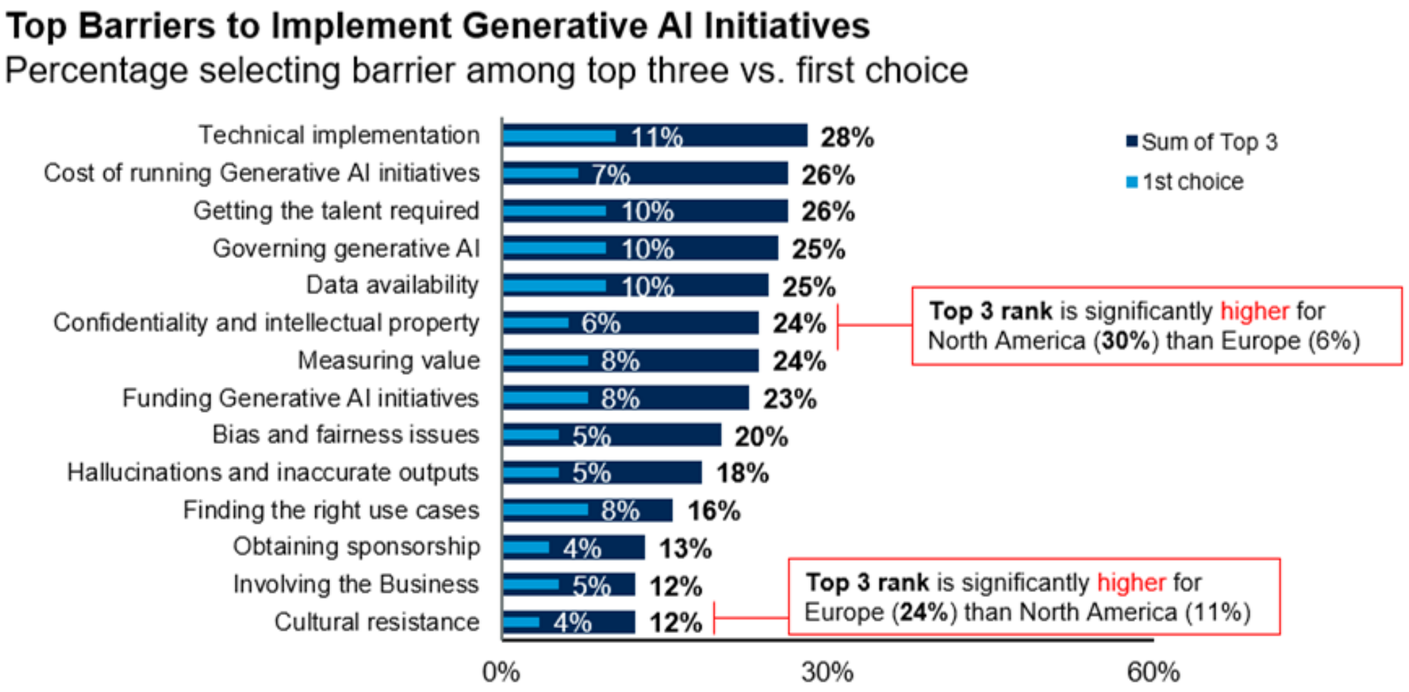
“There are 1,328 basic LLMs in the world”

Quoted from China Academy of Information and Communications Technology's "Global Digital Economy White Paper (2024)"

We have sufficient foundation LLMs

Challenges of AI implementation

Challenges



- Technical Complexity
- Cost
- Talent Scarcity

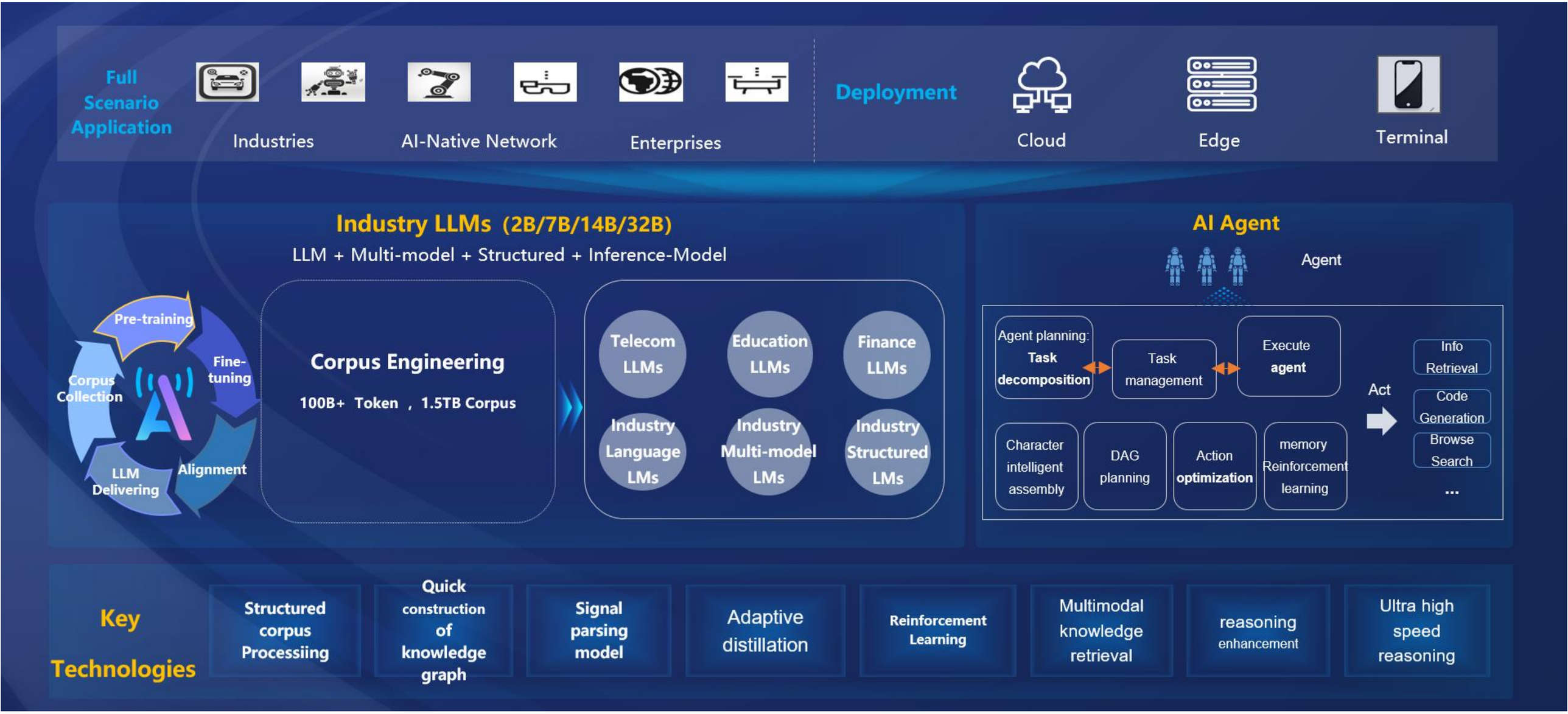
Solution: Open Ecosystems

n = 114 leaders highly involved in AI, whose orgs are advanced in generative AI adoption, excluding "unsure"

G03: What are the top 3 challenges that your organization has come across when implementing generative AI initiatives?

Source: 2023 Gartner AI in the Enterprise Survey

LLM & Agent, shaping a new paradigm in industries



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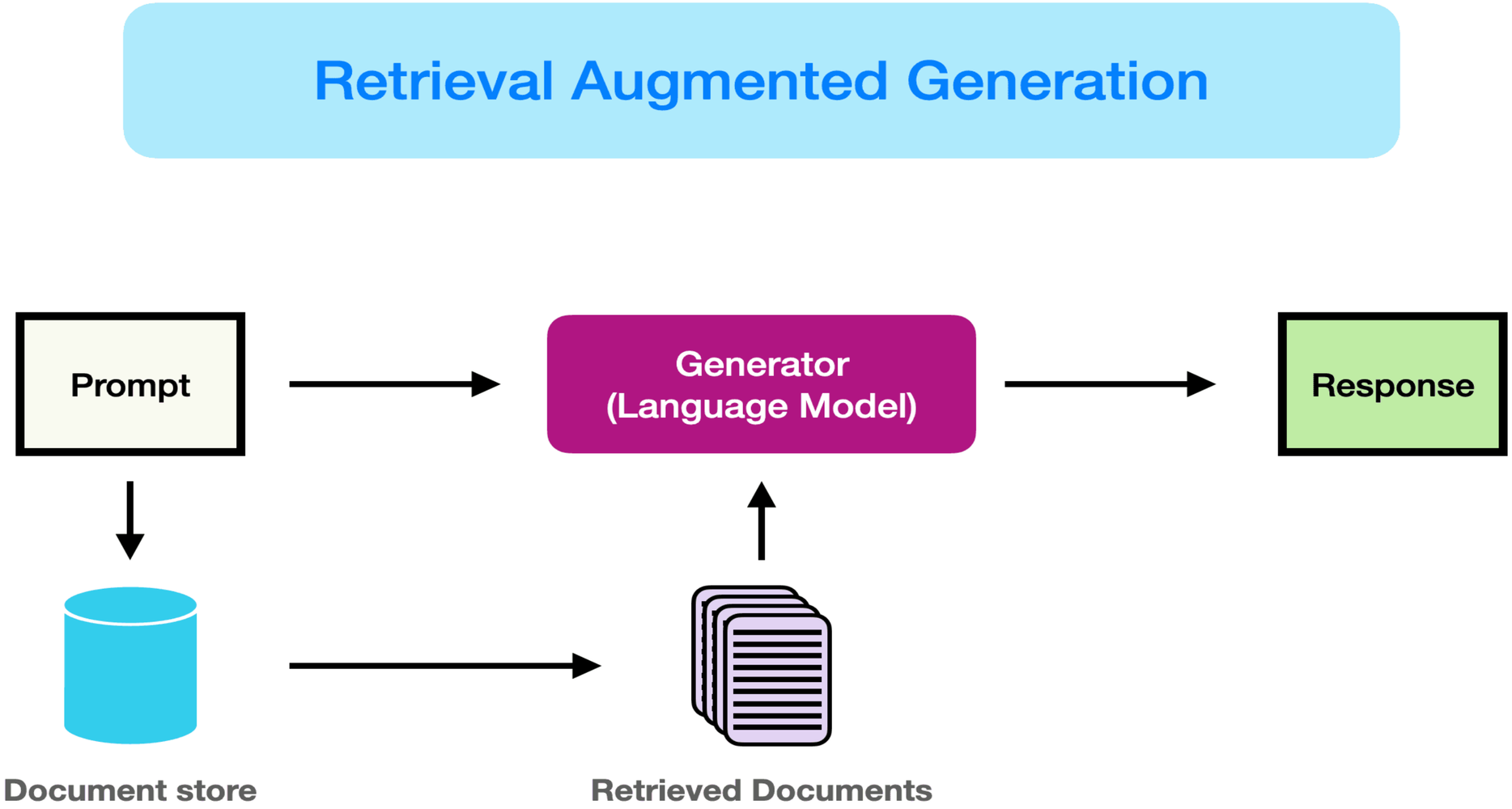
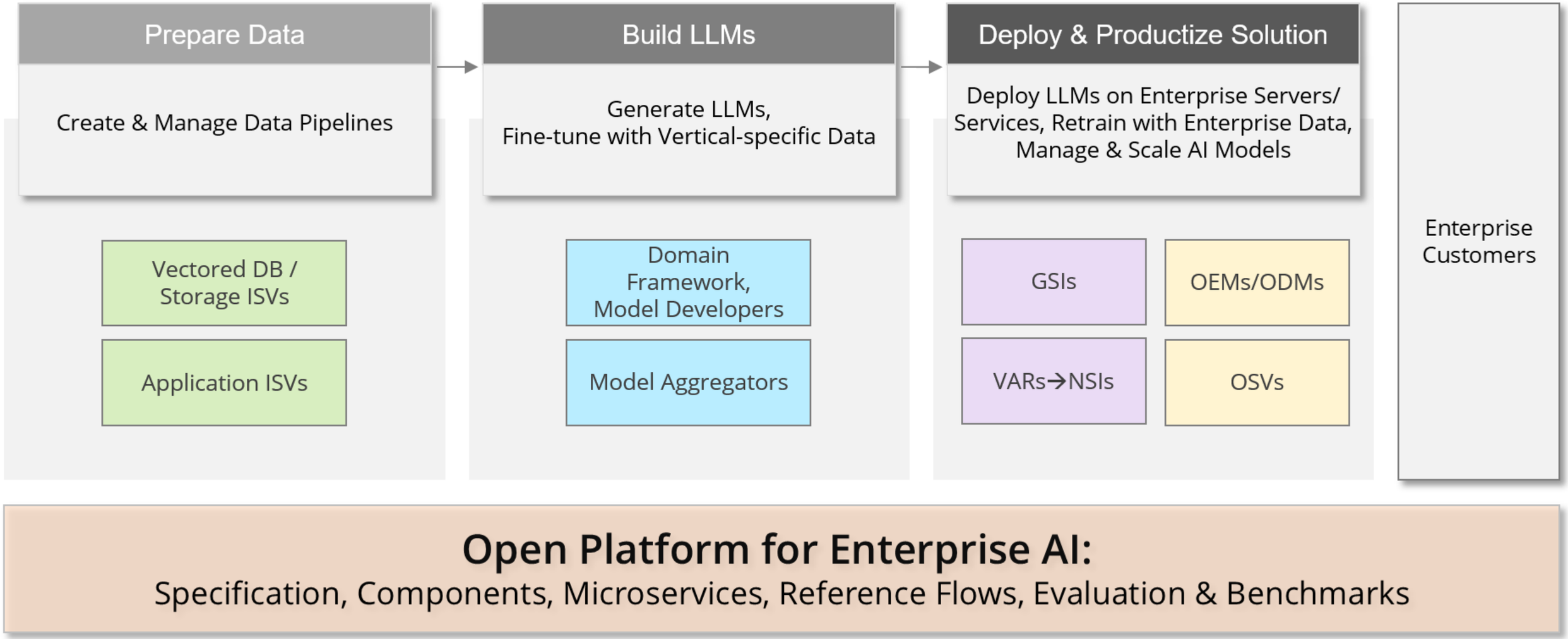
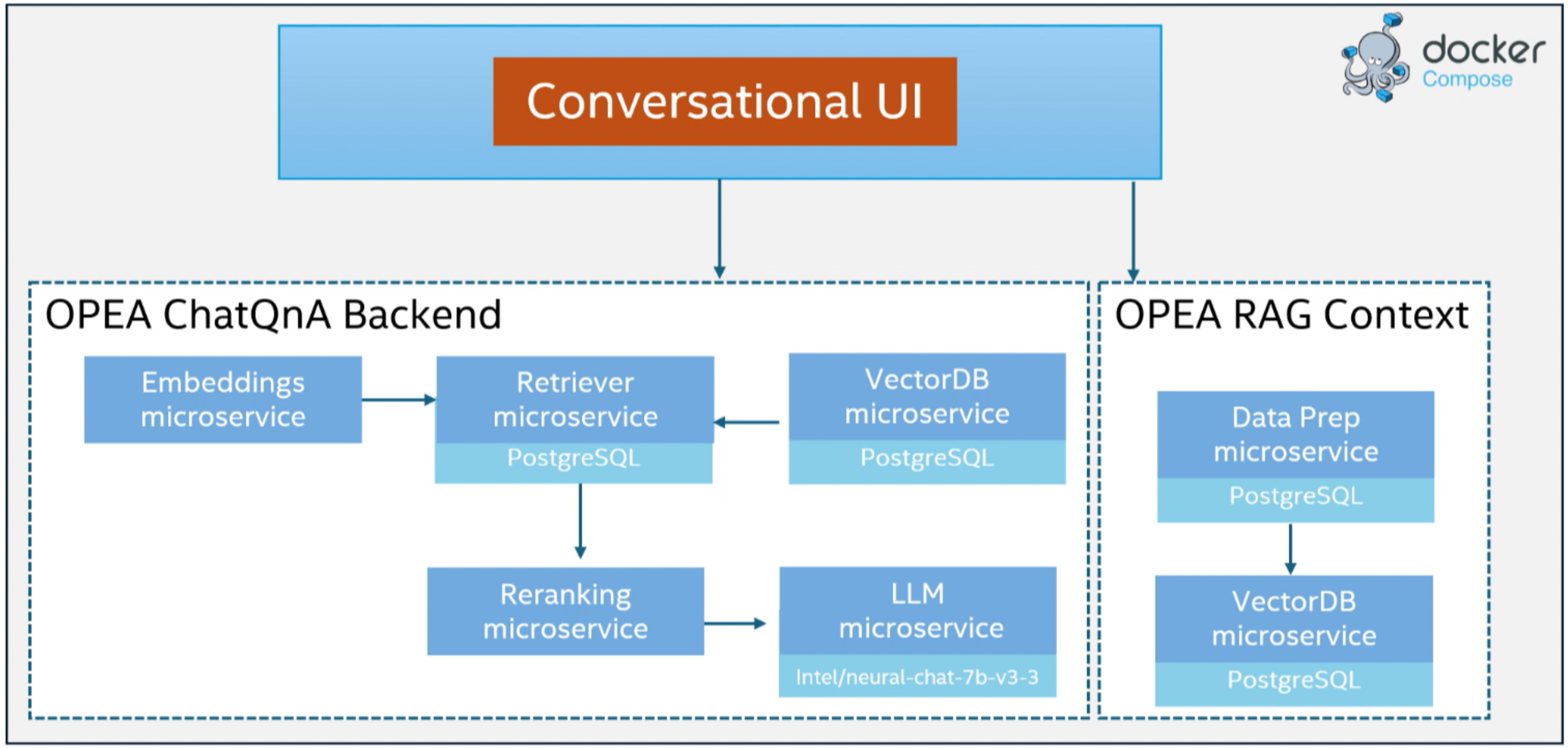
Introduction to RAG



Open source project - OPEA

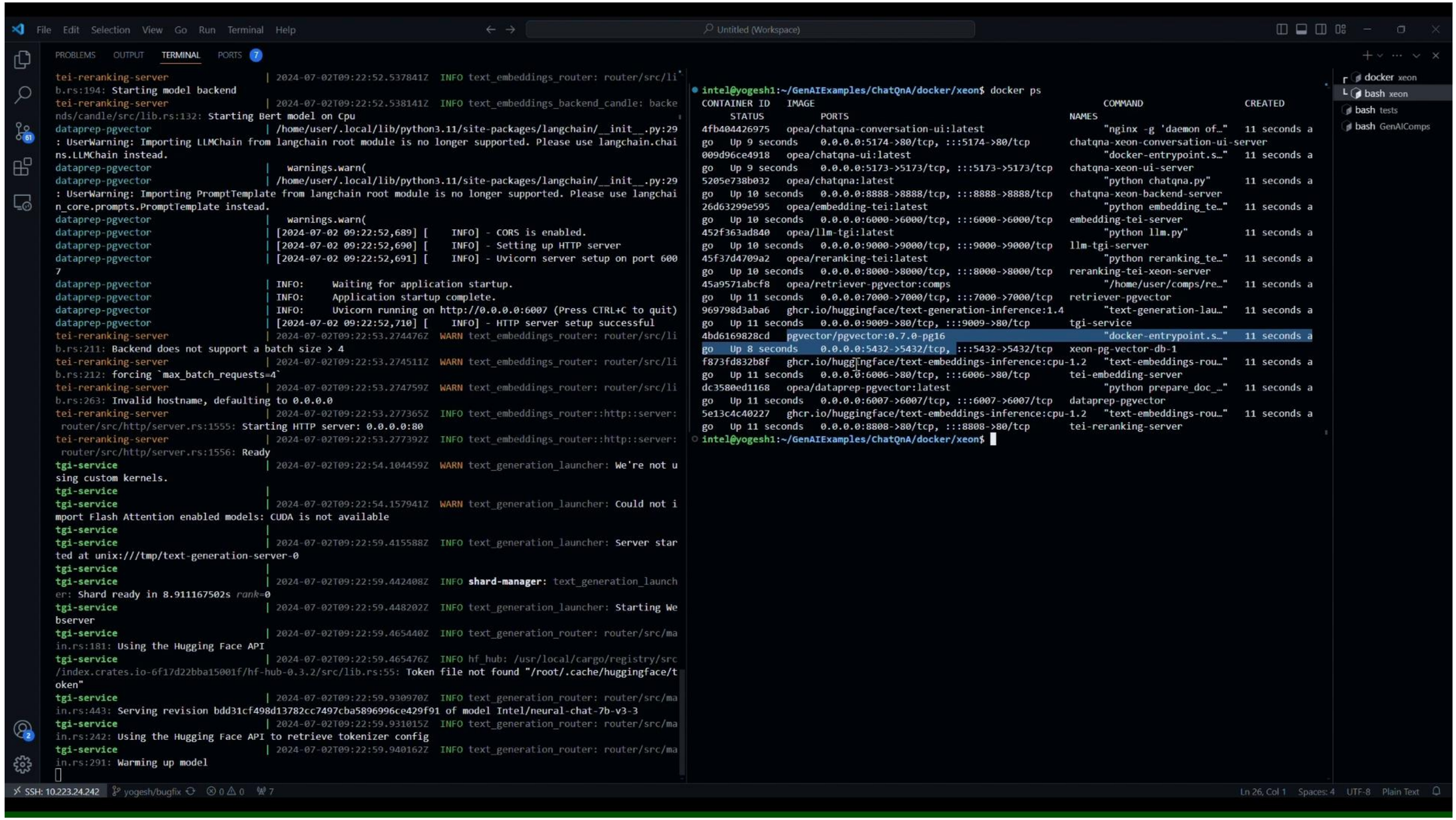


Chat QnA deployment using OPEA



RAG is particularly advantageous when you need a model that is adaptable, efficient, and capable of leveraging external information dynamically, while fine-tuning may be more suited for scenarios where you have abundant labeled data and specific performance targets.

Demo – Question for “OSPO for Good 2024”



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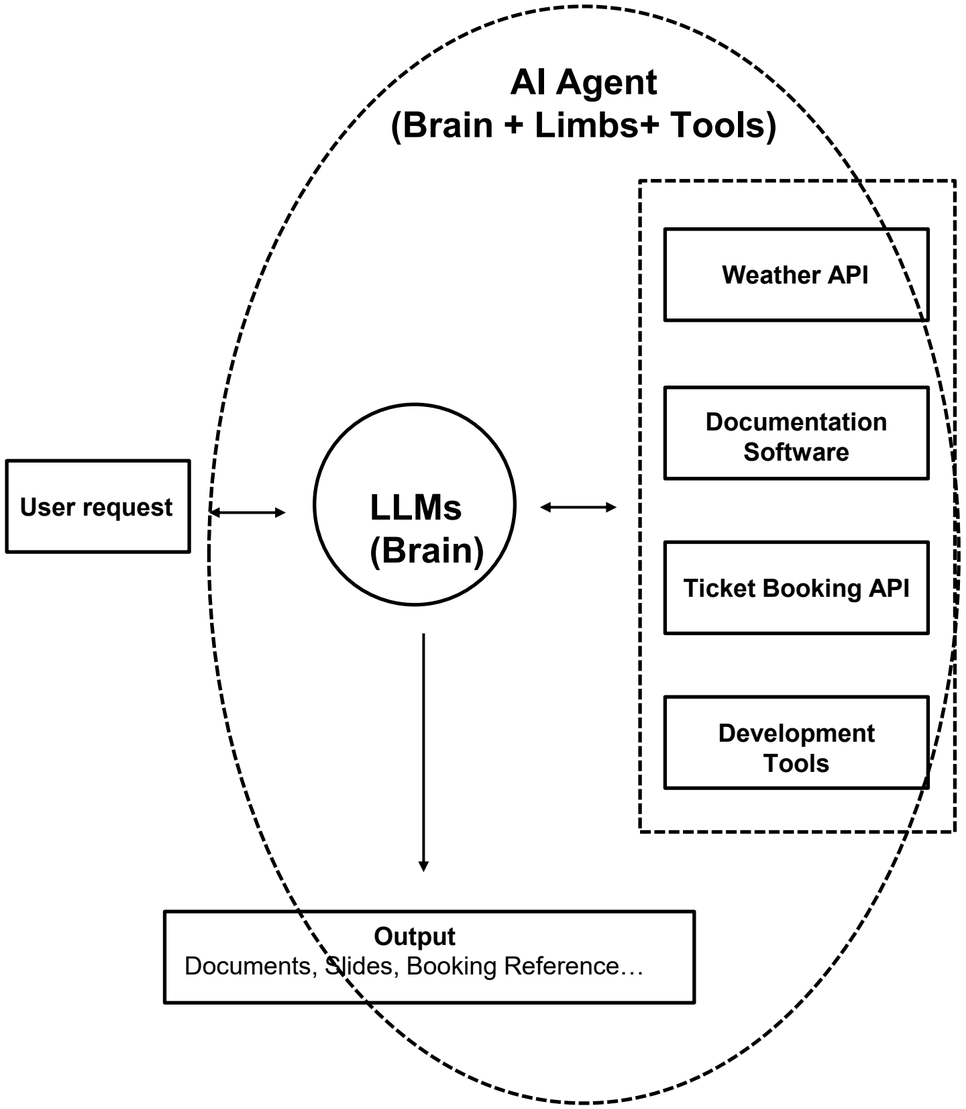
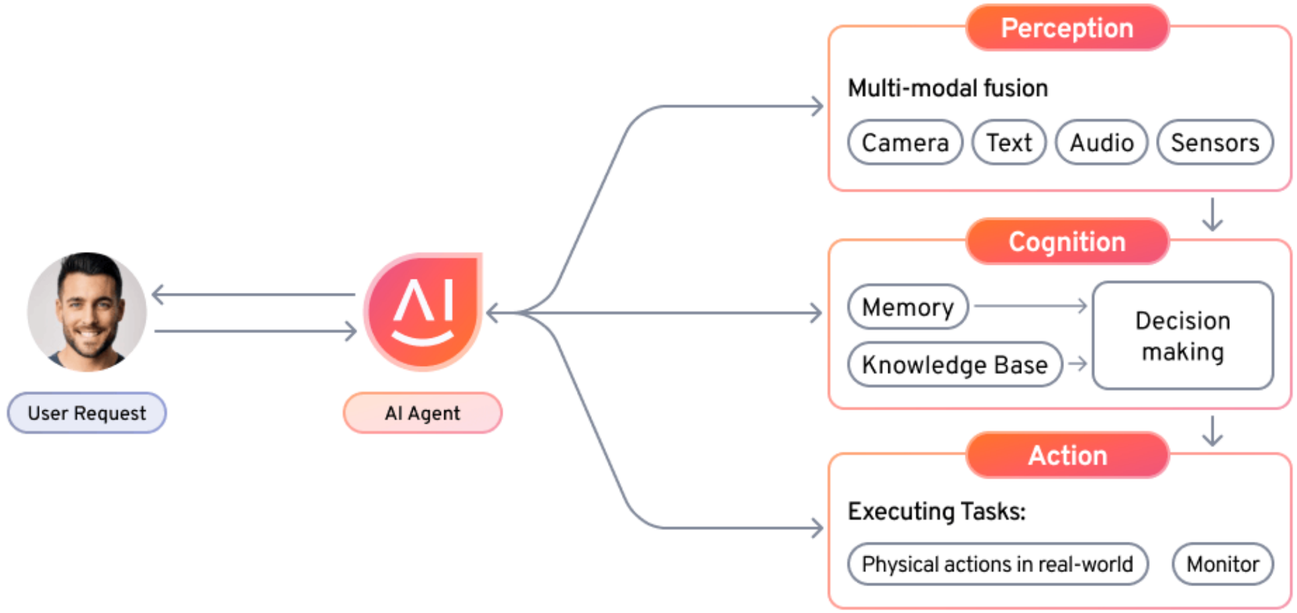
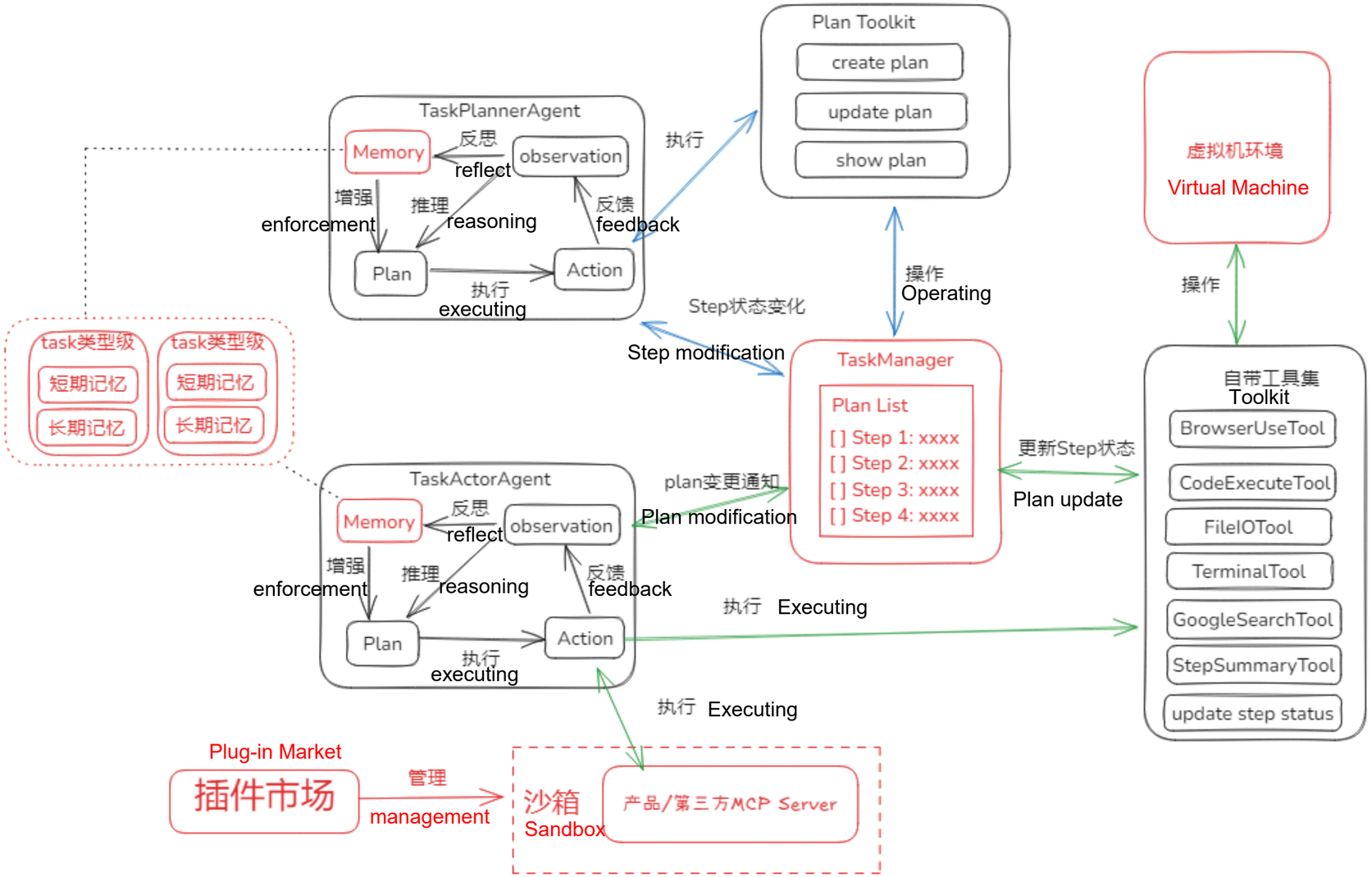




Open source project - Co-sight

Features:

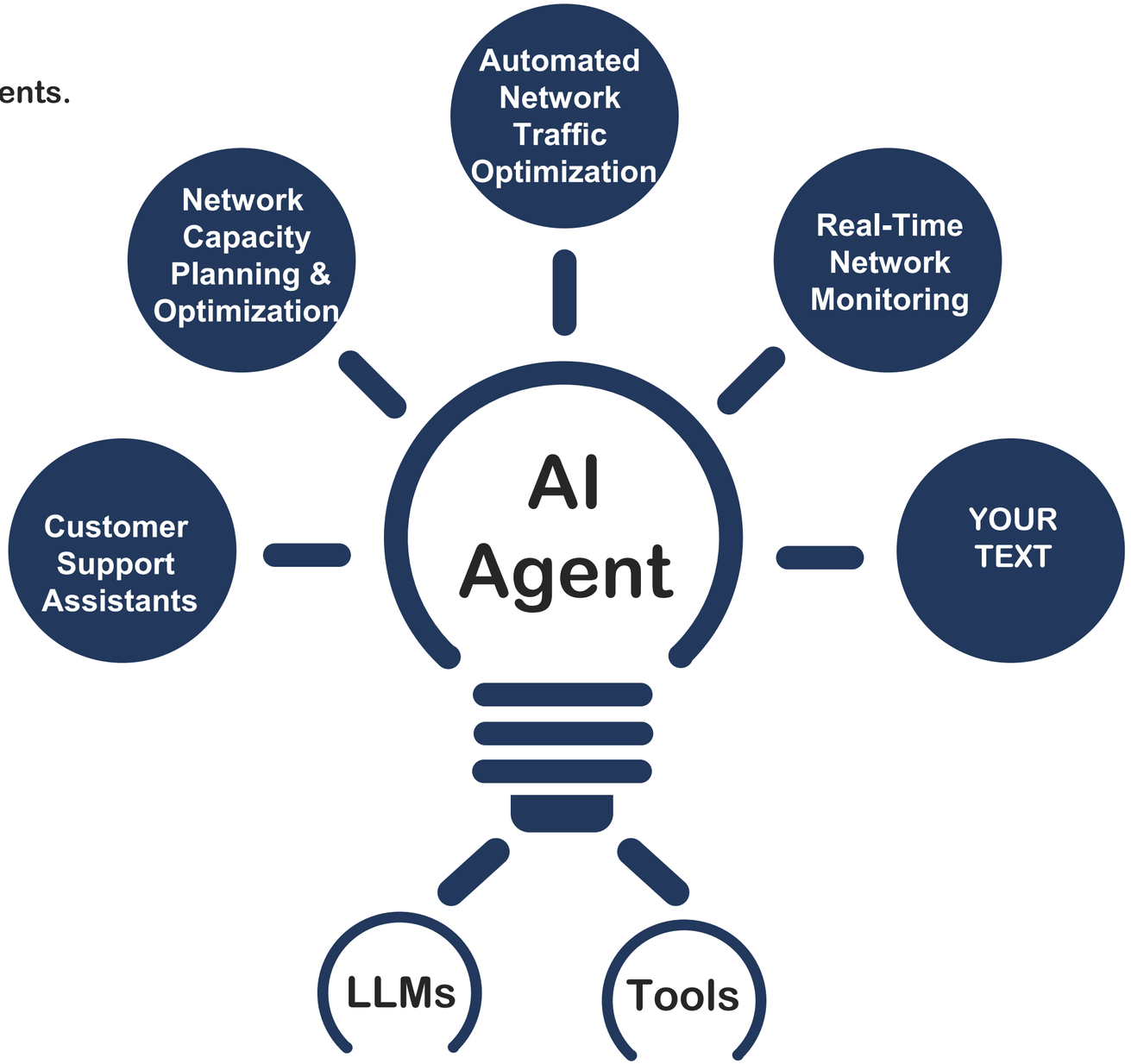
- Hierarchical multi-agent collaboration
- TaskManger is responsible for the unified management of planning and status
- Agent task level long-term and short-term memory, enhanced planning based on step level reflection.
- Support MCP protocol
- Virtual Machine Environment



Build your own telecom AI agents

Download open-source AI agent frameworks and open-source LLMs, you can easily deploy carrier grade AI agents.

- Customer Support Assistants: These agents act as virtual customer support assistants, offering instant responses to common queries and resolving simple issues. They can handle many customer service tasks, such as billing inquiries, troubleshooting, and account management, reducing the need for human intervention.
- Network Capacity Planning and Optimization: These agents study actual and past traffic trends in the network to forecast future flow and allocate resources accordingly. By predicting traffic loads and points of congestion, they assist the telecom organization in organizing and improving its communication infrastructure to respond to customers' increasing demands.
- Automated Network Traffic Optimization: Autonomous These agents can actively oversee the network traffic and control it by granting, prioritizing, and routing the data bandwidth as it deems fit. This makes it possible to conserve the network resources, minimize the traffic, and enhance effective use throughout the network, especially at maximum hours. Add your text here. Add your text here. Add your text here. Add your text here. Add your text here.
- Real-Time Network Monitoring and Issue Resolution: These agents maintain reliable and near real-time surveillance of network conditions and conditions that may include bandwidth bottlenecking, network failures, or intrusions. Once the problem is identified, they can fix it before extending it to the customer, enhancing network availability.
- Billing and Payment Processing: These agents autonomously handle customer billing inquiries and payment processing. They ensure customers are billed accurately and on time while offering seamless payment options, improving the overall customer experience and reducing the likelihood of billing disputes.



Thank you!