

Progress in the Application of Generative AI in the Cathodic Protection Industry

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Speaker Introduction

- Senior Engineer, General Manager of CorrosionX Technology Co., Ltd.
- Research direction: corrosion and protection, integrity management, artificial intelligence, 18 years of work experience
- Bachelor of Electrochemistry from Tianjin University, Master of Engineering Management from University of Technology Sydney
- Executive Director of China Corrosion and Protection Society (CSCP), Member of Cathodic Protection Committee & Equipment Health Intelligent Diagnosis Committee
- AMPP (formerly NACE International) Cathodic Protection Specialist (CP4), Integrity Management Specialist (PCIM)
- Member of the Transmission and Distribution Committee of the International Gas Union (IGU)
- Member of the Standardization Committee of the China City Gas Association (CGAS)
- Manager-level member of the Institute of Gas Engineers (IGEM)
- The corrosion protection and integrity management projects guided and implemented won the highest award in China's civil engineering, the Zhan Tianyou Civil Engineering Award, in 2021 and 2022 respectively.

Generative AI (2022-Present)

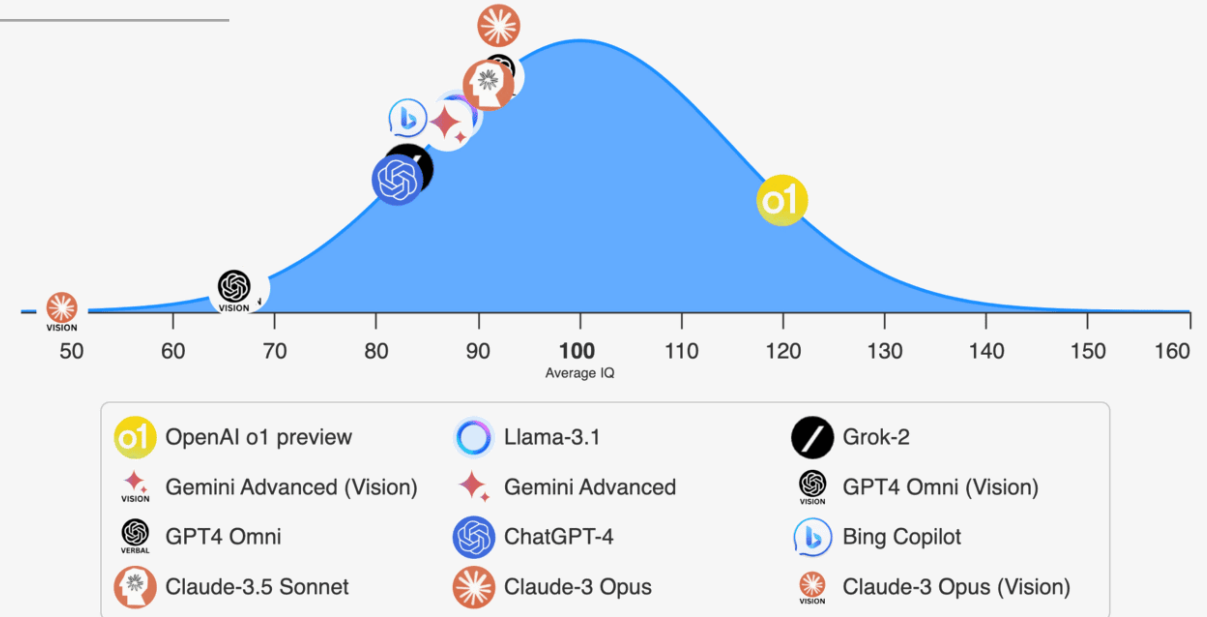
- The global LLM market is **projected to grow** from **\$1,590 million** in 2023 to **\$259,8 million** in 2030. During the 2023-2030 period, the CAGR will be at **79,80%**.

- The market **will reach \$105,545 million** in North America by 2030, with a CAGR of **72,17%**.

- In 2023, the world's top five LLM developers acquired around **88,22%** of the market revenue.

- By 2025, it's estimated that there **will be 750 million apps** using LLMs.

- In 2025, **50%** of digital work is estimated to be automated through apps using these language models.

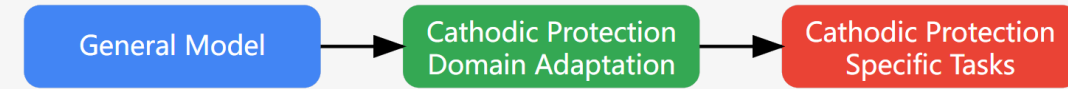


Generative AI (2022-Present)

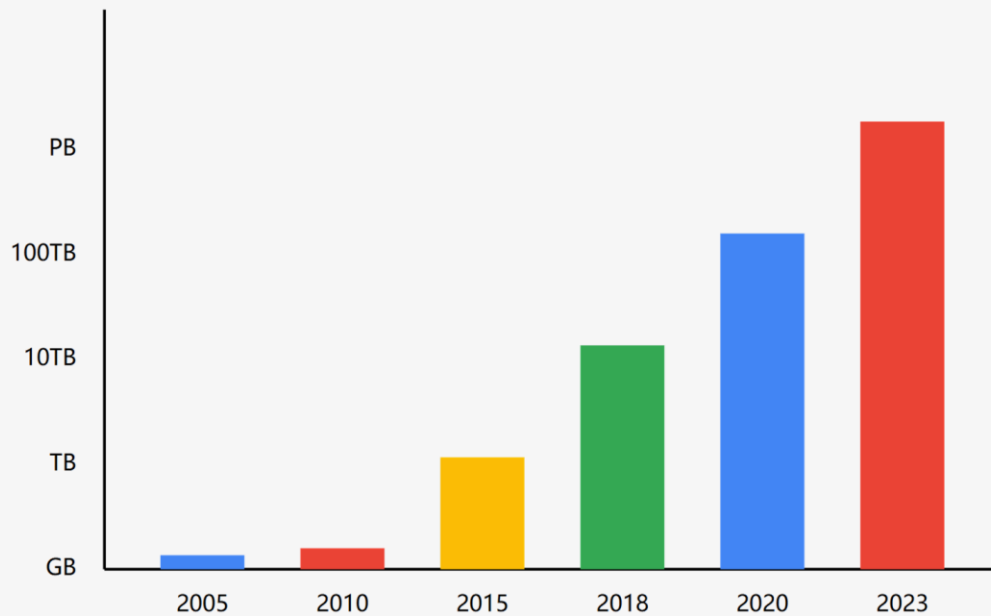
Large Language Model Training and Application Process



Transfer Learning Process for Cathodic Protection

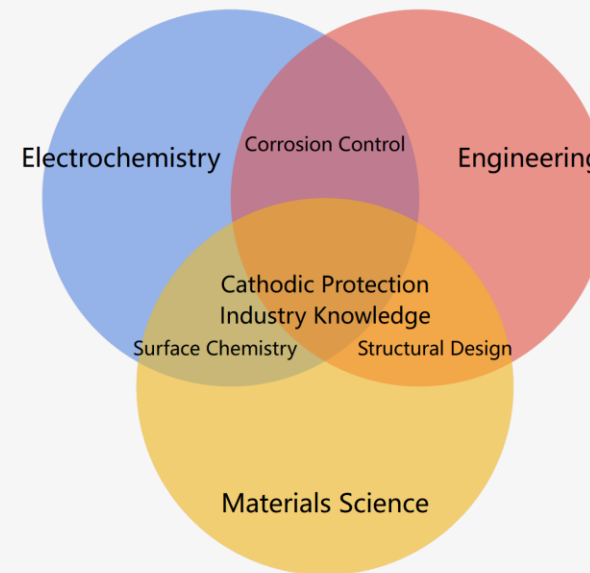


Growth in Large Language Model Training Data Size



Note: Data sizes are approximate, based on publicly available information

Cross-cutting Knowledge of the CP



Let's start with this question:

What qualities should an excellent worker possess?

Quick Response &
Strong Understanding

Intelligent

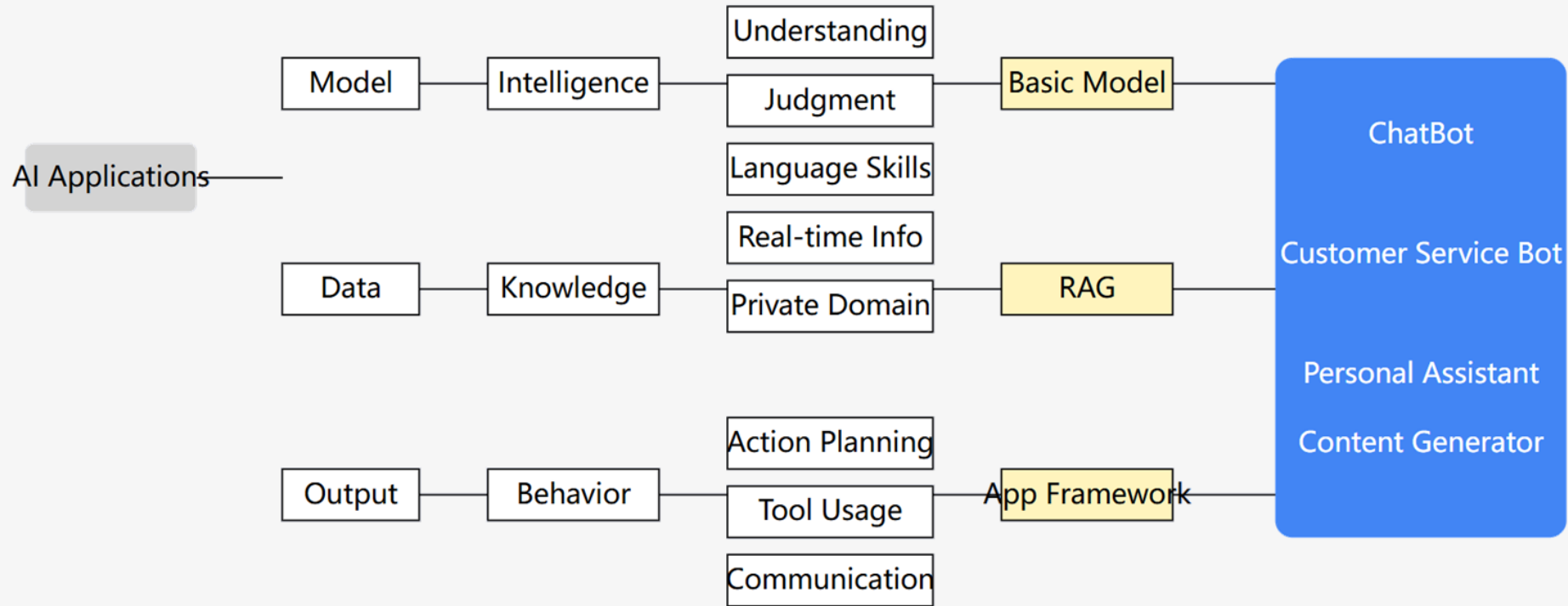
Has Knowledge &
Experience

Wisdom

Has Drive &
Takes Action

Proven Ability

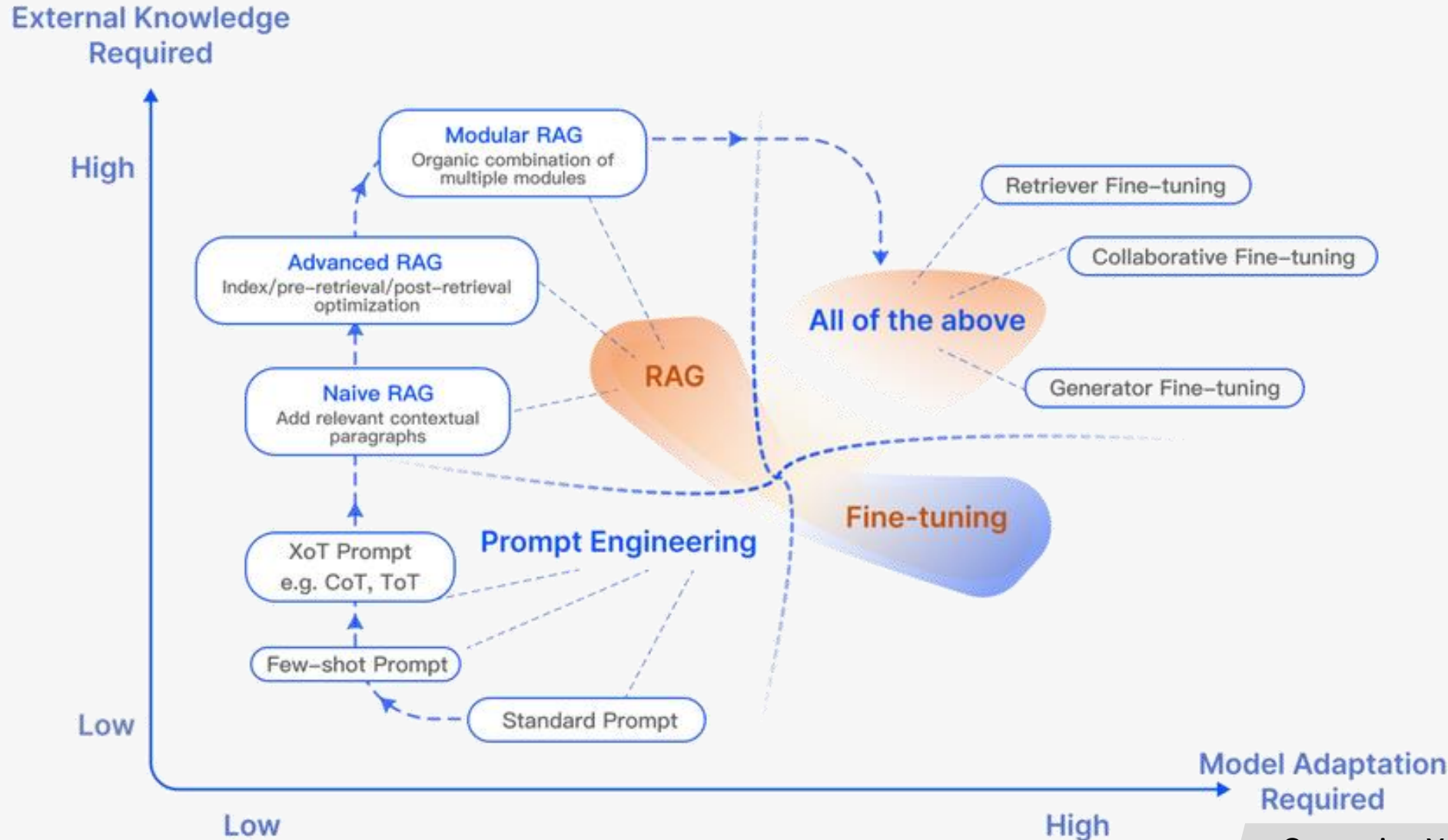
Three Key Elements of AI Applications



Output/Behavior Control is the key element for improving model applications and user experience

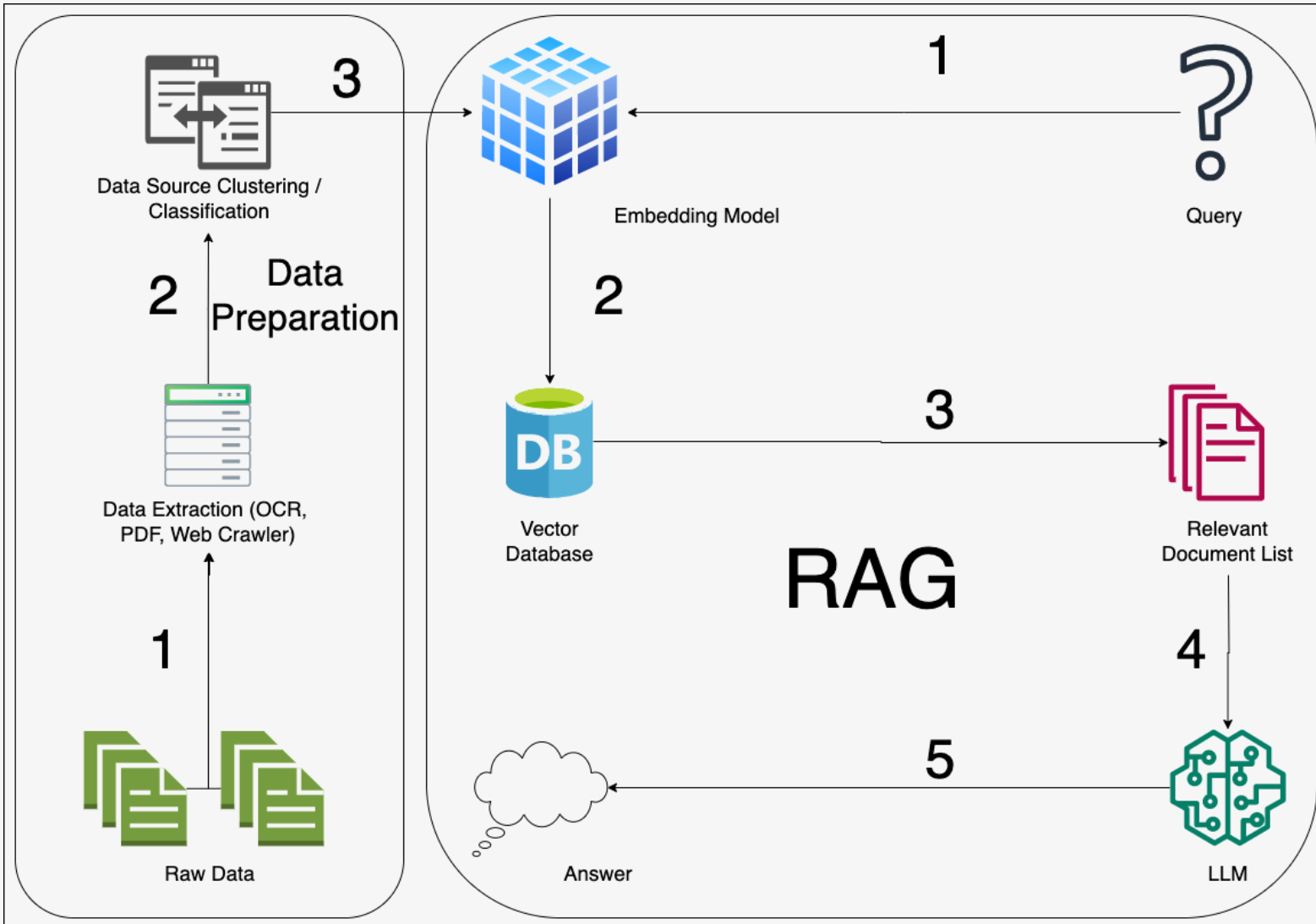
LLM and AI Agents

Large Language Model Tuning Strategy



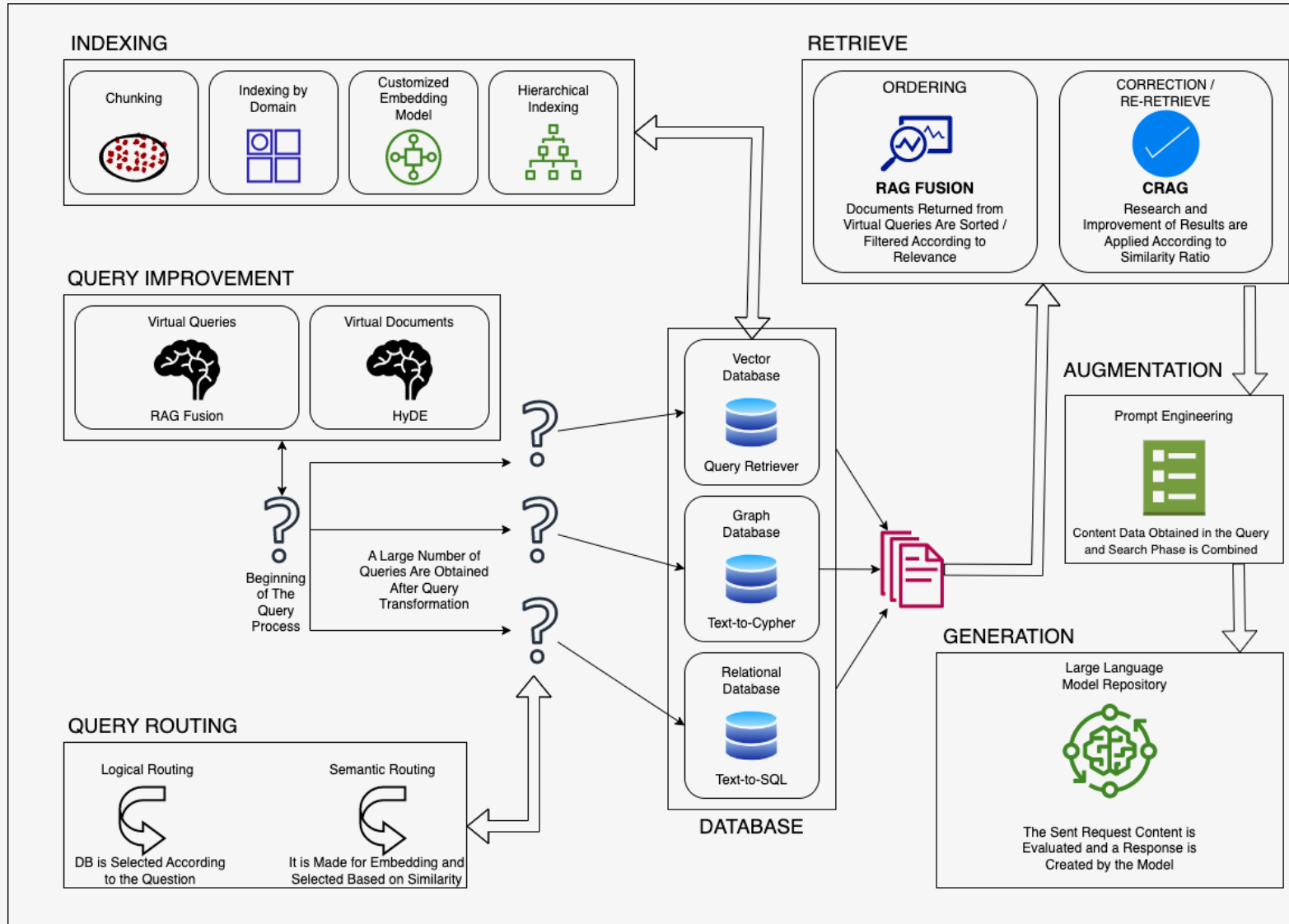
LLM and AI Agents

'Retrieval Augmented Generation', RAG



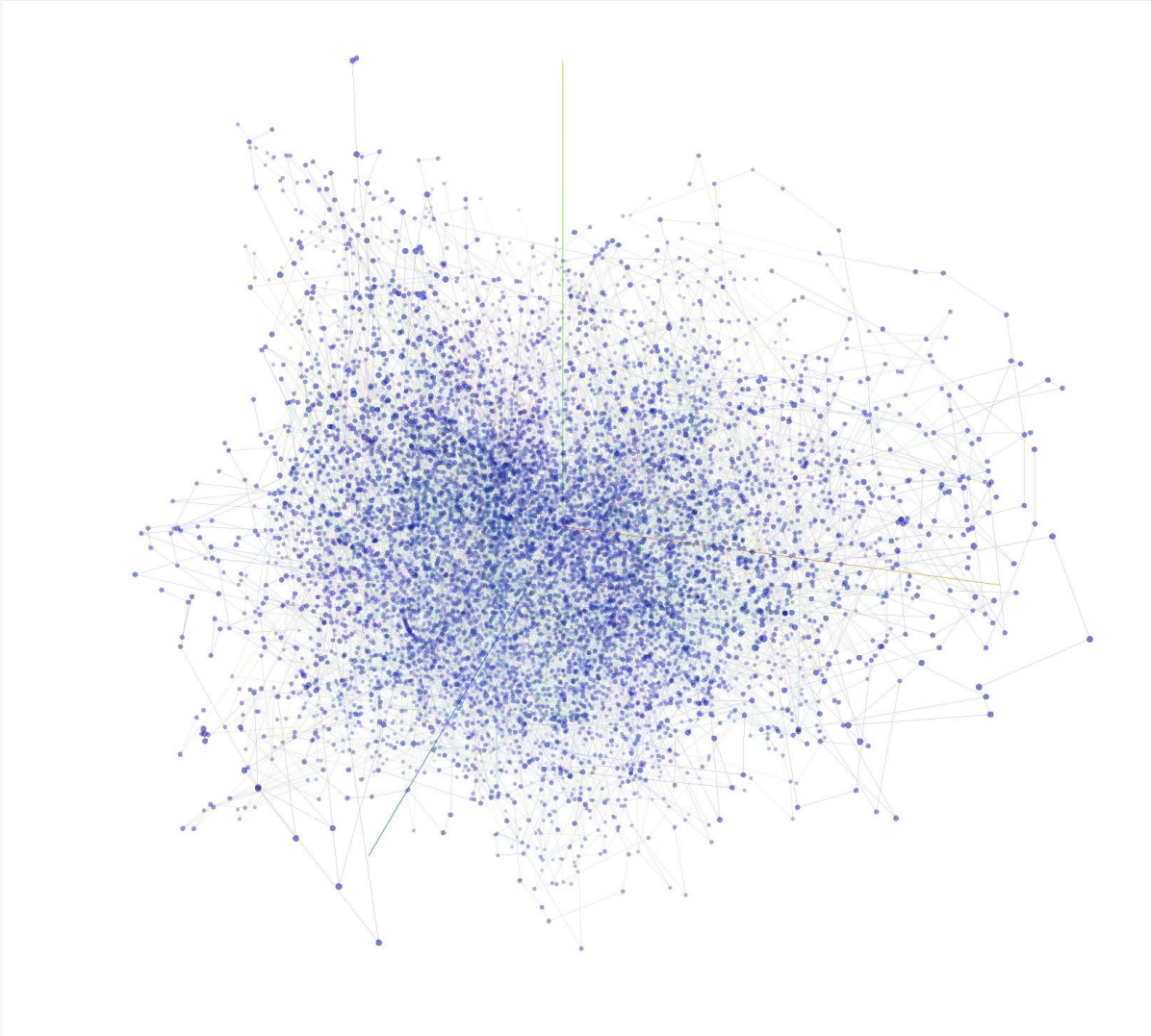
LLM and AI Agents

Complex and Advanced RAG Systems



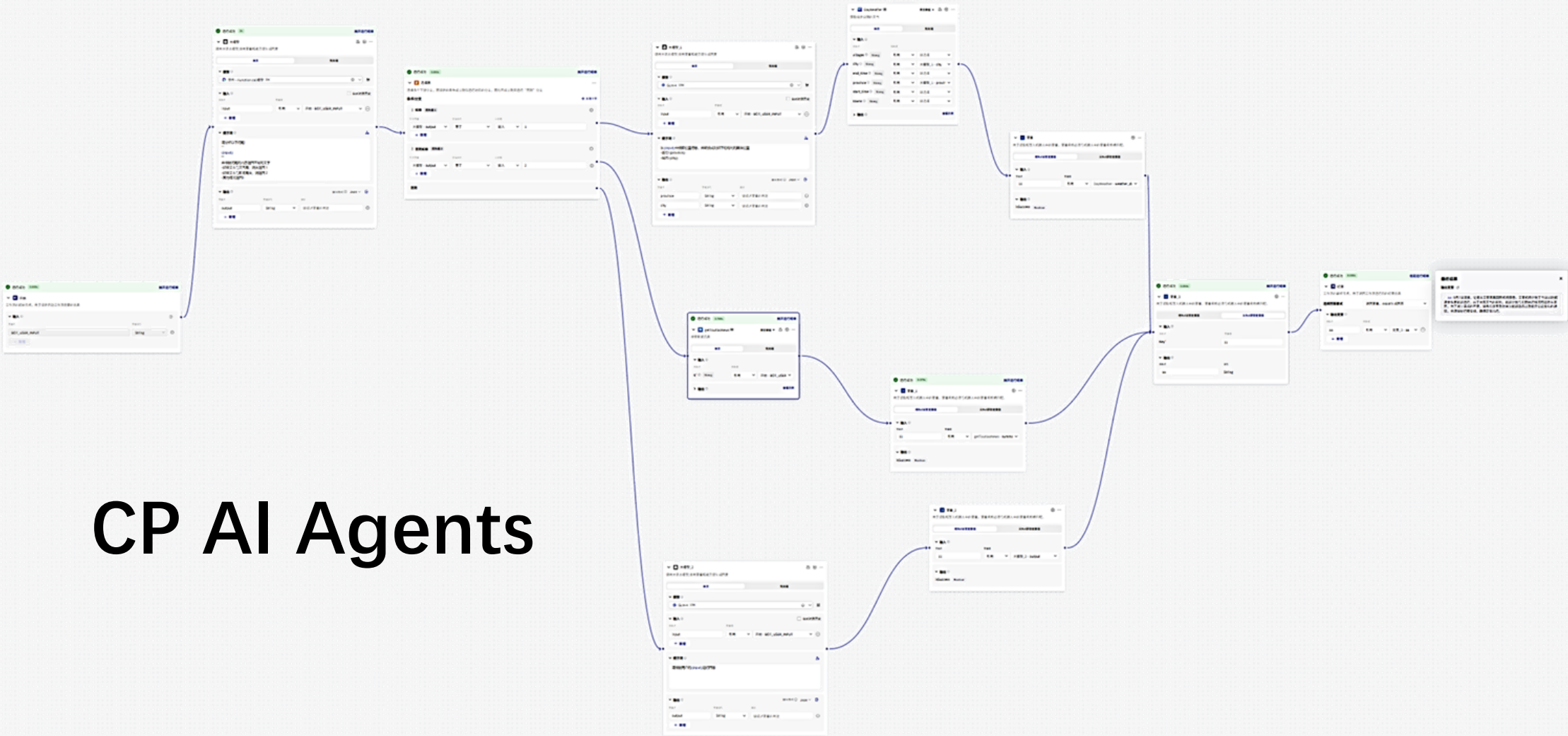
LLM and AI Agents

Visualization of operations on embedded vectors

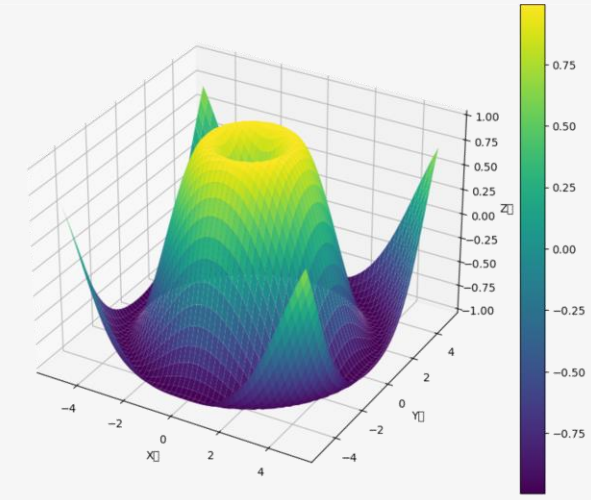
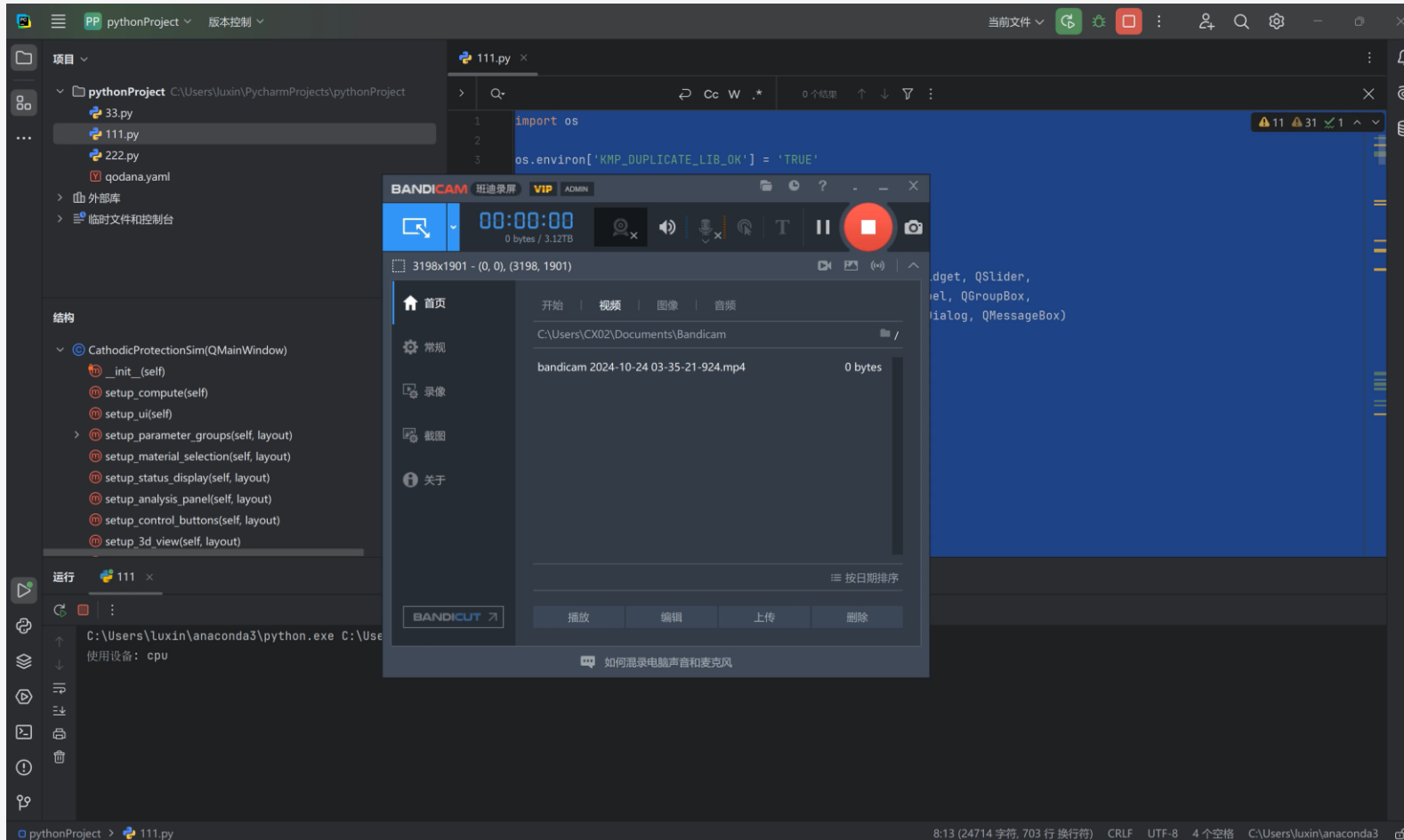


LLM and AI Agents

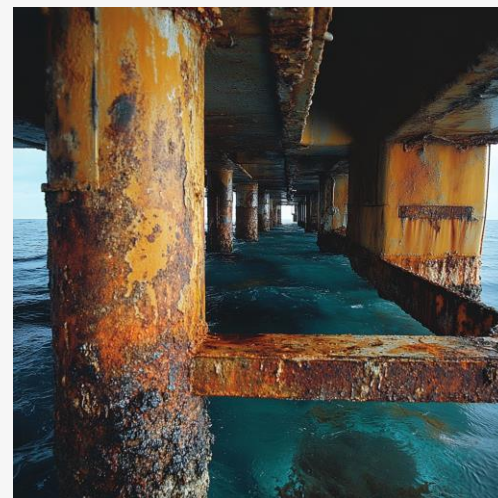
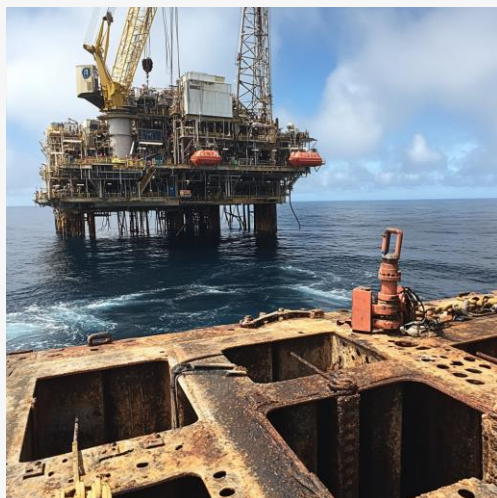
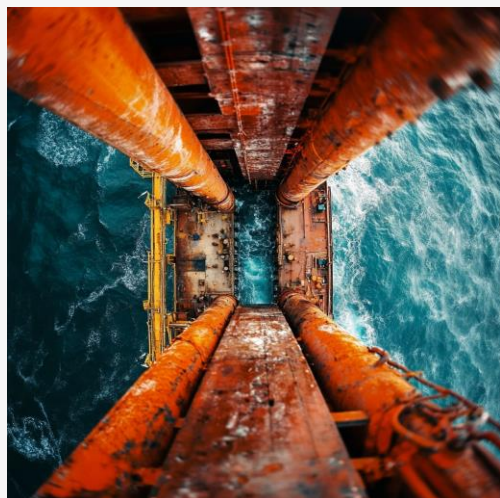
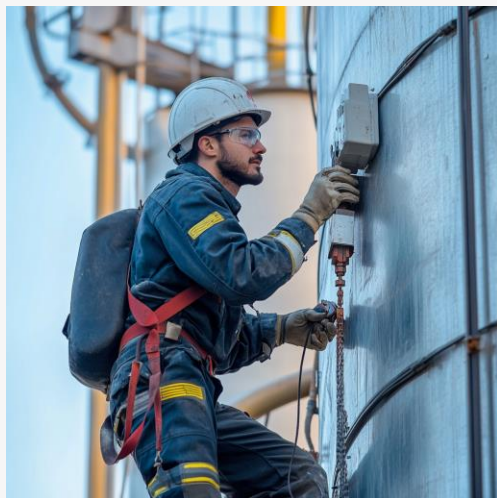
CP AI Agents



AI-assisted coding in CP



AI-assisted image generation for CP



Forecast and Outlook

My friend is coming to San Francisco and I want to watch the sunrise with him at the Golden Gate Bridge tomorrow morning. We'll be coming from Pacific Heights. Could you find us a great viewing spot, check the drive time and sunrise time, then set up a calendar event that gives us enough time to get there?

Send



FIRST JOINT WEBINAR WEEK IN NOVEMBER 2024

Thank You
For Watching

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