



GoEdge.ai
優智能股份有限公司

AI 智造驅動決策/生成平台

AI-driven decision-making and generation platform for smart manufacturing

CEO 陳建志 John



From NYCU in 2021

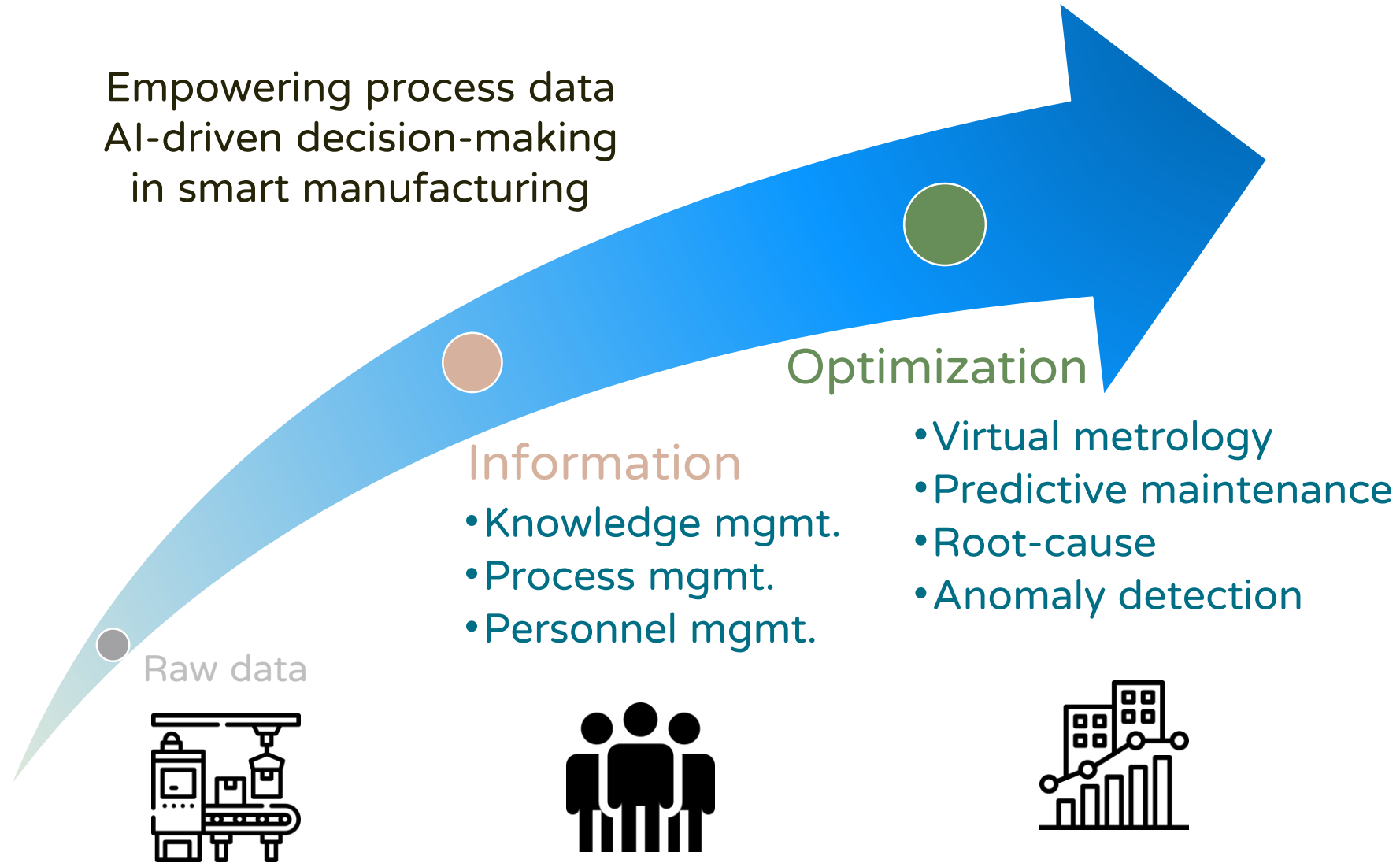
AI tool development and system integration

Digital transformation for the manufacturing industry



From data insights to human-centered process optimization

Empowering process data
AI-driven decision-making
in smart manufacturing



Challenges in manufacturing AI landing



GoEdge.ai

IT engineers

管理數據集成和維護IT基礎設施，確保運作穩定性

Process engineers

定義與確認製程監控和優化的問題

數據分析與場域參數調校

Data analysis and field parameter tuning

- 跨越不同專業領域溝通成本
Communication costs across different professional fields

滾動式資料佈署

Rolling data analytics platform

- 建立、整合與維護多系統增加IT專業人員需求
Increasing IT engineering demands for establishing, integrating, and maintaining multiple systems

知識傳承與數據化

Knowledge transfer and digitization

- 經驗無法累積導致的技術斷層
Technological gaps caused by the inability to accumulate experience

OT engineers

實施儀器和控制系統，用於數據收集和自動化

Data scientists

提供數據洞察和建議，以優化製造過程

設備/製程賦能：數智決策生成平台

Equipment/Process Empowerment: AI-powered decision generation platform



☞ 製程診斷預測與根因分析

Process diagnosis forecasting and root cause analysis

☞ 提升設備稼動率/生產良率

Improving equipment utilization rate/production yield rate

IT engineers

管理數據集成和維護IT基礎設施，確保運作穩定性

Process engineers

定義與確認製程監控和優化的問題

Factory Edge-AI
滾動式數據分析平台

OT engineers

實施儀器和控制系統，用於數據收集和自動化

Data scientists

提供數據洞察和建議，以優化製造過程



成功案例：8 小時滾動式異常預判斷 (8-hour Anomaly Rolling Prediction)

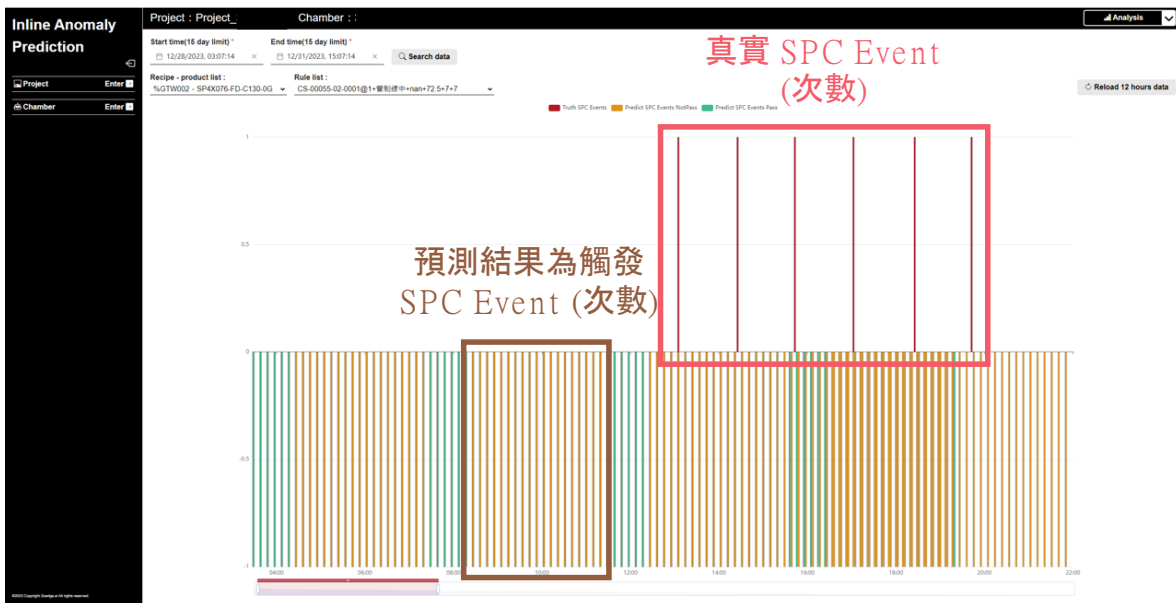
8-hour-rolling process anomaly prediction and diagnoses

Based on production capacity, yield rate and tool status

Complete root cause analysis, troubleshooting and scheduling recommendations will be provided to improve the manufacturing processes.

8 小時前預測與滾動排程

8-hour forecasting and rolling scheduling



機台管制線預測分析總表

control line forecasting and analysis summary

Project : Test Chamber

Start time(15 day limit) 03/07/2024, 06:09:10 End time(15 day limit) 03/07/2024, 18:09:10

顯示 10 條結果

Recipe - Product	Rule (CharaID@Layer+SPCRule+UCL+LCL+ConsiderPoints+ApplyPoints)	
%GTW002 - SP4X076-FD-C130-0G	CC-00124-0247759+管制線外+70 (0-30 0+1+1	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-02-0001@1+管制線中+72.5+nan+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-02-0001@1+管制線中+72.578+nan+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-02-0001@1+管制線中+nan+72.5+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-03-0001@1+管制線中+nan+72.578+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-02-0001@1+控場+nan+nan+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-03-0001@1+控場+nan+nan+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00001-03-0005@1+控場+nan+nan+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00003-03-0053@X+控場+nan+nan+7+7	
%GTW002 - SP4X076-FD-C130-0G	CS-00003-03-0054@X+控場+nan+nan+7+7	

顯示第 1 至 10 條結果，共 17 條

製程產品管理

Recipe mgmt.

Project list

Please click on a single row to enter.

顯示 10 條結果

No.	Chamber ID	name	ID	name	function
1	3A	Project_3A	Project_3	EPI	
2	3C	Project_3C	Project_3	EPI	
3	3C	Project_3C	Project_3	EPI	
4	3T	Project_3T	Project_3	EPI	

顯示第 1 至 4 條結果，共 4 條

設備製程管理

Equipment/process mgmt.

Chamber-ID: ID:SARASAP - Recipe list

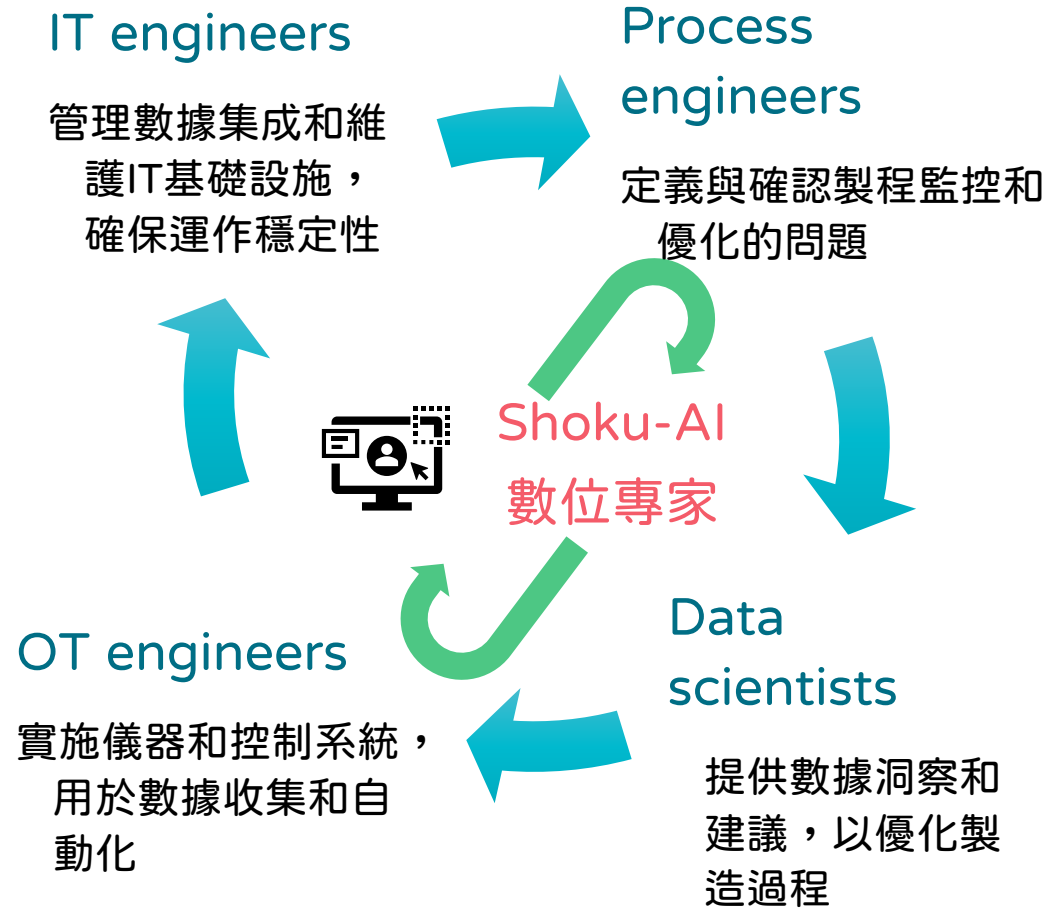
顯示 10 條結果

No.	name	id	function
1	14X02016	14X02016	
2	14XAC006_RES	14XAC006_RES	
3	14XAB_25	14XAB_25	
4	VIS_4.8_45_B	VIS_4.8_45_B	
5	VIS_HV_32V	VIS_HV_32V	
6	VIS_5.7_45_B	VIS_5.7_45_B	
7	POLY_PP_APR0H	POLY_PP_APR0H	
8	AP_TCS_INTRO0AM	AP_TCS_INTRO0AM	

顯示第 1 至 8 條結果，共 8 條

知識系統化：驅動設計研發流程優化

Knowledge Systematization: Driving design and R&D process optimization



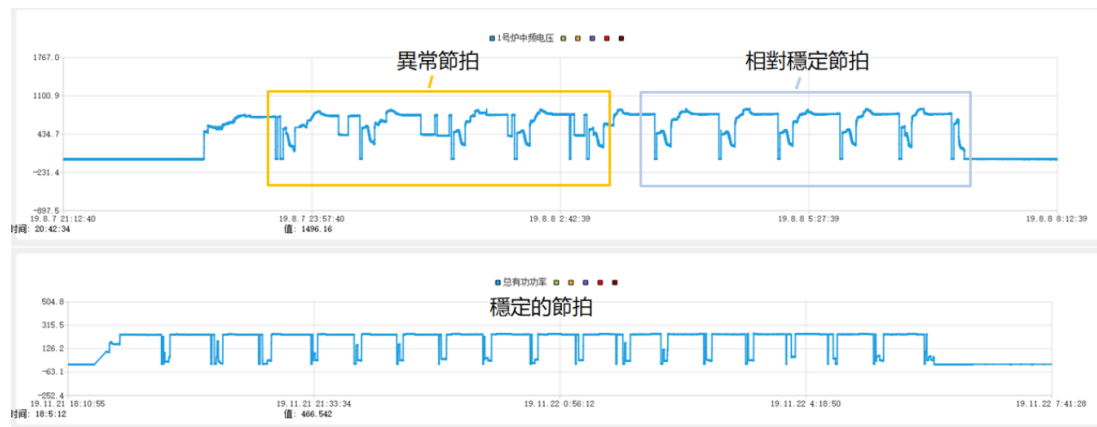
- 🔗 Cycle Time reduction
- 🔗 Production design analysis



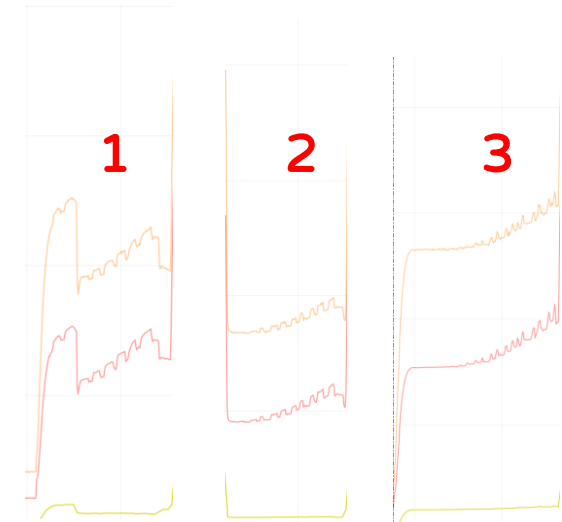
成功案例：鑄造業產線優化

Foundry production line optimization

- IoT data of induction heater
 - Optimal melting production steps can be identified
 - Any anomalies during manual operations, warnings will be issued.
- Digitizing and standardizing the production steps



製程步驟識別
Step classification



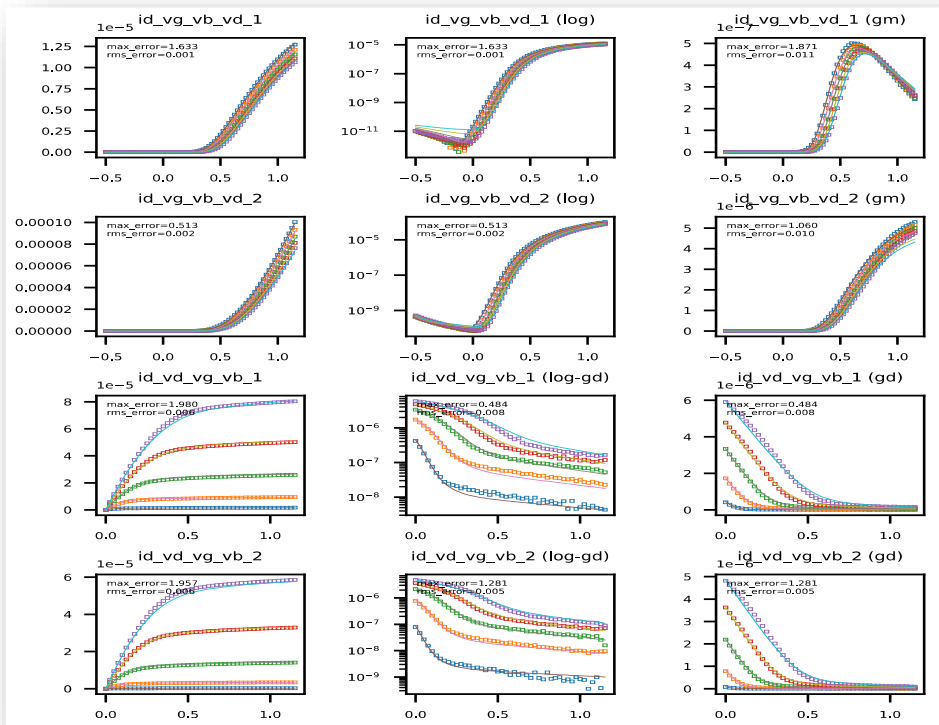
製程異常偵測
Anomaly detection

成功案例：高速參數擬合

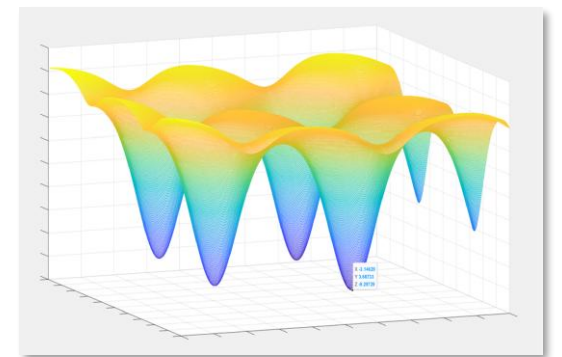
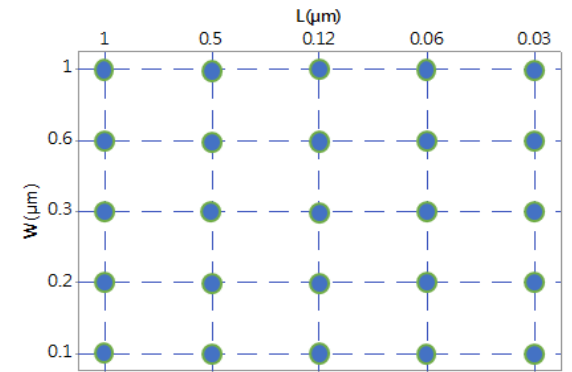
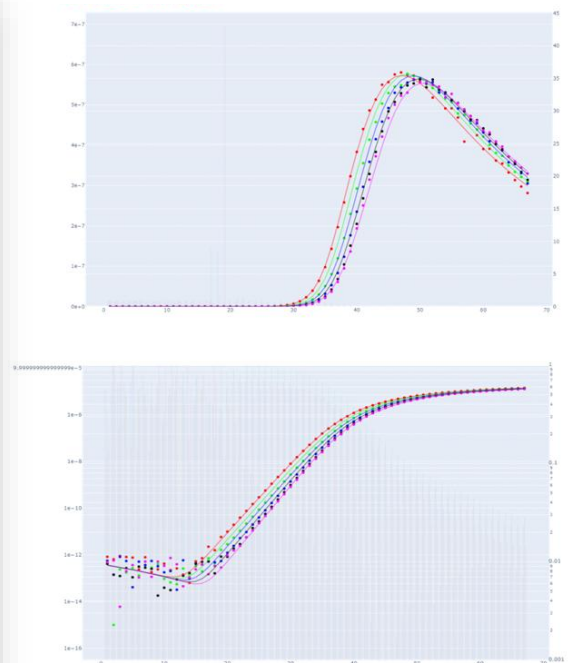
High-performance Parameter Extraction

To transform an IC design schematic diagram to manufacturing processes, MOSFET SPICE models for circuit simulation must be developed to extract the key parameters. Goedge.ai created Shoku-AI™ (Intelligent Adjuster) based to extend functionalities of SPICE (also applies to other simulation tools). With it, the parameter extraction that originally required semi-manual adjustment by professional semiconductor engineers was shortened to 8 hours (original need 7 days).

Results of BSIM Aid (Report Generated automatically)



High-performance Parameter Extraction

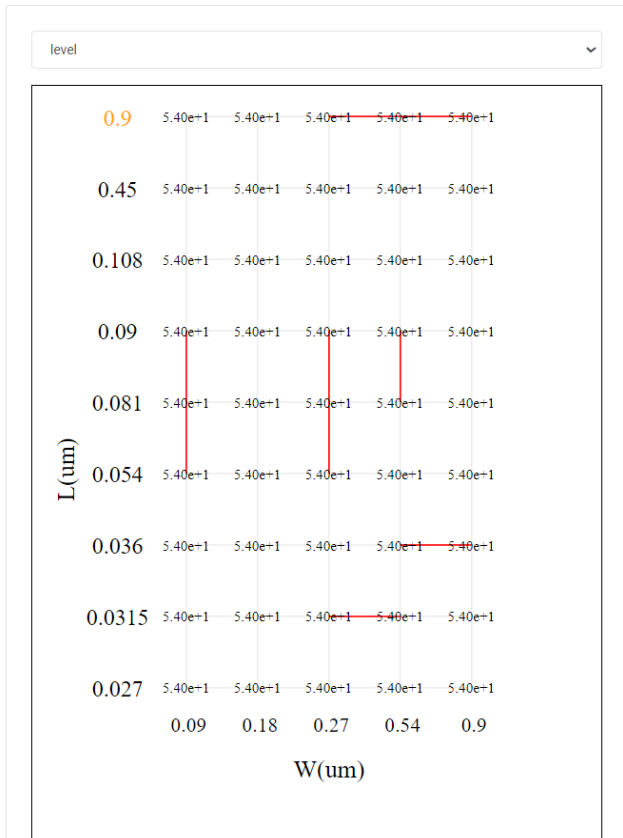
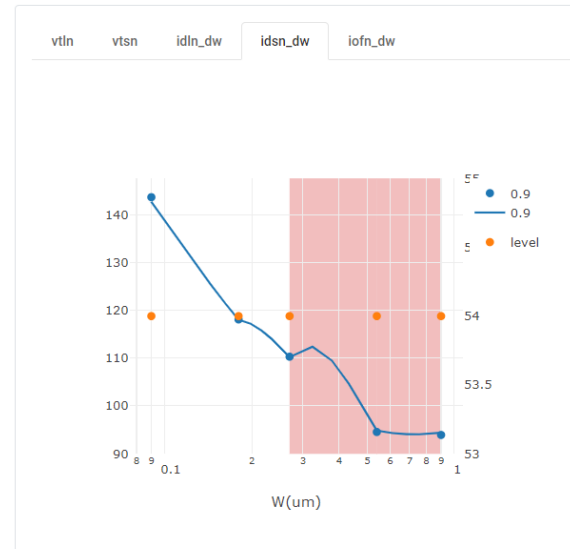
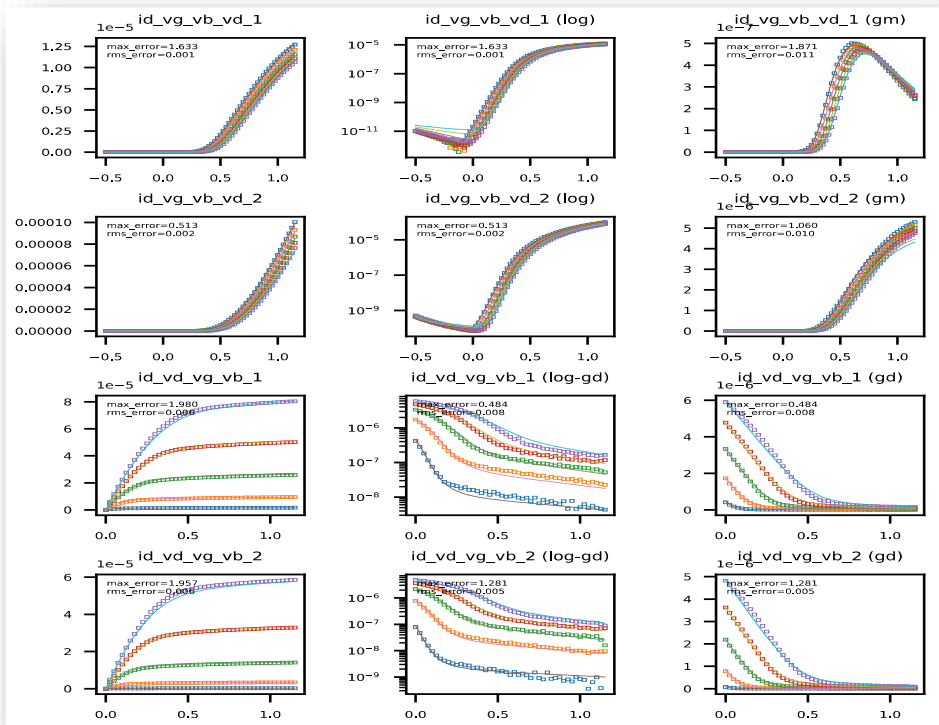


成功案例：高速參數擬合

High-performance Parameter Extraction

To transform an IC design schematic diagram to manufacturing processes, MOSFET SPICE models for circuit simulation must be developed to extract the key parameters. Goedge.ai created Shoku-AI™ (Intelligent Adjuster) based to extend functionalities of SPICE (also applies to other simulation tools). With it, the parameter extraction that originally required semi-manual adjustment by professional semiconductor engineers was shortened to 8 hours (original need 7 days).

Results of BSIM Aid (Report Generated automatically)



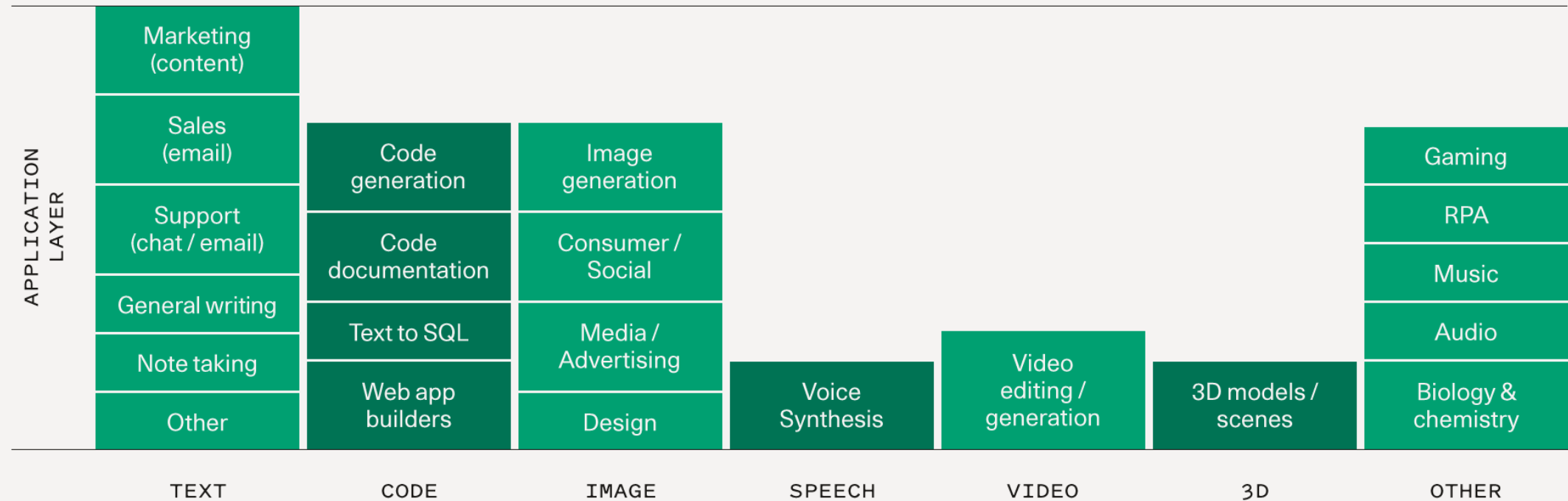


數據解析顧問：Nexus-AI

Powered by LLM

Generative AI: A Creative New World

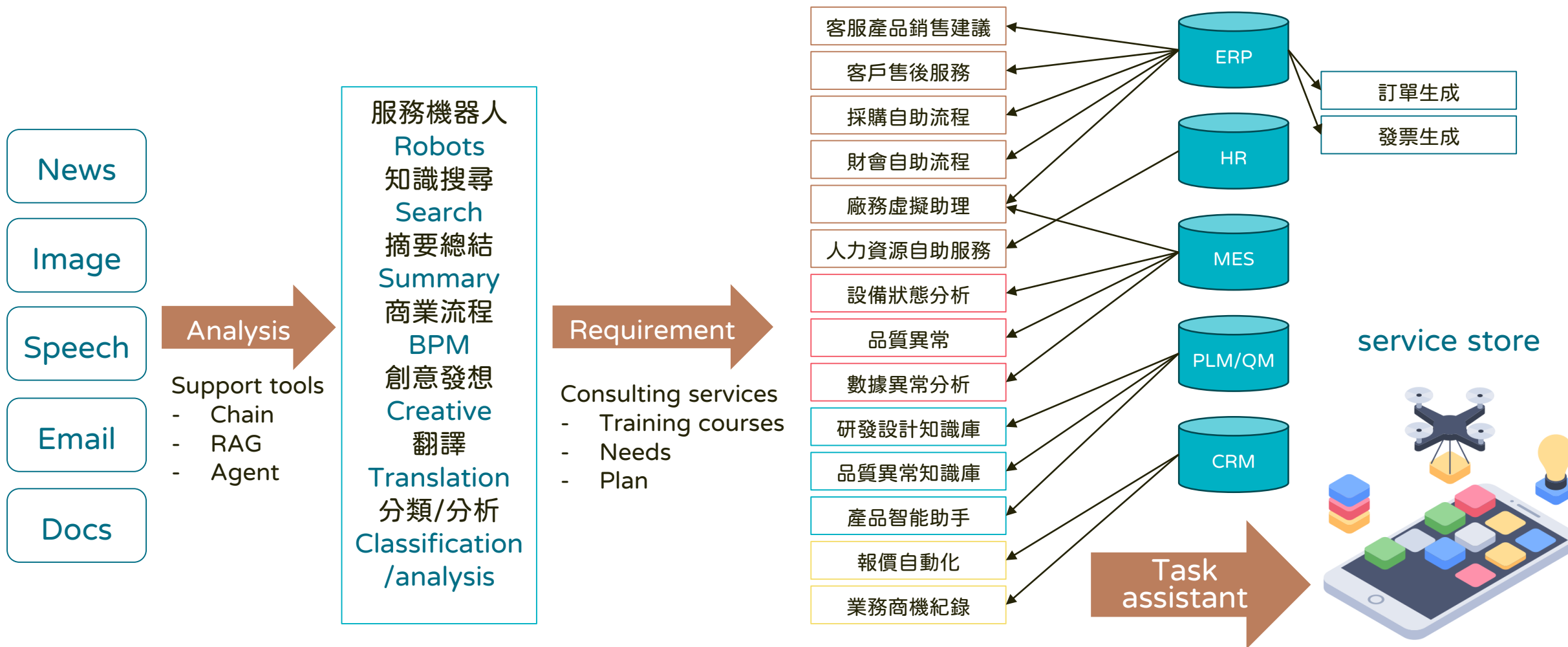
The Generative AI Application Landscape



Source: [Generative AI: A Creative New World](#)

任務梳理到建立任務助理

From task analysis to accomplish task assistant



主題型功能應用 Functional themes

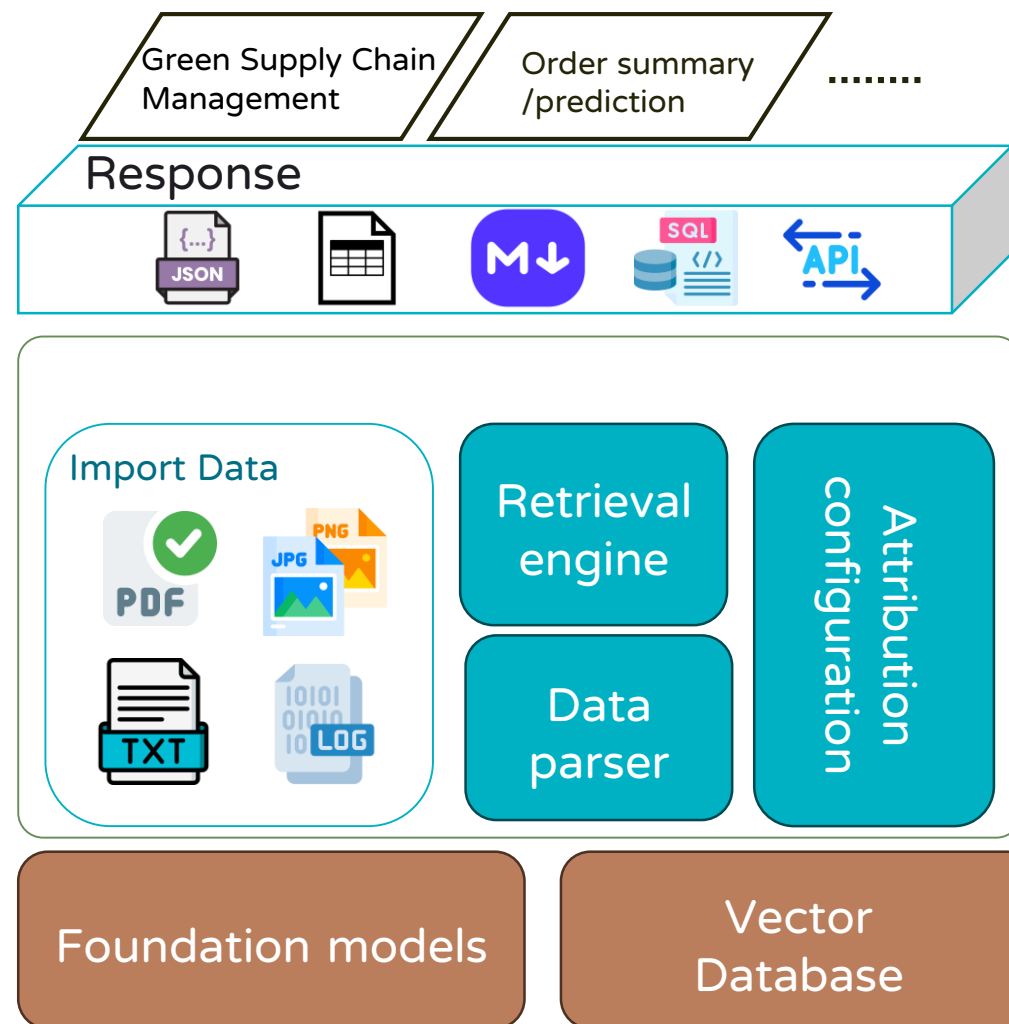
輸入型主題 (InputMaster)

Automating data entry with generative AI to reduce human errors

UserDefined
Configurable
RAG/Tools

分析型主題 (InsightPro)

Providing data analysis and insights with generative AI to optimize decision-making



主題型功能應用 Functional themes

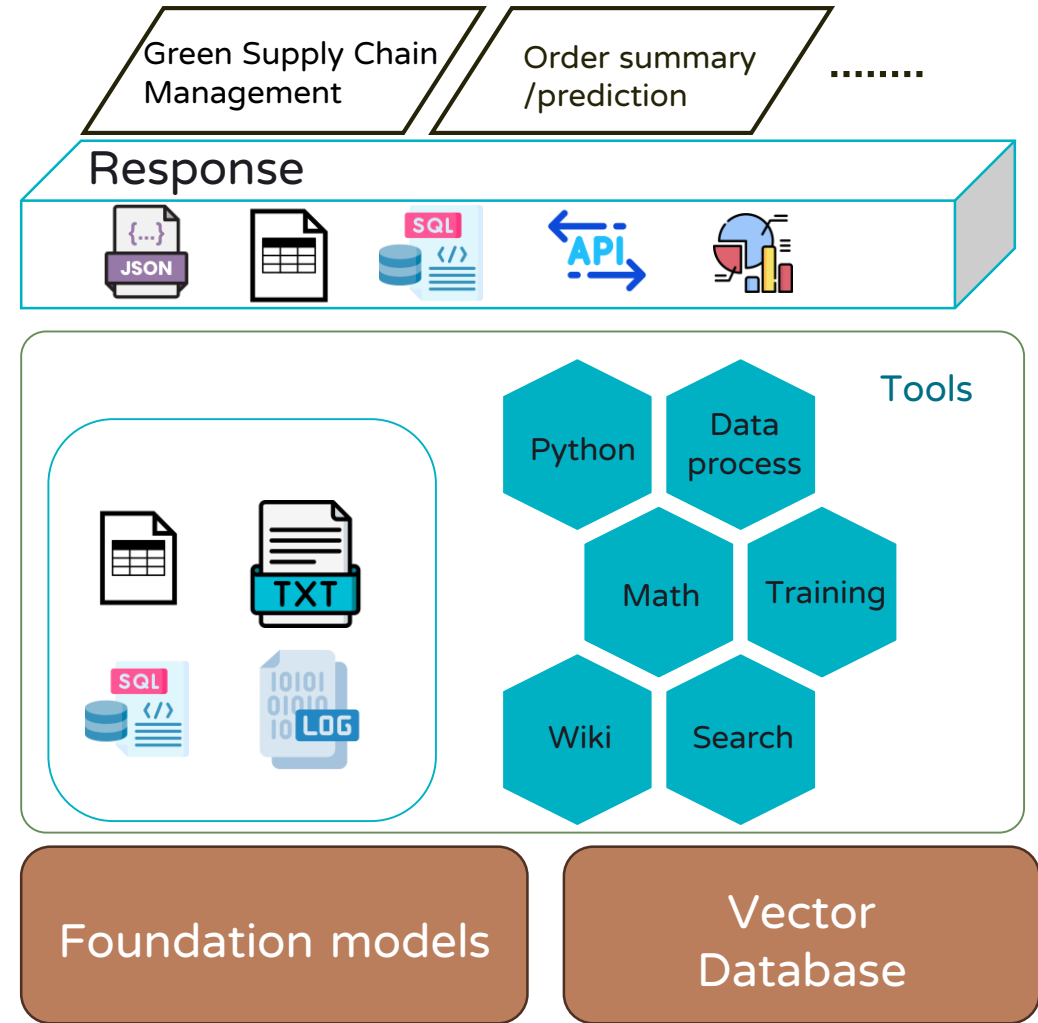
輸入型主題 (InputMaster)

Automating data entry with generative AI to reduce human errors

UserDefined
Configurable
RAG/Tools

分析型主題 (InsightPro)

Providing data analysis and insights with generative AI to optimize decision-making



多樣性資料格式 Diverse table formats

Section 03 Composition and Information on Ingredients 成分辨識資料		
中英文名稱 Appellation	LEAD FRAME 導線架	
同義名稱 Synonymous	-	
Chemical Ingredients 化學成分	CAS Number 化學文摘社編號	Percent Weight (%) 重量百分比
Copper (Cu) 銅	7440-50-8	84.34-97.77 (Balance)
Nickle (Ni) 鎳	7440-02-0	1.97 ~ 4.09
Silicon (Si) 矽	7440-21-3	0.22 ~ 1.17
Magnesium (Mg) 鎂	7439-95-4	0.04 ~ 0.30
Silver (Ag) 銀	7440-22-4	10.1 Max.

```
[
{"化學成分": "銅", "化學文摘社號碼": "7440-50-8", "濃度": "84.34-97.77"},
{"化學成分": "鎳", "化學文摘社號碼": "7440-02-0", "濃度": "1.97 ~ 4.09"},
{"化學成分": "矽", "化學文摘社號碼": "7440-21-3", "濃度": "0.22 ~ 1.17"},
{"化學成分": "鎂", "化學文摘社號碼": "7439-95-4", "濃度": "0.04 ~ 0.30"},
{"化學成分": "銀", "化學文摘社號碼": "7440-22-4", "濃度": "10.1 Max."}
]
```

1

三、成分辨識資料
純物質：

中英文名稱：N/A
同義名稱：N/A
化學文摘社登記號碼(CAS No.)：N/A
危害成分(成分百分比)：N/A
混合物：

multi-page

安全資料表

危害成分中之英文名稱	化學文摘社登記號碼 (CAS No.)	濃度或濃度範圍 (成分百分比)
醋酸 Acetic Acid	64-19-7	<70%
硝酸 Nitric Acid	7697-37-2	<10%
磷酸 Phosphoric Acid	7664-38-2	<30%
鹽類添加劑	/	<10%

```
[
{"化學成分": "醋酸", "化學文摘社號碼": "64-19-7", "濃度": "<70%"},
{"化學成分": "硝酸", "化學文摘社號碼": "7697-37-2", "濃度": "<10%"},
{"化學成分": "磷酸", "化學文摘社號碼": "7664-38-2", "濃度": "<30%"},
{"化學成分": "鹽類添加劑", "化學文摘社號碼": "N/A", "濃度": "<10%"}
]
```

3

三、成分辨識資料
混合物：

化學性質：烷類		
危害成分之中文名稱	化學文摘社登記號碼 (CAS NO.)	濃度 (成分百分比)
丁烷 (n-BUTANE & i-BUTANE)	106-97-8	20~80 ²
丙烷 (PROPANE)	74-98-6	80~20 ²
乙硫醇 ^{*1} (ETHYL MERCAPTAN)	75-08-1	> 20ppmw
同義名稱	-	

* 1：乙硫醇為加臭用臭劑，適用於添加至高辛烷值液體燃料、家庭用及須提供洩漏警訊之工業用燃料。依 CNS12951，(未)添加臭劑之液化石油氣須於容器張貼或以紅字書寫「(未)添加臭劑」之標籤。

* 2：實際產品規範符合 CNS 12951, K5141 國家標準。

```
[
{"化學成分": "丁烷", "化學文摘社號碼": "106-97-8", "濃度": "20-80%"},
{"化學成分": "丙烷", "化學文摘社號碼": "74-98-6", "濃度": "80-20%"},
{"化學成分": "乙硫醇", "化學文摘社號碼": "75-08-1", "濃度": ">20ppmw"}
]
```

2

Annotation

InputMaster 應用

SDS/MSDS for green supply chain assurance

物質安全資料表(MSDS)

一、物品與廠商資料

1.1 物品名稱: 鮮豔染料 S-846
 1.2 其他名稱: -
 1.3 建議用途及限制使用: 染料
 1.4 製造商或供應商名稱、地址及電話:
 1.5 緊急聯絡電話/ 傳真電話:

二、危害辨識資料

2.1 危險性分類: -
 2.2 標示內容:
 象形符號: -
 警示語: -
 危害警告訊息: -
 物理性及化學性危害: -
 危害防範措施: -
 2.3 其他危害: -

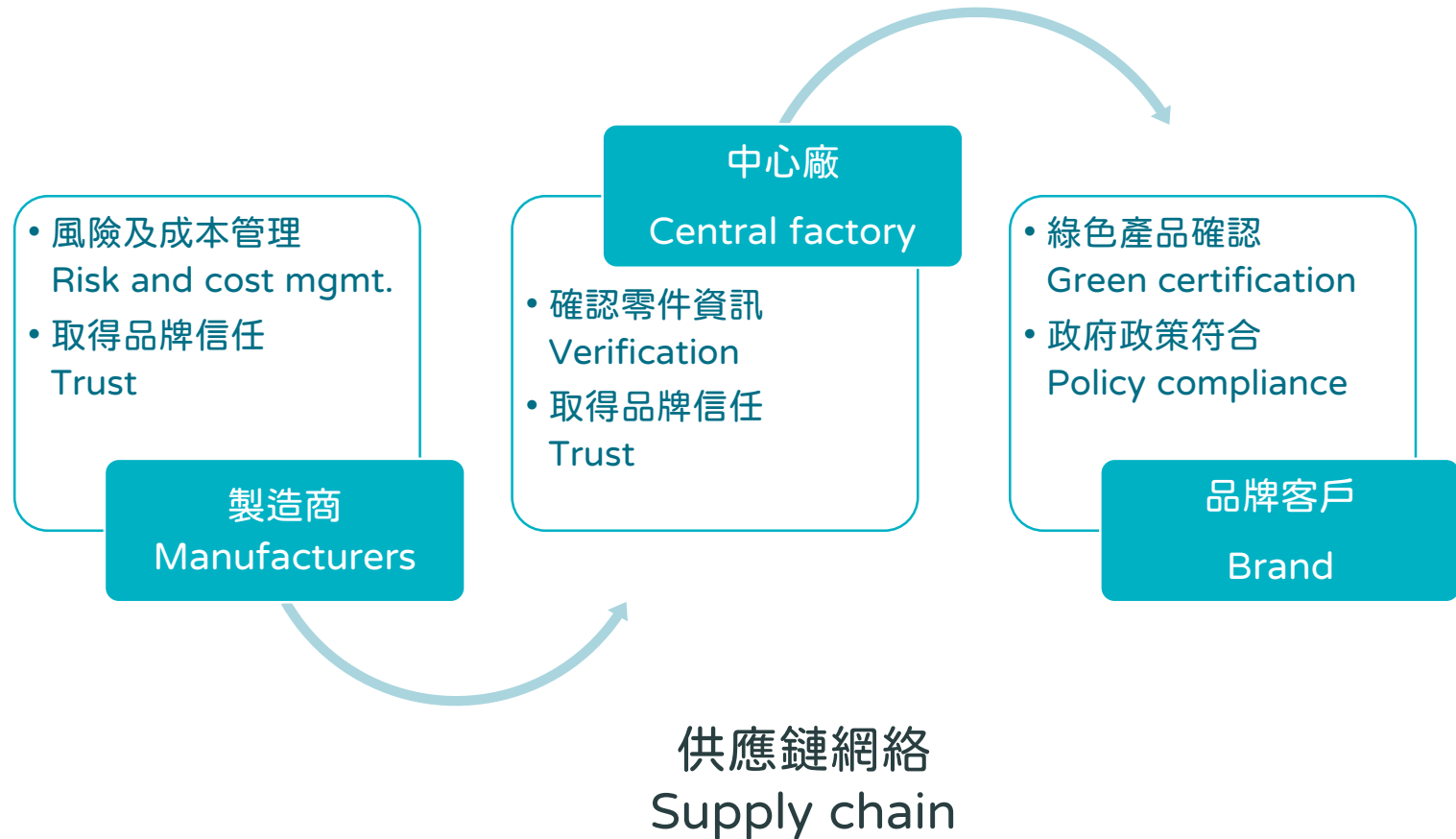
三、成分辨識資料

化學類別	-		
物質成份	CAS Number	%	
特殊改性有機矽	-	30	
水	7732-18-5	70	

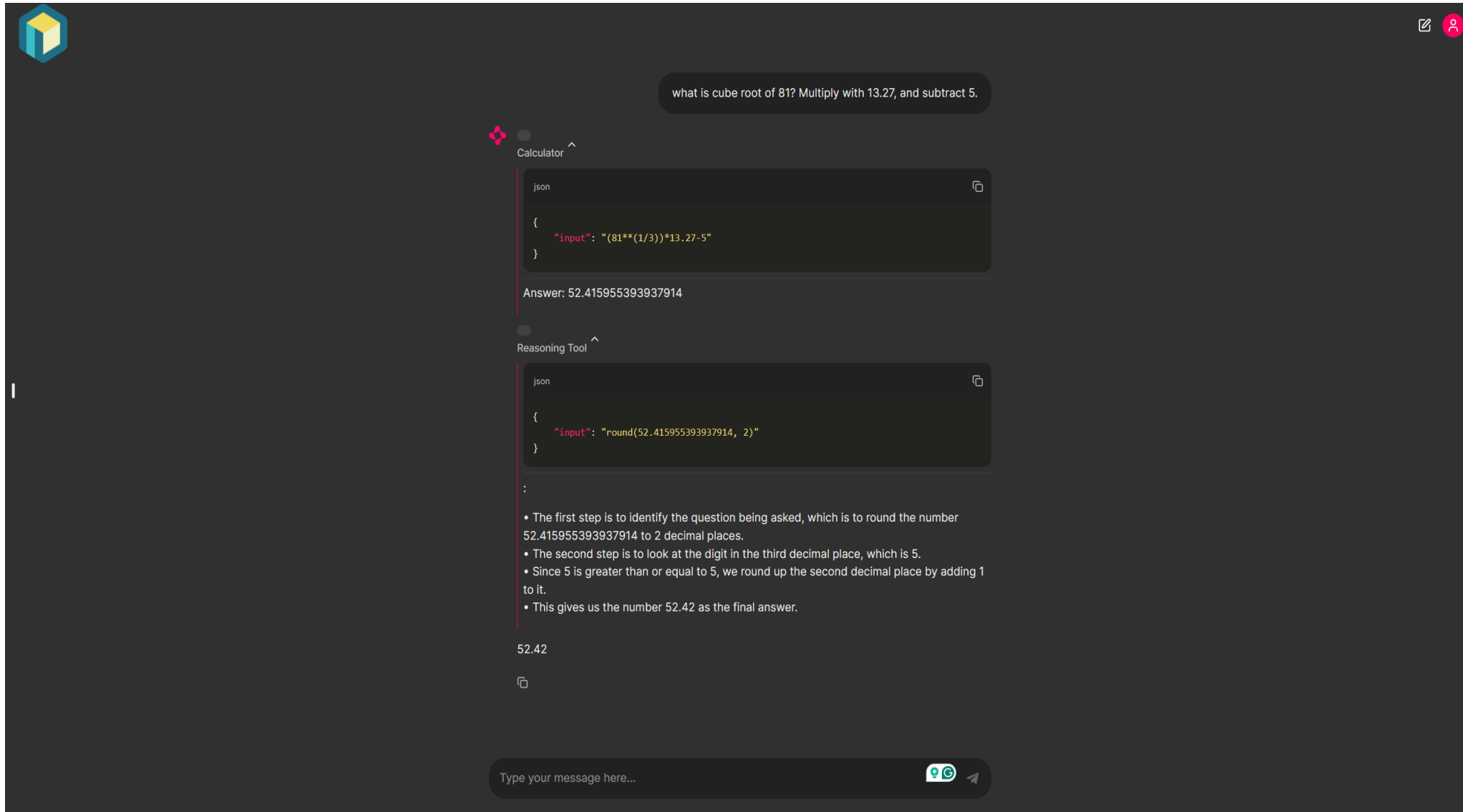
四、急救措施

4.1 不同暴露途徑之急救方法:
 吸 入: 無害症狀。
 皮膚接觸: 無害症狀。
 眼睛接觸: 立即以水沖洗眼睛 15 分以上, 然後接受醫生治療。
 食 入: 飲用大量水或食鹽水並吐出, 然後就醫。
 4.2 最重要症狀及危害效應: 無相關資料。
 4.3 對急救人員之防護: 無相關資料。
 4.4 對醫師之提示: 無相關資料。

{“化學成分”: “水”, “化學文摘社號碼”: “7732-18-5”, “濃度”: “70”},
 {“化學成分”: “特殊改性有機矽”, “化學文摘社號碼”: “”, “濃度”: “30”}



InsightPro - Chat with Tools



The screenshot displays a chat interface with a dark background. At the top left is the GoEdge.ai logo. In the top right corner, there are icons for a message and a user profile. The main chat area contains a user message: "what is cube root of 81? Multiply with 13.27, and subtract 5." Below this, two tool outputs are shown. The first is labeled "Calculator" and contains a JSON object:

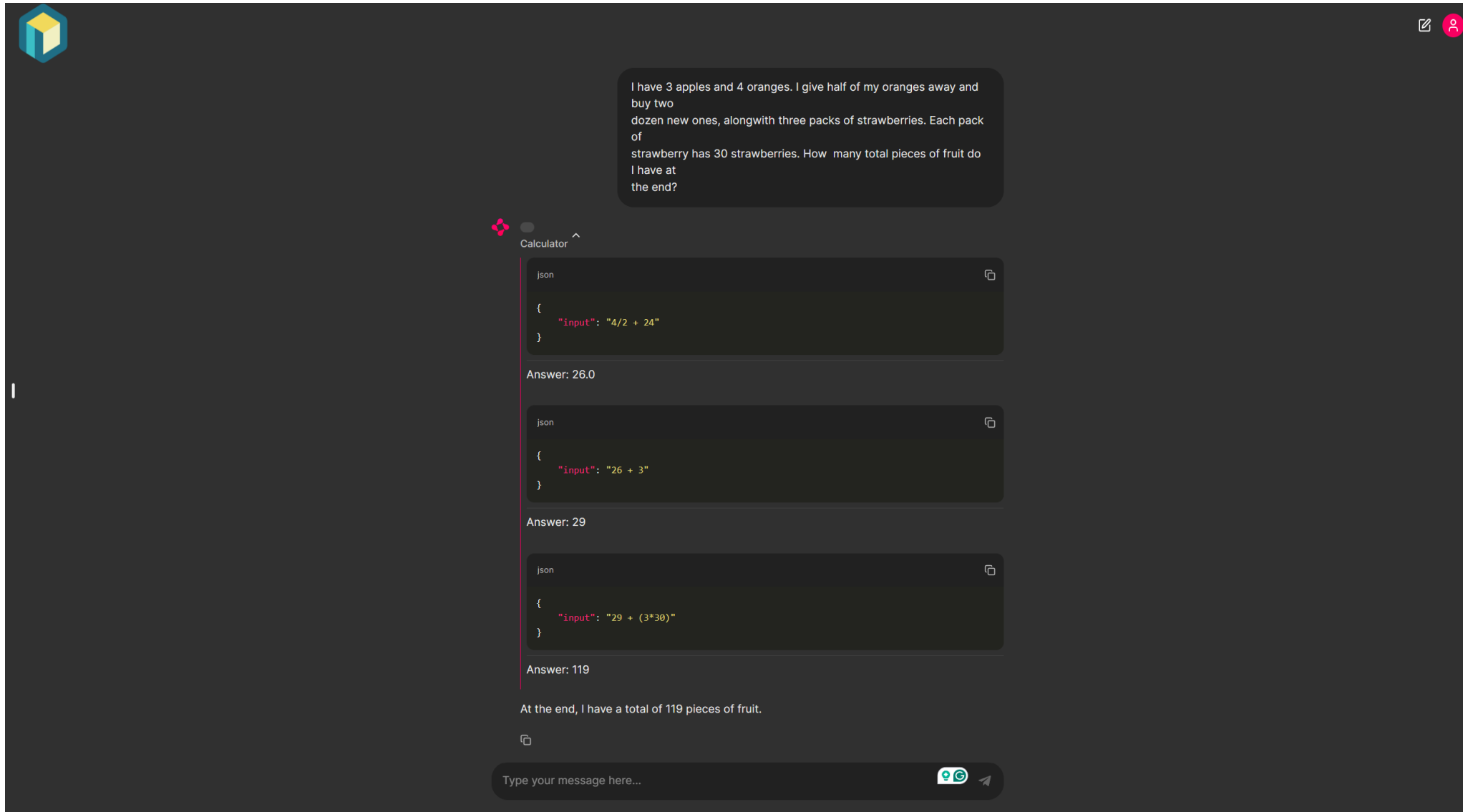
```
{  "input": "(81**(1/3))*13.27-5"}
```

 followed by the text "Answer: 52.4159553937914". The second is labeled "Reasoning Tool" and contains a JSON object:

```
{  "input": "round(52.4159553937914, 2)"}:
```

 followed by a list of four steps explaining the rounding process. Below the reasoning steps is the final answer "52.42". At the bottom of the chat is a text input field with the placeholder "Type your message here..." and a send button.

InsightPro - Chat with Tools



I have 3 apples and 4 oranges. I give half of my oranges away and buy two dozen new ones, alongwith three packs of strawberries. Each pack of strawberry has 30 strawberries. How many total pieces of fruit do I have at the end?

Calculator ^

```
json { "input": "4/2 + 24" }
```

Answer: 26.0

```
json { "input": "26 + 3" }
```

Answer: 29

```
json { "input": "29 + (3*30)" }
```

Answer: 119

At the end, I have a total of 119 pieces of fruit.

Type your message here...



Image or PDF

2,3-二甲基丁烷(2,3-dimethylbutane)	79-29-8	< 4
2-甲基戊烷(2-methylpentane)	107-83-5	10 ~ 15
3-甲基戊烷(3-methylpentane)	96-14-0	10 ~ 15
正己烷(n-hexane)	110-54-3	15 ~ 19
2,2-二甲基戊烷(2,2-dimethylpentane)	590-35-2	1 ~ 5
甲基環戊烷(methylcyclopentane)	96-37-7	7 ~ 11
2,4-二甲基戊烷(2,4-dimethylpentane)	108-08-7	2 ~ 6
3,3-二甲基戊烷(3,3-dimethylpentane)	562-49-2	< 4

Description

This is description

Chat

解析成分

Answer: ``json [{"成分名稱":"2,3-二甲基丁烷","化學文摘社號碼":"79-29-8","最大濃度":4.0,"最小濃度":0,"平均濃度":2.0}, {"成分名稱":"2-甲基戊烷","化學文摘社號碼":"107-83-5","最大濃度":15,"最小濃度":10,"平均濃度":12.5}, {"成分名稱":"3-甲基戊烷","化學文摘社號碼":"96-14-0","最大濃度":15,"最小濃度":10,"平均濃度":12.5}, {"成分名稱":"正己烷","化學文摘社號碼":"110-54-3","最大濃度":19,"最小濃度":15,"平均濃度":17.0}, {"成分名稱":"2,2-二甲基戊烷","化學文摘社號碼":"590-35-2","最大濃度":5,"最小濃度":1,"平均濃度":3.0}, {"成分名稱":"甲基環戊烷","化學文摘社號碼":"96-37-7","最大濃度":11,"最小濃度":7,"平均濃度":9.0}, {"成分名稱":"2,4-二甲基戊烷","化學文摘社號碼":"108-08-7","最大濃度":6,"最小濃度":2,"平均濃度":4.0}, {"成分名稱":"3,3-二甲基戊烷","化學文摘社號碼":"562-49-2","最大濃度":4.0,"最小濃度":0,"平均濃度":2.0}, {"成分名稱":"2-甲基己烷","化學文摘社號碼":"591-76-4","最大濃度":12,"最小濃度":8,"平均濃度":10.0}, {"成分名稱":"2,3-二甲基戊烷","化學文摘社號碼":"565-59-3","最大濃度":6,"最小濃度":2,"平均濃度":4.0}, {"成分名稱":"3-甲基己烷","化學文摘社號碼":"589-34-4","最大濃度":13,"最小濃度":9,"平均濃度":11.0}, {"成分名稱":"正庚烷","化學文摘社號碼":"142-82-5","最大濃度":10,"最小濃度":6,"平均濃度":8.0}]``

key

成分名稱	化學文摘社號碼	最大濃度	最小濃度	平均濃度
2,3-二甲基丁烷	79-29-8	4	0	2
2-甲基戊烷	107-83-5	15	10	12.5
3-甲基戊烷	96-14-0	15	10	12.5
正己烷	110-54-3	19	15	17
2,2-二甲基戊烷	590-35-2	5	1	3
甲基環戊烷	96-37-7	11	7	9
2,4-二甲基戊烷	108-08-7	6	2	4
3,3-二甲基戊烷	562-49-2	4	0	2
2-甲基己烷	591-76-4	12	8	10
2,3-二甲基戊烷	565-59-3	6	2	4
3-甲基己烷	589-34-4	13	9	11



Empower Production Performance

Precise, Fast & Simple

