



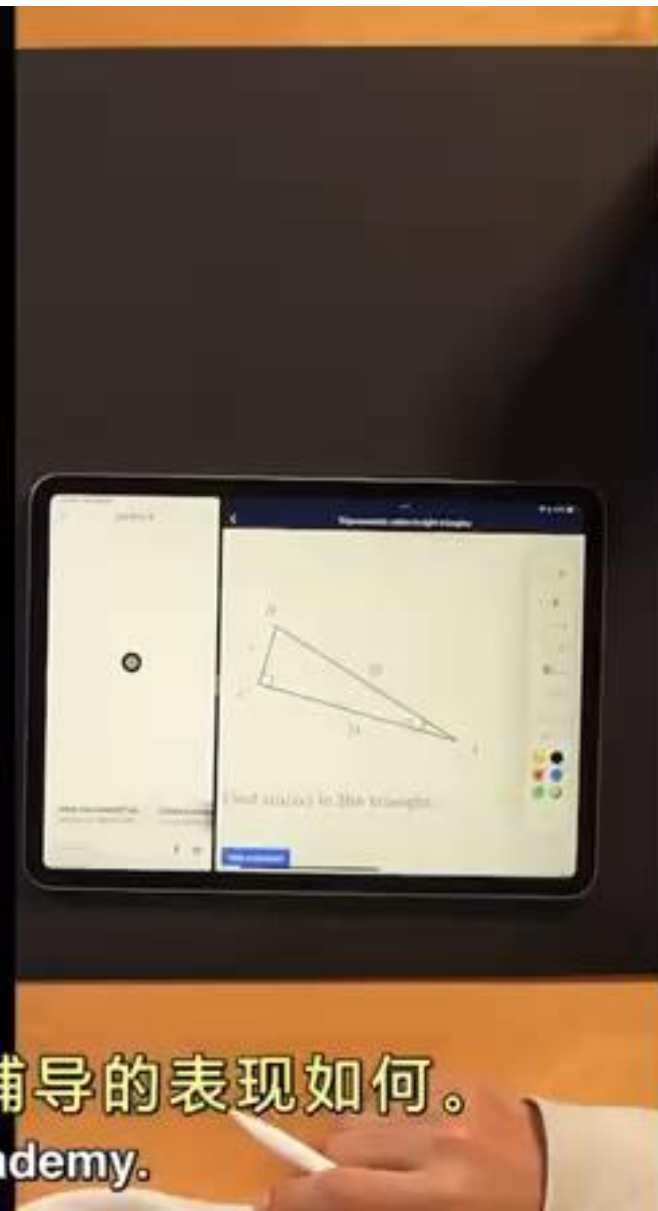
SAP + Microsoft AI 更多创新可能

周吏廷

Azure智能云解决方案资深专家

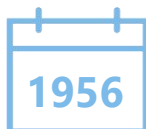
微软中国





我们很好奇这个技术在 Khan 学院上做数学辅导的表现如何。
at tutoring someone in math on Khan Academy.

人工智能的发展路径



1956

人工智能

计算机科学领域，旨在创造能够复制或超越人类智能的智能机器



1997

机器学习

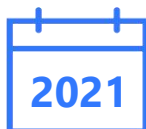
人工智能的子集，使机器能够从现有数据中学习，并改进该数据以做出决策或预测



2017

深度学习

一种使用多层神经网络处理数据并做出决策的机器学习技术



2021

生成式AI

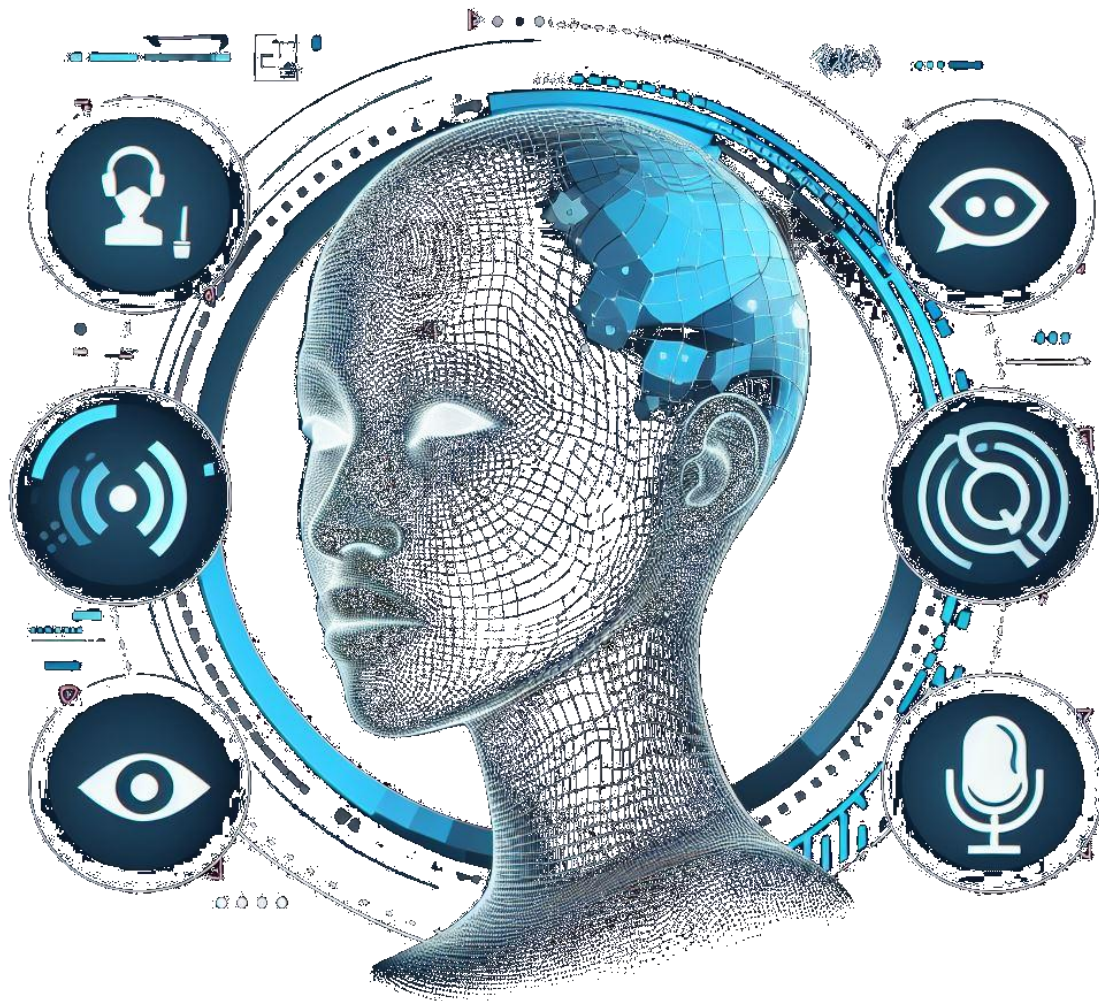
根据提示或现有数据创建新的书面、视觉和听觉内容

多模态大模型已经到来

语言

语音

视觉



从互为客户到AI共创 – 微软和SAP持续的战略伙伴关系

30

30年的伙伴关系



重叠的客户群体，共同服务于很多大型企业



- SAP runs on Microsoft Azure
- Microsoft runs on SAP



持续的生态投入

RISE WITH SAP

微软自身使用SAP RISE驱动业务创新

“我们双方有了无可比拟的机会共同交付下一代 AI 并解锁个人、组织、行业的生产力，包括人力资源领域。”

Satya Nadella
CEO of Microsoft



“多年来，SAP 一直将各种 AI 技术集成在产品中，帮助企业客户加速数字化转型。我们对生成式AI带来的全新机遇感到非常兴奋，与微软的深度技术合作将为用户提供安全、可靠、稳定的生成式 AI 服务。”

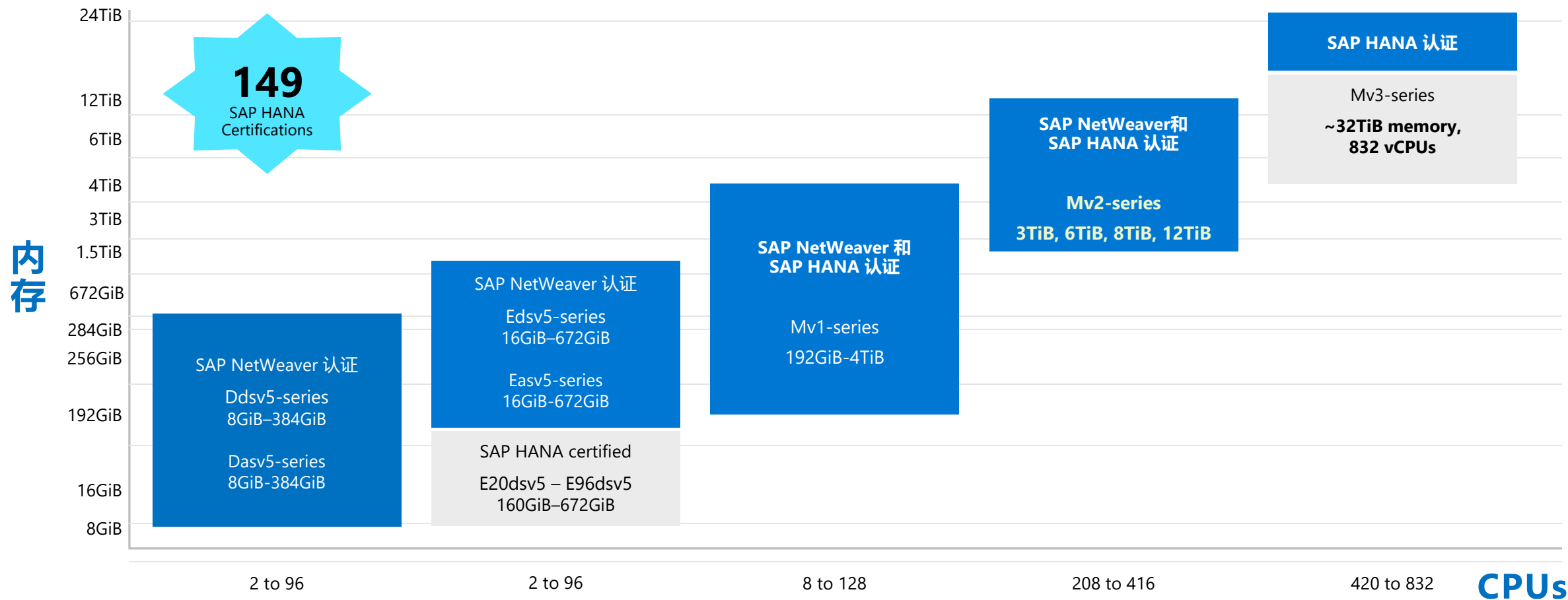
Christian Klein
CEO of SAP SE



Microsoft Azure 是 SAP RISE 信任的云平台

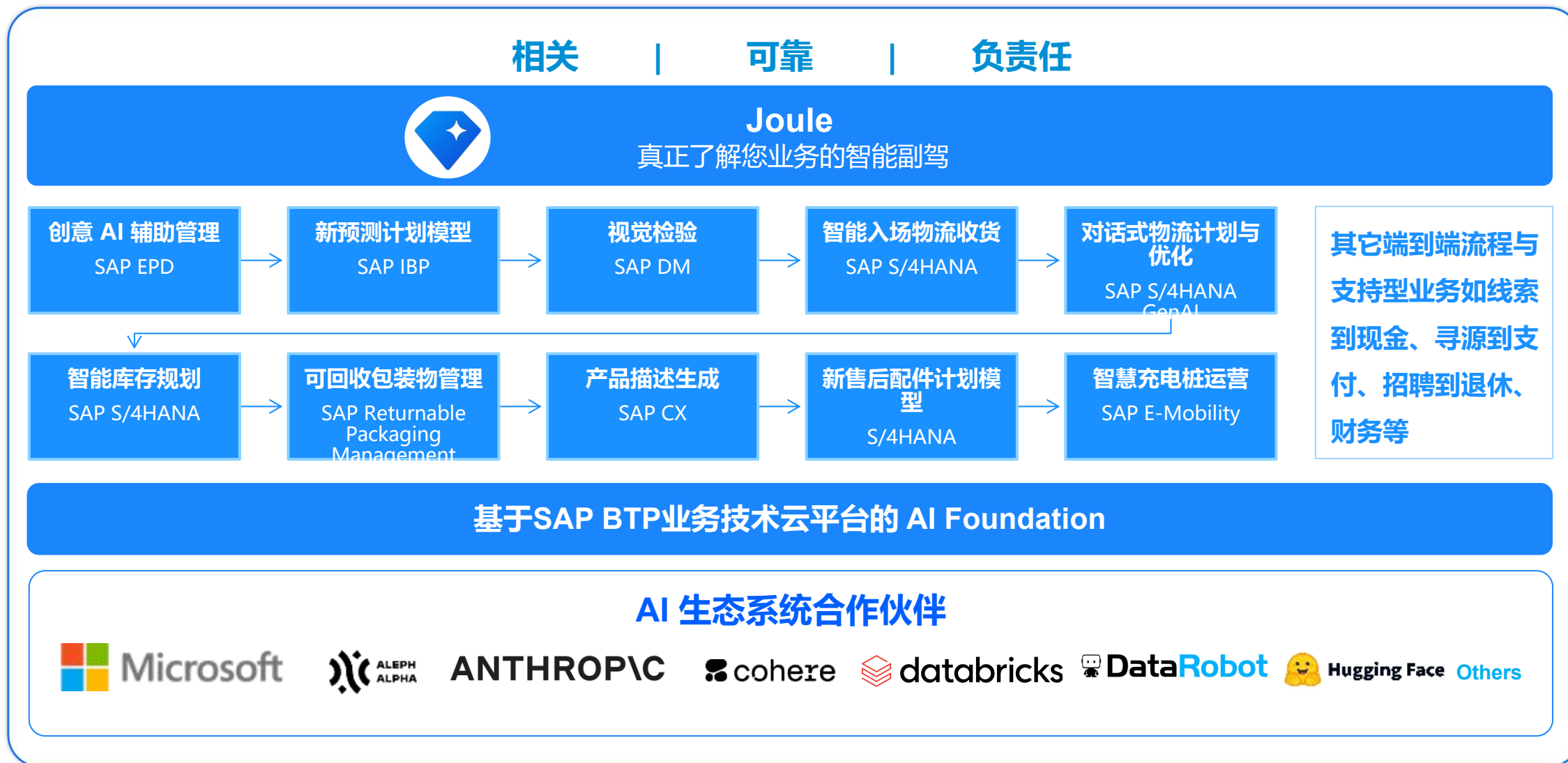


- 149个HANA认证机型，超过后面两名云厂商的数量总和
- 给到客户更多的HANA规格选择，支撑更大的业务弹性
- 全球超过65%的SAP RISE客户选择了Microsoft Azure



Microsoft AI 是 SAP Business AI的重要技术底座

SAP Business AI 路线图示例



SAP AI Assistant – Joule: 真正懂您业务的智能副驾

HXM
招聘

Available

Project Expert
San Francisco, CA

Liam Samuel

Okay! Here are the new position details based on **Liam Samuel**:

Key Position Details

Position Name:	Sustainability Supply Chain Consultant
Job Code:	010409
Job Title:	Sustainability Supply Chain Consultant
Regular / Temporary:	Regular
Company:	Best Run
Location:	Orlando, FL
Department:	Product Engineering
Cost Center:	25ef

Which position detail would you like to amend? You can say something like "change location to Florida."

Say "done" to bypass this step.

Position Name Job Code Job Title

Regular / Temporary Company Location

Department Cost Center Done

Type or speak something...

CX
销售管理

Preview:
Q4 2023

Maria Rodgers
Kixio Procurement Manager

\$50,000	\$450,000	24
Last Order	Total Spend	Total Orders

Summary Details Segments

Maria Rodgers is the Merchandising Manager at Kixio Retail. she has placed a total of 8 orders in the past year. As of now, Maria has 3 open cases that are currently being addressed by our customer support team. Her total sales with our company amount to \$700,000. Maria's role as a Merchandising Manager involves overseeing the selection and purchase of home goods and furniture for Kixio Retail's inventory. Maria is qualified to participate in our yearly customer appreciation gathering.

Cloud ERP
采购营运

Preview:
Q1 2024

Today 8:00 AM

What's the first priority for today?

Sure, here is the highest priority item for you to address today.

Dispute case 1000000031 for customer **Best Run Production** has a high priority which the customer claims that the consulting service has not been concluded since the final result report is still pending the requested changes.

Suggest next steps

BTP
代码生成

Planned:
Q1 2024

EXPLORER

- JOULE

Welcome to Joule!

I am your specialized AI assistant, dedicated to enhancing your experience in generating application logic code in SAP Business Application Studio.

Whether you're creating new logic or refining an existing one, I'm here to help.

Though I strive for perfection, I might not get everything right all the time.

- Change the "criticality" value to 1 when the "impact" value is bigger than 100000, else change to 2.
- Throw an error when the associated status is not "ACTIVE".

Ask Joule

ISBN
差旅费用

Planned:
2024

through Sr. Director(T-4).

Update my request to premium economy for delta airlines

Here's your updated request. Would you like to add or change anything, or would you like me to go ahead and create it?

Flight - Delta Airlines	\$1,800
Oct. 9 - 16, 2023 San Francisco, CA - São Paulo, Brazil	
Based on mid-day, premium economy, round-trip, one-stop flights from Delta airlines	
Hotel	\$875
Oct. 9 - 16, 2023 São Paulo, Brazil	
Based on 7 nights stay with a queen-sized bed from 27 providers	
Taxi	\$65
Oct. 9 - 16, 2023 São Paulo, Brazil	
Based on 10 taxi rides, each of which is 5 km long	
Total	\$2,740

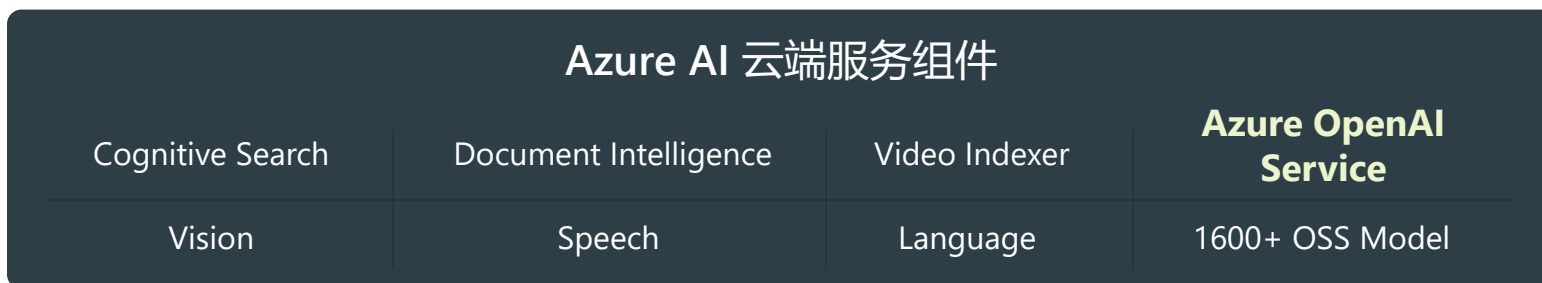
Type or speak something...

Microsoft AI platform: 为SAP提供AI模型、AI基础设施、AI开发工具等服务

商业应用层



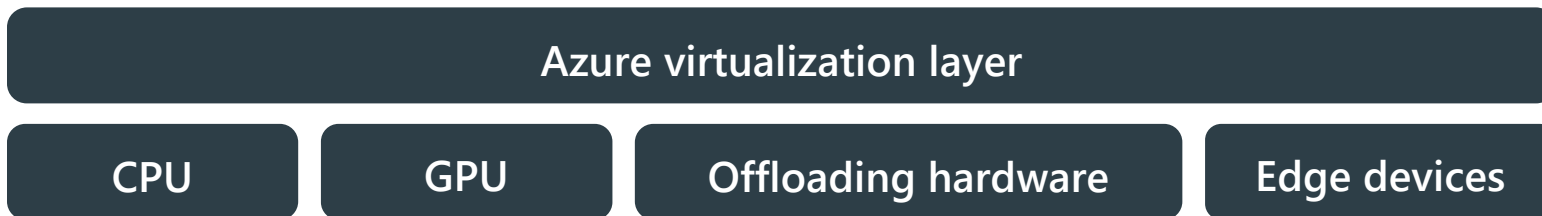
模型层



调度层



硬件层



云数据中心






AI模型:

Azure Model-As-a-Service






Microsoft Azure支持 Azure OpenAI 及 1600+大/小/行业模型

预制的
和可定制的
前沿
及开源模型目录





Mistral AI's

-  Mistral Large
-  Mistral 7b
-  Mistral 7b*8 – Mixture of Experts





Azure OpenAI Service

-  GPT-4-Turbo
-  GPT-4
-  GPT-4V
-  Text-embedding-ada-002
-  GPT-3.5-Turbo




Hugging Face

-  Falcon/TII
-  Stable Diffusion/Stability AI
-  Dolly/Databricks
-  CLIP/OpenAI

Meta

-  Llama-2-70b / 70b-chat*
 -  Llama-2-13b / 13b-chat*
 -  Llama-2-7b / 7b-chat*
 -  CodeLlama*
- *Available as pay-as-you-go

NVIDIA

-  Nemotron-3-8B-4k
-  Nemotron-3-8B-Chat-SFT/ RLHF/ SteerLM
-  Nemotron-3-8B-QA

发现小模型的潜力

Phi

-  Phi-1
-  Phi-2
-  Phi-3

Orca

-  Orca 1
-  Orca 2

AI基础设施:

Azure AI infrastructure

支持Microsoft Copilot, OpenAI 和 NVIDIA的超级AI算力平台

专为大模型训练优化的性能及稳定性

AI model training

为大模型推理运行优化的成本、稳定性及全球分布

AI model inferencing

支持全球AI创新领导者的成功

AI proven

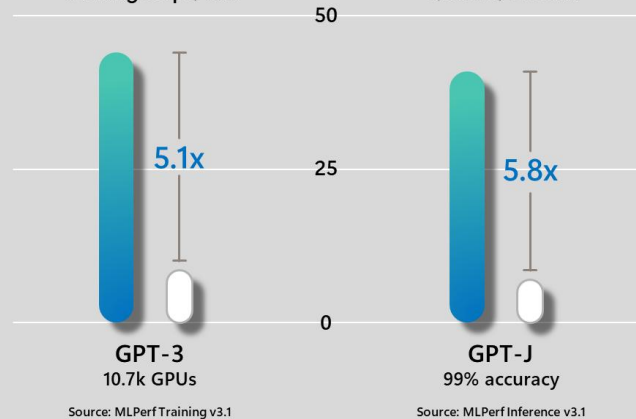
- Microsoft Copilot基于Azure AI Infra运行
- 和Open AI 联合为 ChatGPT设计的第三代硬件
- Nvidia的LLMs基于Azure AI Infra运行

Model training

Training steps/min

Model inferencing

Queries/second



- Microsoft Azure
- Competitor cloud offerings

Largest submission to ML Perf benchmarking consortium with – 10,000 Nvidia H100 GPUs yielded over 5x faster training and inferencing



生成式AI将会重塑未来企业的每一个部门

工厂运营

- 智能修复/故障排除协助
- 培训指南创建
- SOP清单创建
- 创建维护计划
- 设备指南总结

供应链

- 发票/采购订单处理 – 通过增强AFR以进行有针对性的数据提取
- 供应商合同分析
- 供应商沟通信息摘要

研发

- 技术报告摘要,内部演示
- 外部内容汇总 (竞争分析,行业趋势,专利分析)
- IP 文档创建

产品开发

- 从设计文档/伪代码生成产品代码
- 查找并修复代码缺陷
- 对历史代码库进行现代化改造
- 生成内部/外部文档

人力资源

- 员工资料汇总 (企业内部聊天机器人)
- 员工满意度 – 调查总结、离职面谈
- 招聘信息创建/策划

法务

- 合同分析 (总结、违规行为检测、条款提取)
- 摘要 (诉讼、监管文件等)
- 草稿文档生成 (公司政策、隐私文档等)

市场

- 文案创建 (网站、社交媒体电子邮件等)
- 竞争信息分析总结
- 创建销售宣传资料 (演示文稿、小册子 [文本和图像])
- 客户满意度 – 社交媒体/用户评论摘要

IT

- 一级服务代理 (企业 IT 机器人)
- 事件报告分析
- 流程文档创建
- 知识库文章起草
- 工单分类/分配

客服

- 呼叫中心分析
- 创建客户响应 (电子邮件/聊天)
- 服务请求摘要
- 支持机器人
- 常见问题/疑难解答指南创建

环境, 健康与安全

- 安全文档创建/摘要
- 创建EHS程序的清单
- 语义搜索安全文档
- 内部安全机器人 – 安全问题响应热线

世界级汽车主机厂 和 汽车生态伙伴 与微软的合作



基于大模型的自动驾驶


<https://github.com/wayveai/Driving-with-LLMs>

数据流程:

模拟器 -> 生成驾驶场景向量表达 -> 转化为文本描述 -> GPT生成详细场景描述 -> 预训练 (冻结LLM, 对齐向量与文本) -> 进一步生成驾驶场景QA对 -> 微调

模型下游任务:

- 评测感知与预测结果
- 生成驾驶场景QA对
- 生成实时驾驶场景解说
- 提升LLM自驾模型能力



Testset frame: 108

steer | pred.
steer | label

accel. | pred.
accel. | label
break | pred.
break | label

I need to slow down a bit as the car in front of me is getting closer. I'm also going to steer slightly to the right to stay in my lane.

Question	Model Answer	Label
What are you observing?	I'm observing 3 cars and 1 pedestrians.	I'm observing 3 cars and 1 pedestrian. A moving car with angle in degrees: 0.79 and distance of 14.05m is same direction as me and is of prime attention. Two cars with angles of approximately 21.56...
What's the distance between two moving cars that are in the opposite direction?	I'm unable to answer this question based on the observation I have.	The distance between two moving cars travelling in the opposite direction with angles of 21.56 and 6.79 degrees and distances of 10.78 and 32.04m respectively is approximately 21.26m.
Are there any traffic lights / what's the color of the traffic light?	There are no traffic lights.	There are no active traffic lights in my current view.
What would be your action if there was a sudden obstruction on the road?	Here are my actions: - Accelerator pedal 0% - Brake pedal 91% - Steering 31% to the left. Reason: Because I need to stop the car and avoid the obstruction.	If there is a sudden obstruction on the road, my first action will be to gently tap on the brake pedal to slow down the vehicle. Then, I will assess the situation and decide whether to steer around...
What is the meaning of a negative angle in the object distance observation?	A negative angle indicates that the object is to the left of us.	Negative angles indicate that the object is to the left of us, with -90 degrees indicating it's directly on the left.

基于GPT4的智能座舱增强



在三个月内完成 GPT 模型的 Beta 测试，并根据用户的反馈进行改进和优化，从而快速推出增强版的 MBUX 语音助手；



使用 Azure OpenAI 服务的预留预配置吞吐量功能，以便大规模控制 GPT 模型的配置和性能，从而支持更多的用户和车型；



通过 GPT 模型提供更直观、更具对话感的语音助手，让用户可以通过自然语音命令完成更多的任务和功能，从而提升用户的满意度和忠诚度。

超真实语音
带来更好的交互体验



但我现在对这个职业的热情还是非常的，呵呵，非常的，嗯，怎么说呢？日月可鉴的，哈哈，嗯还是希望可以把这个职业做下去或者做这个声音相关领域的工作，嗯，就是把自己的优势发挥的大一点，尽可能能用到自己擅长的东西，而不是说为了工作，为了挣钱而工作。



Thank you!