Assistant Agents

CS6960 MultiModal LLM Agents

Kenneth Marino

Announcements

- Projects
  - Working on grading / feedback for proposals
  - Begin working on project if you haven’t already
  - Get set up on CHPC or other compute
  - …

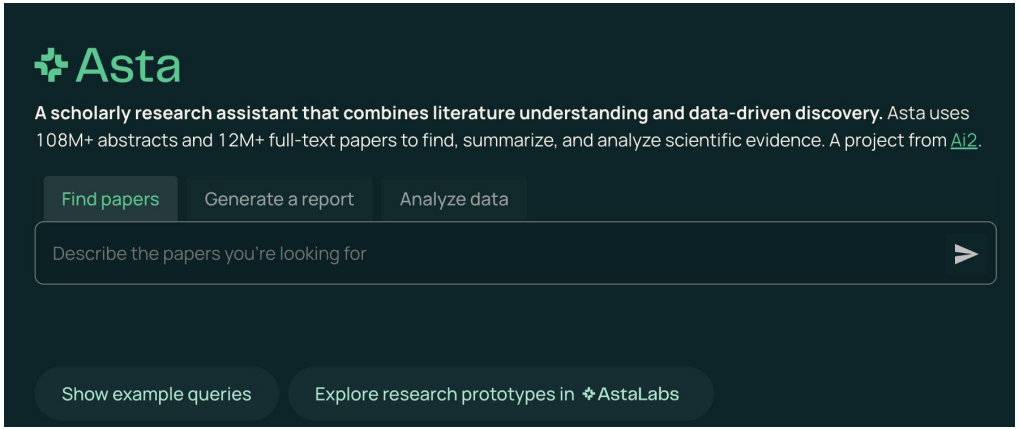
Any Questions

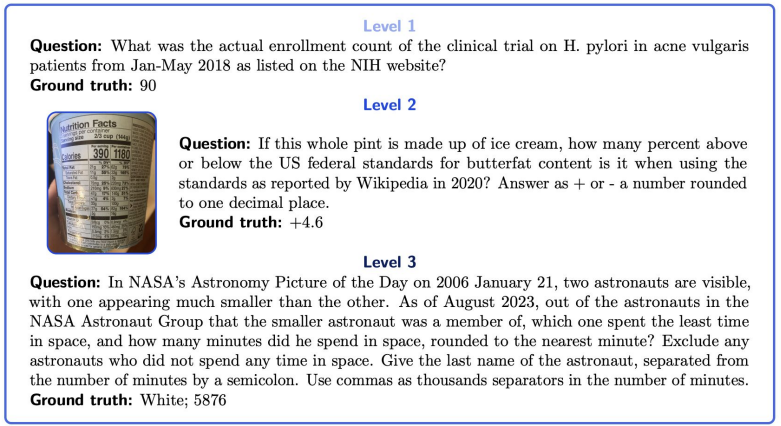
Assistant Agents

- Kind of a bucket term
  - Agents that can “assist people”

Assistant Agents

- Things we can call assistant agents (in presentations)
  - LLM with search/retrieval tools





Assistant Agents

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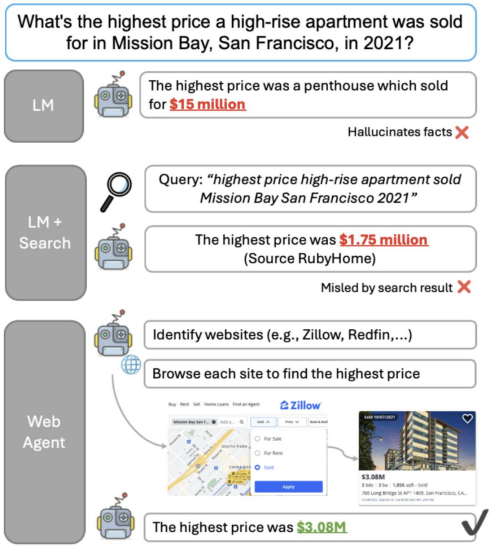
  - Web agents



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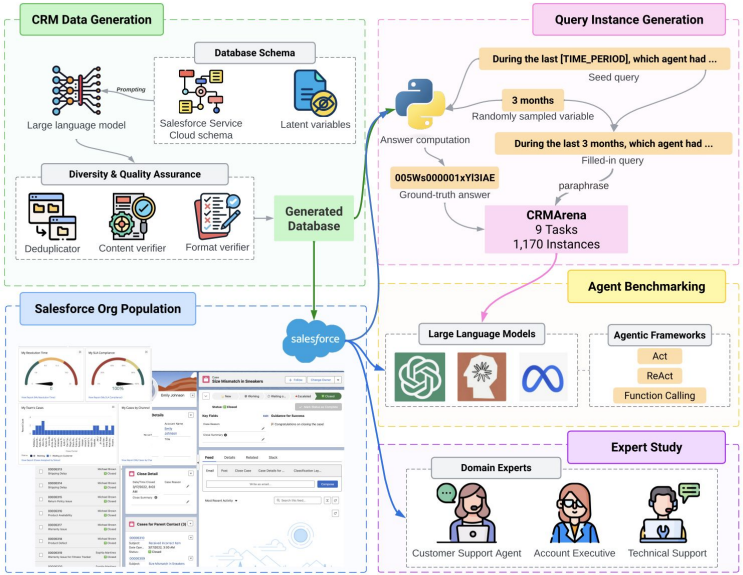

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How is Prof. Marino going to make an interesting lecture out of this?

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How is Prof. Marino going to make an interesting lecture out of this?

Recall: About Me

- New Faculty at Kahlert School of Computing
- Research Scientist at DeepMind
  - Incorporating VLM/LLM into agents
  - Retrieval/RAG for personalization in LLMs

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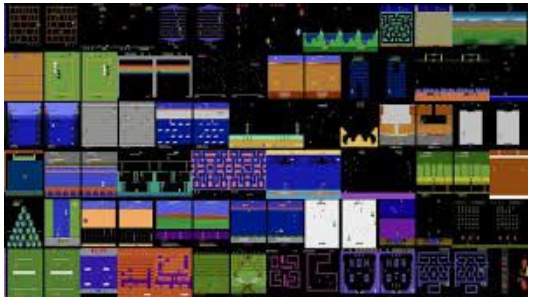
Didn’t this used to be called DeepMind?

A non-NDA-violating history of Google DeepMind

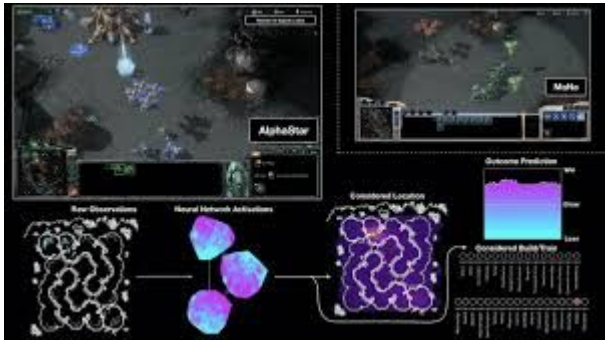
This relates to Assistant Agents, I promise

2021: The old DeepMind

AlphaGo



Atari



StarCraft

2021: The old DeepMind

Games and RL is the way to AGI

Then everything changed with ChatGPT

Situation at DeepMind and Google

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- Suddenly very behind
- We need an answer to ChatGPT
- Investors worried about search
- Execs wondering why we have at least 3 AI groups

Refocus to LLMs

DeepMind and Google Smosh logos

Pictured: Font crimes

Google DeepMind launches Bard

Can we reconcile LLMs with the old ways?

Recall: An earlier definition of agents

- Chatbots that can do things
  - Talk about LLMs that have access to tools: coding, web search, databases, etc
- Chatbot goes and does stuff on its own without you
  - Give it a single query
  - Does a bunch of stuff on its own
  - Comes back to you when it’s done something

Solutions: Start making LLMs more “agentic”

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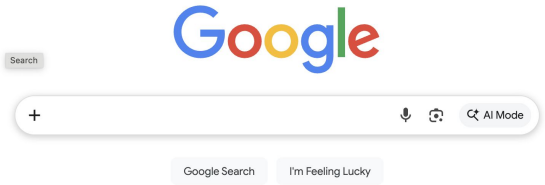
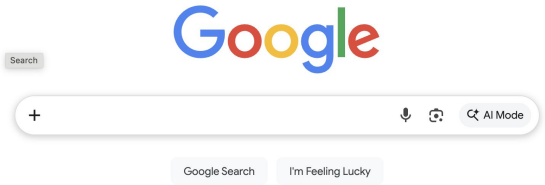


Integrated search was the initial differentiator with ChatGPT

Solutions: Start making LLMs more “agentic”

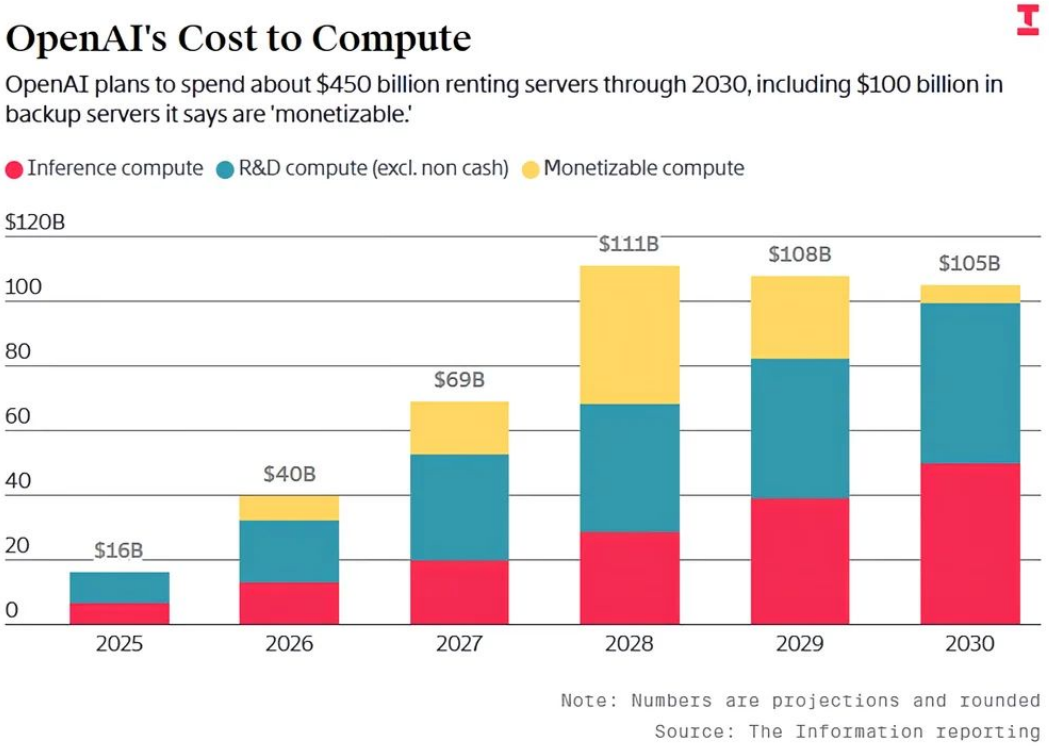


Keep adding tools?

Business idea

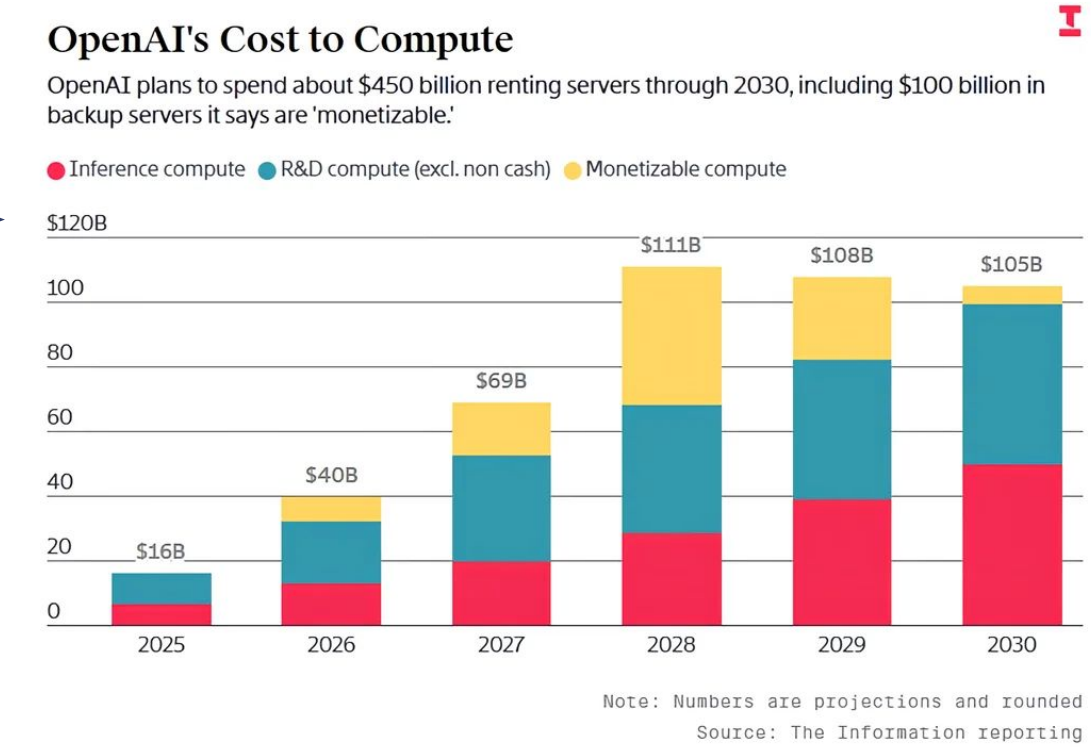
- Merge the business of Google
  - Organize the world information
- Agentic intelligence
  - Take actions over time
- Natural convergence
  - Use LLMs to make an assistant

How do we cover costs



How do we cover costs

This is a billion with a B

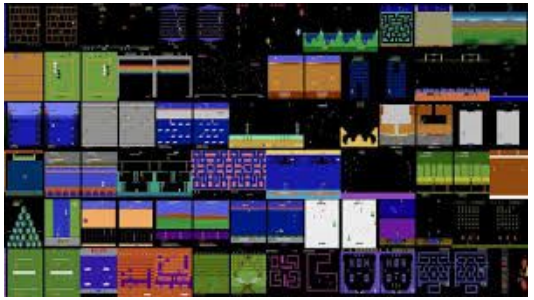


Solutions: Start making LLMs more “agentic”

Chatbots -> Tools -> Assistants -> ??? -> AGI & Money

Can we still go back?

AlphaGo



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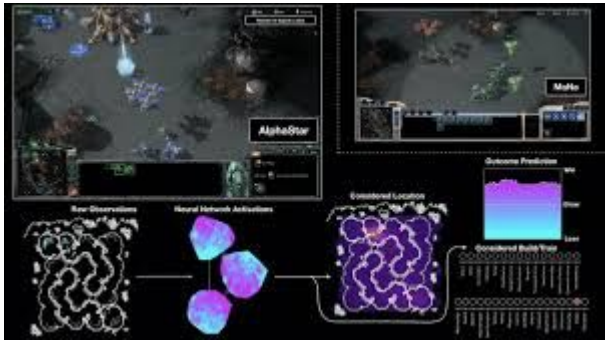
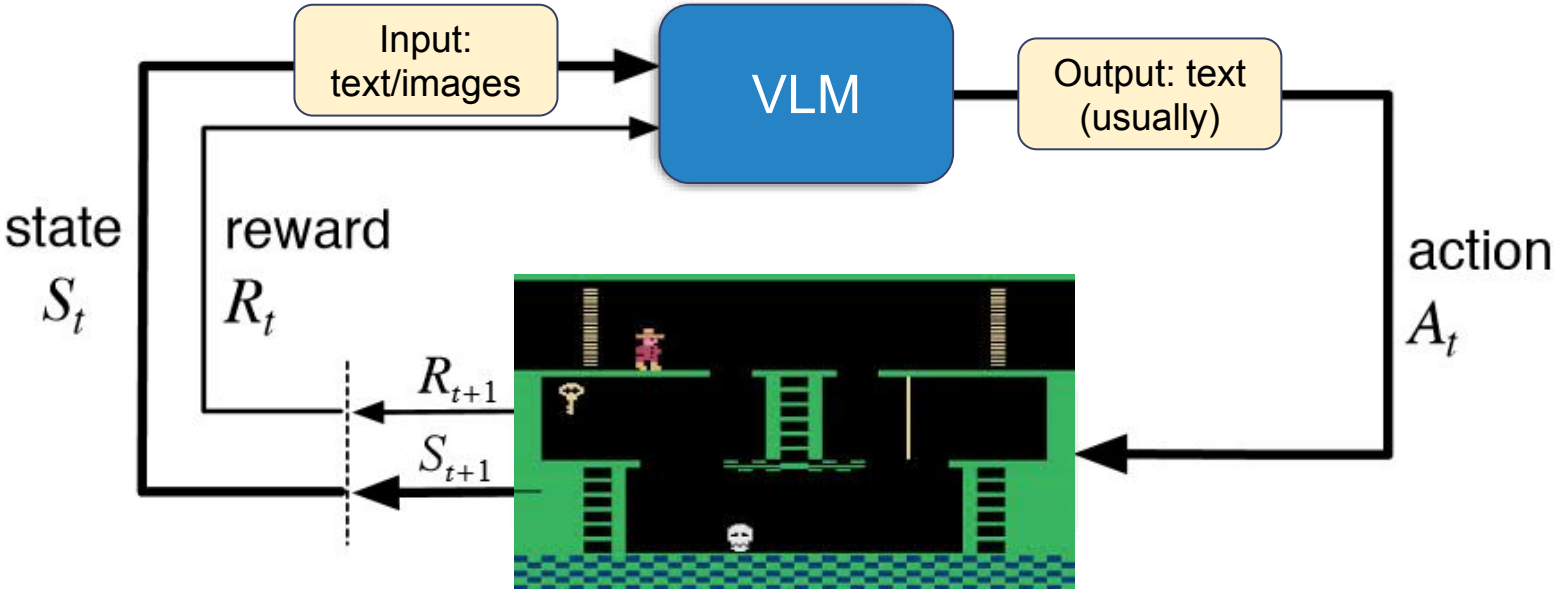


StarCraft

VLM Agents - Old DeepMind meets LLMs



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Now for the presentations!