



INNOVATING WITH DATA & AI IN LIFE SCIENCES

Chitrang Dave
AI and Advanced Analytics

A low-angle, upward-looking shot of a massive, rusted steel bridge tower, likely the Golden Gate Bridge. The structure is composed of large, riveted steel plates, showing significant weathering and rust. The perspective creates a sense of height and scale, with the tower converging towards the top of the frame. The background is a bright, clear sky. A prominent red banner with white text is overlaid across the middle of the image. Thin red lines also extend from the corners of the banner towards the edges of the frame.

WILL AI BE USEFUL IN HEALTHCARE?

AGENDA

Introduction

Where do we stand?

Why should you care?

Opportunities with data & AI

Final tips & takeaways

INTRODUCTION

Data, Analytics, AI
Software & Technology
18 years in MedTech
8+ years in consulting



Edwards



WEATHERHEAD
SCHOOL OF MANAGEMENT
CASE WESTERN RESERVE
UNIVERSITY



Chitrang Davé

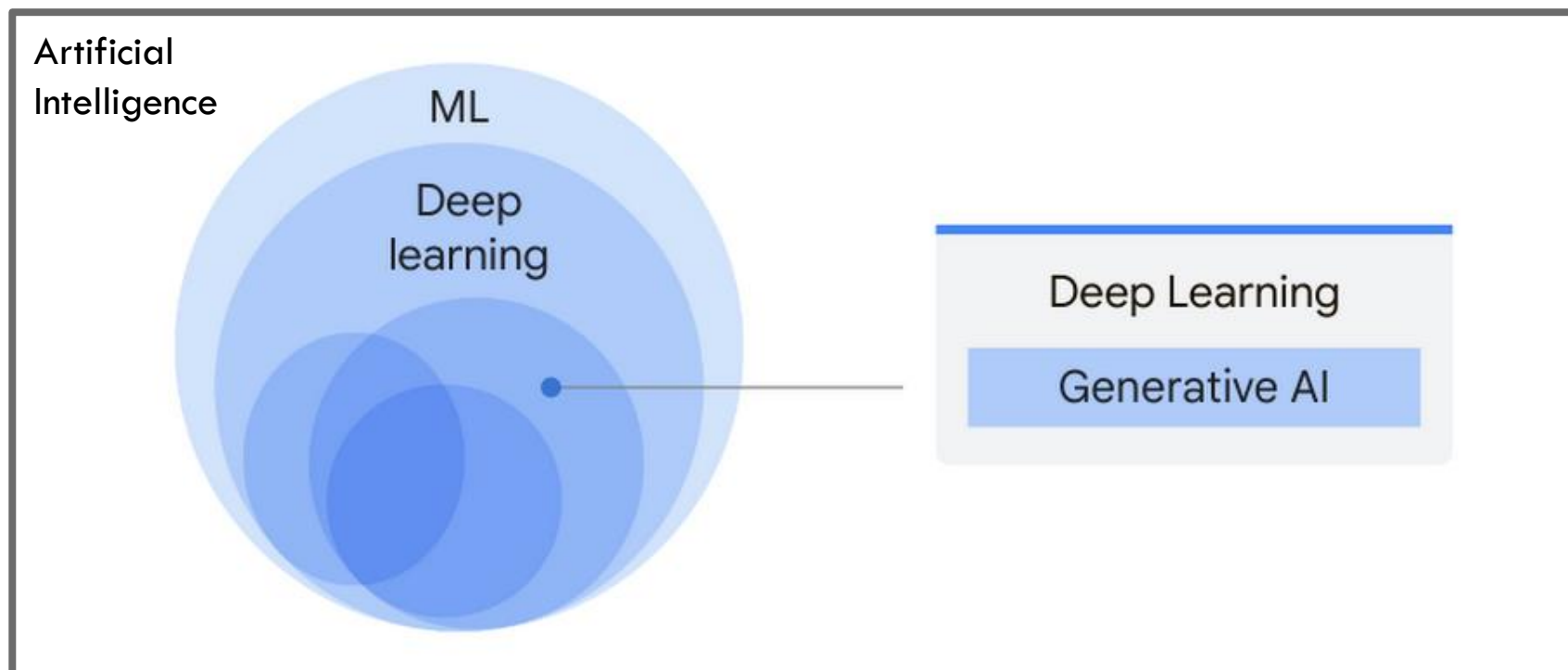
Data + Analytics + AI + Technology in
Healthcare & Life Sciences | Chief Dat...



A low-angle, upward-looking photograph of a massive, rusted steel structure, likely a bridge or industrial framework, reaching towards a bright, overexposed sky. The steel beams are heavily riveted and show significant rust. A prominent red banner with a slight 3D effect is centered across the middle of the image, containing white text. Thin red lines extend from the corners of the banner towards the edges of the frame.

WHERE DO WE STAND? DATA & AI IN LIFE SCIENCES

FROM AI TO GENAI



MODELS ARE IMPROVING...

Major Large Language Models (LLMs)

ranked by capabilities, sized by billion parameters used for training

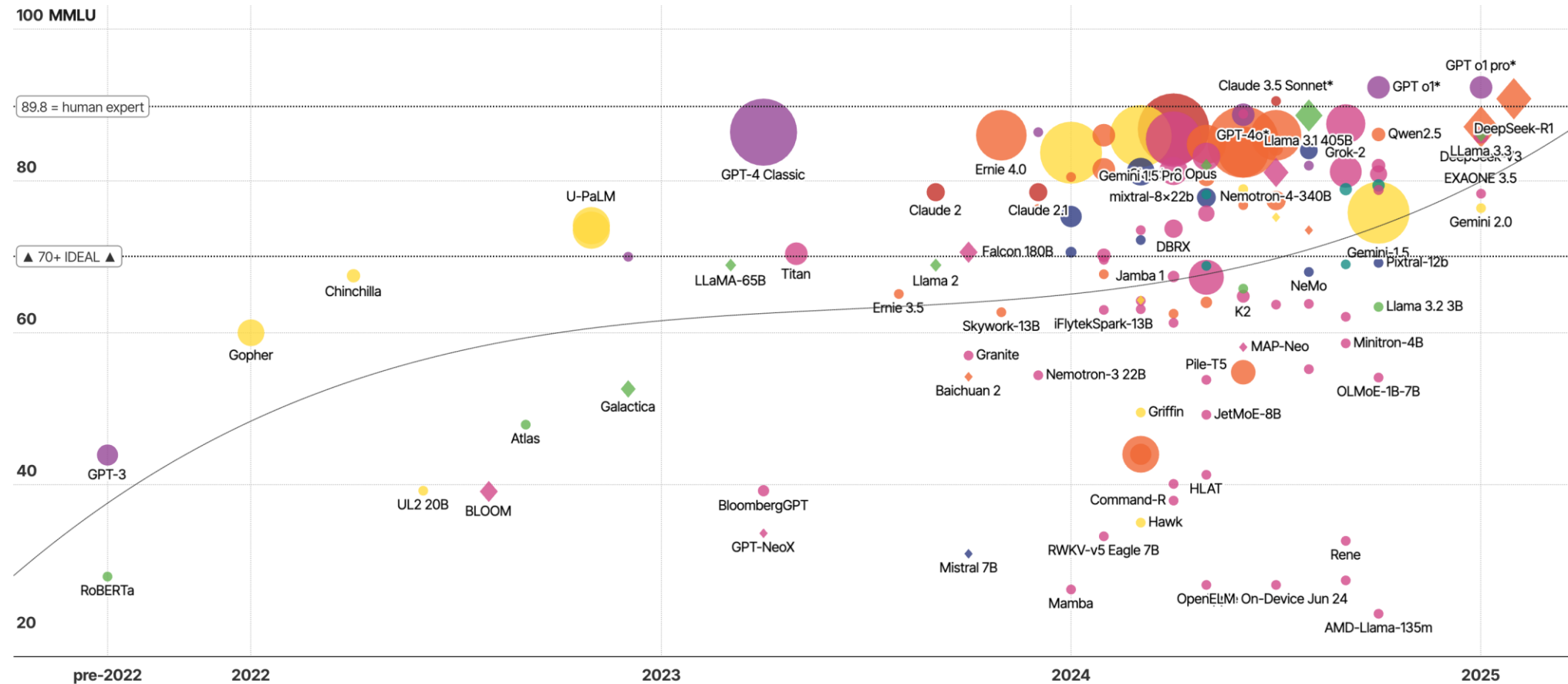
CLICK LEGEND ITEMS TO FILTER

anthropic chinese google meta microsoft mistral openAI other

Parameters (Bn) open access

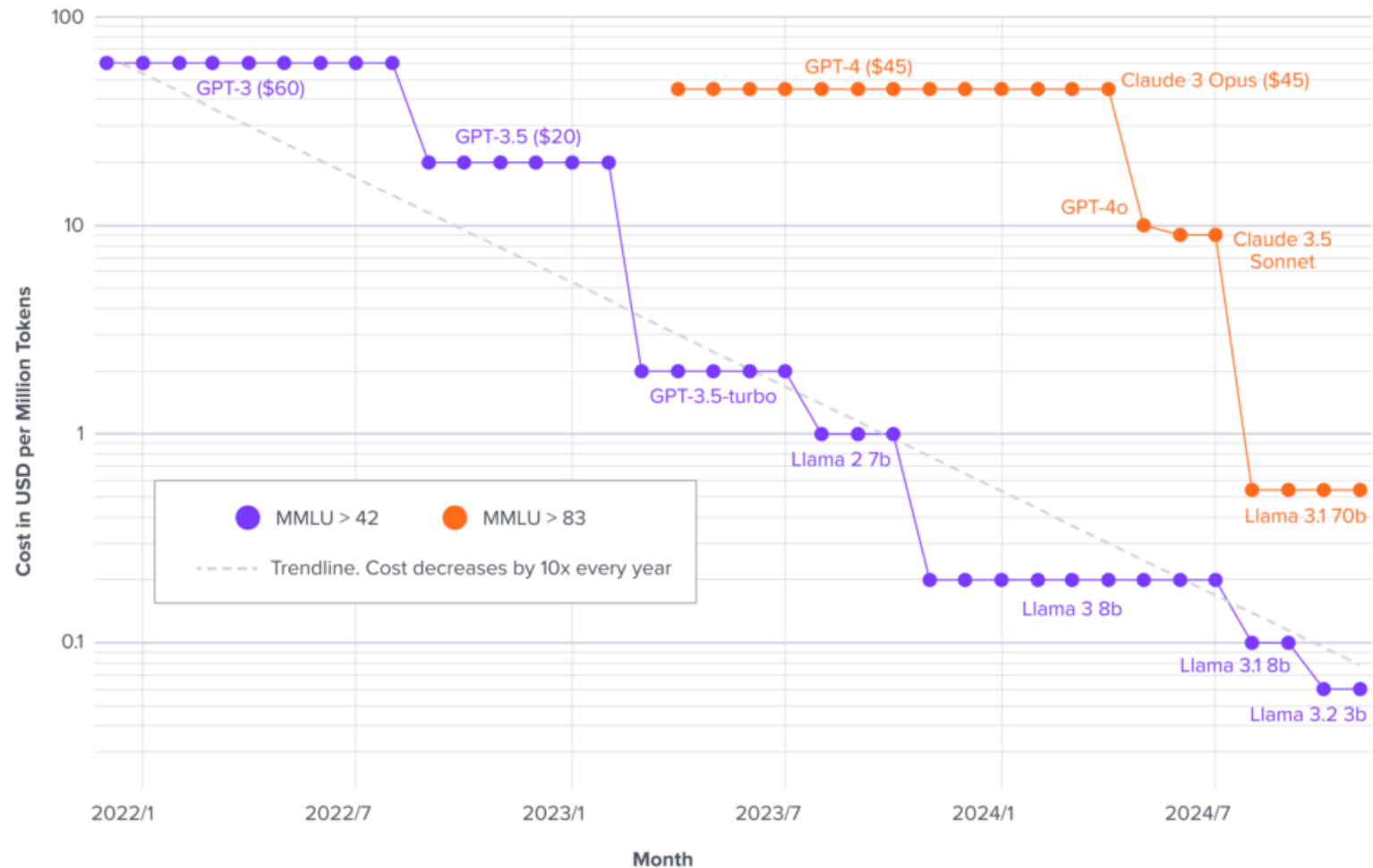
search...

show only: all



... AND COSTS ARE FALLING!

Cost of the Cheapest LLM with a Minimum MMLU Score (Log Scale)



LLM BENCHMARK – AS OF 2/11/2025

Model	Organization	Global Average	Reasoning Average	Coding Average	Mathematics Average	Data Analysis Average	Language Average	IF Average
o3-mini-2025-01-31-high	OpenAI	75.88	89.58	82.74	77.29	70.64	50.68	84.36
o1-2024-12-17-high	OpenAI	75.67	91.58	69.69	80.32	65.47	65.39	81.55
deepseek-r1	DeepSeek	71.57	83.17	66.74	80.71	69.78	48.53	80.51
o3-mini-2025-01-31-medium	OpenAI	70.01	86.33	65.38	72.37	66.56	46.26	83.16
gemini-2.0-flash-thinking-exp-01-21	Google	66.92	78.17	53.49	75.85	69.37	42.18	82.47
gemini-2.0-pro-exp-02-05	Google	65.13	60.08	63.49	70.97	68.02	44.85	83.38
gemini-exp-1206	Google	64.09	57.00	63.41	72.36	63.16	51.29	77.34
o3-mini-2025-01-31-low	OpenAI	62.45	69.83	61.46	63.06	62.04	38.25	80.06
qwen2.5-max	Alibaba	62.29	51.42	64.41	58.35	67.93	56.28	75.35
gemini-2.0-flash	Google	61.47	55.25	53.92	65.62	67.55	40.69	85.79
deepseek-v3	DeepSeek	60.45	56.75	61.77	60.54	60.94	47.48	75.25
gemini-2.0-flash-exp	Google	59.26	59.08	54.36	60.39	61.67	38.22	81.86
claude-3-5-sonnet-20241022	Anthropic	59.03	56.67	67.13	52.28	55.03	53.76	69.30
chatgpt-4o-latest-2025-01-29	OpenAI	57.79	57.92	60.56	48.02	66.00	49.14	65.07



OPPORTUNITIES WITH DATA & AI

In Healthcare & Life Sciences

CLINICAL TRAILS



Patient
Identification



Study Design



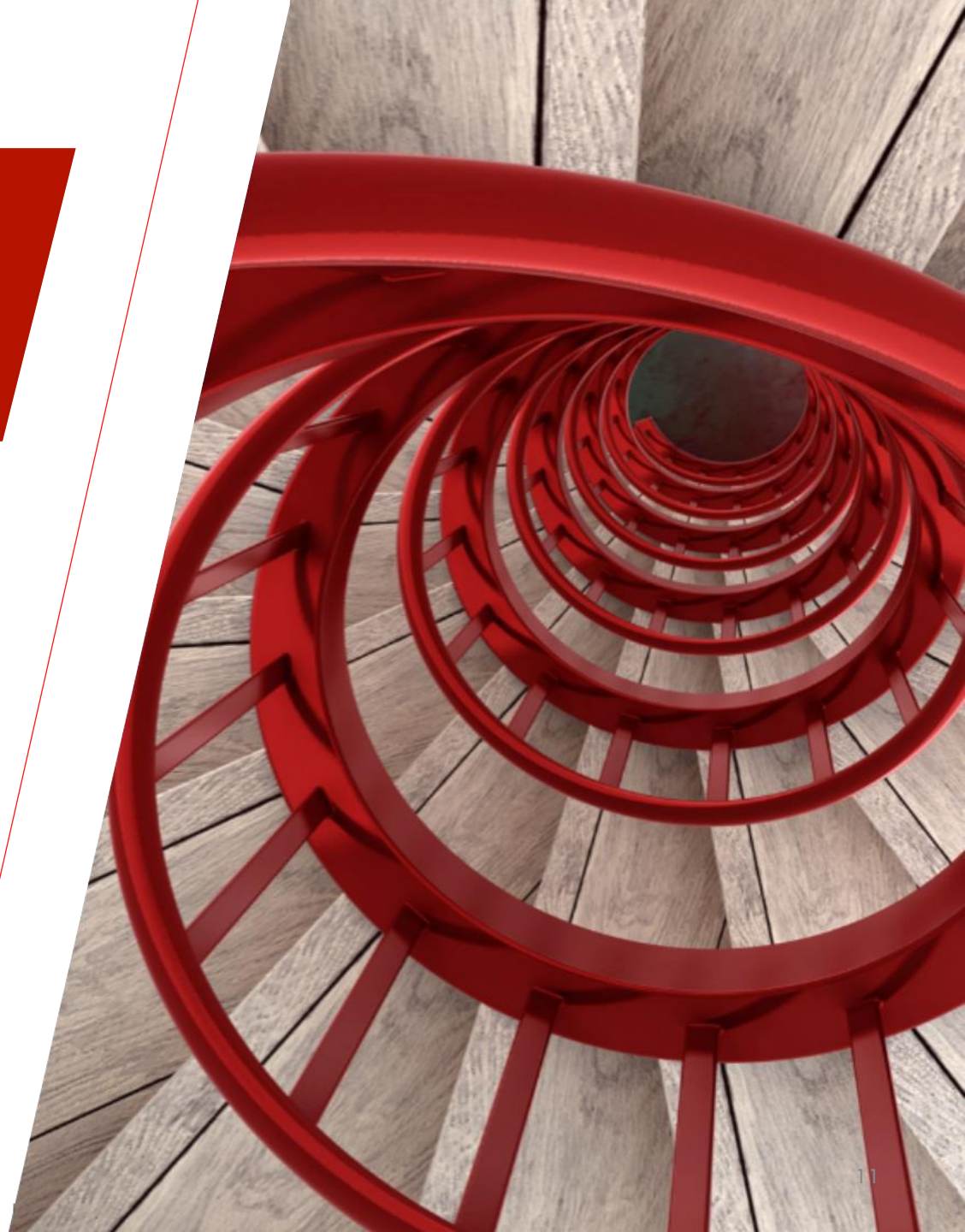
Enrollment
support



Trial
Management



Patient
support



RESEARCH & DEVELOPMENT



Drug
Discovery



Literature
Research



Data
Analysis



Synthetic
Data



Modeling

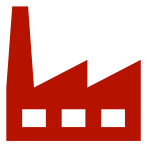


Physician
input



Imaging

COMMERCIALIZATION



Manufacturing
Efficiency



Supply
Management



Content
Management



Physician Identification
and Support



FINAL TIPS & TAKEAWAYS

INVEST IN HIGH QUALITY DATA


LET AI TO HELP YOU SCALE

EXPERIMENT & ITERATE

GET BETTER AT PROMPTING



WILL AI BE USEFUL IN HEALTHCARE?



HOW CAN WE USE AI EFFECTIVELY IN
HEALTHCARE?

THANK YOU



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RESROUCES

nvidia – Health and Life Sciences: <https://www.nvidia.com/en-us/industries/healthcare-life-sciences/>

Slalom: <https://www.slalom.com/us/en/industries/life-sciences>

Snowflake: <https://www.snowflake.com/en/solutions/industries/healthcare-and-life-sciences/>

Databricks: <https://www.databricks.com/solutions/industries/healthcare-and-life-sciences>

Google: <https://cloud.google.com/solutions/healthcare-life-sciences>

LiveBench: <https://livebench.ai>

Rise of GenAI: <https://informationisbeautiful.net/visualizations/the-rise-of-generative-ai-large-language-models-llms-like-chatgpt>