



My CEO Asked for AI: A Year in Review

JUNE 12, 2024



Agenda



- Review and Update of an awareness/use survey from last year's CHOLearning conference
- What is Generative AI (versus traditional AI)?
- Examples of how it is used
- Interactive audience discussion

This QR code provides takes you to a webpage with links and downloads to some of the materials and resources referenced in this discussion.





29th Annual Conference

Current State of AI: The Good, Bad, and Evil of ChatGPT

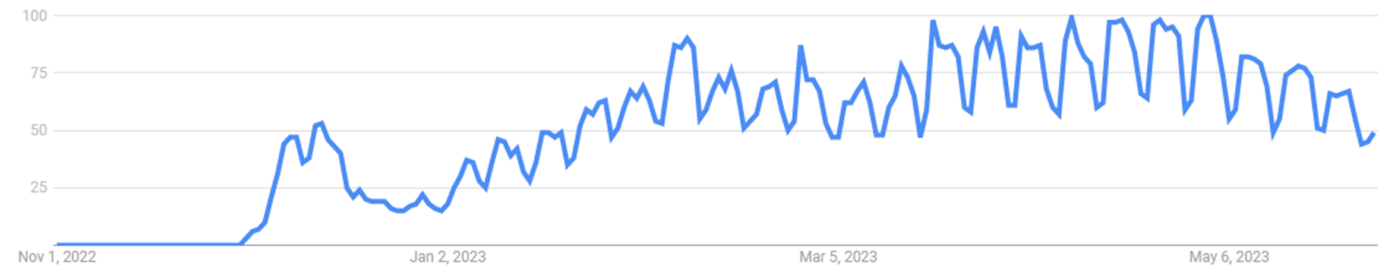
Presenters: Rob Stevens, JD Solomon
& Bob Latino

“ChatGPT” search term had been
trending for about five months

Google Trends: “ChatGPT”

Search Term Index, Nov 2022 – May 2023

Interest over time ?



CHOLearning AI Poll

Contrasting 2023 results to 2024



What is Generative AI?



We Asked Google Bard (precursor to Google Gemini)



Generative AI is a type of artificial intelligence that can create new data, such as **text**, **images**, or **music**.

Generative AI models are trained on large datasets of existing data, and they learn to identify the patterns and structure of that data.

Once they have learned these patterns, they can use them to generate new data that is similar to the data they were trained on.

What's different about GenAI?



AI and Machine Learning have been around for a long time

Generative AI technologies are distinguished by three main characteristics:






1. generalized rather than specialized use cases,
2. generate novel, human-like output rather than merely describe or interpret existing information, and
3. approachable interfaces that both understand and respond with natural language, images, audio, and video.

June 2023 Live Audience Survey



1. I have a solid understanding of artificial intelligence.

More Details

 Strongly Disagree	18
 Disagree	36
 Neutral	18
 Agree	16
 Strongly Agree	2



June 2023 Live Audience Survey



2. I use AI as part of my everyday business.

[More Details](#)



June 2023 Live Audience Survey

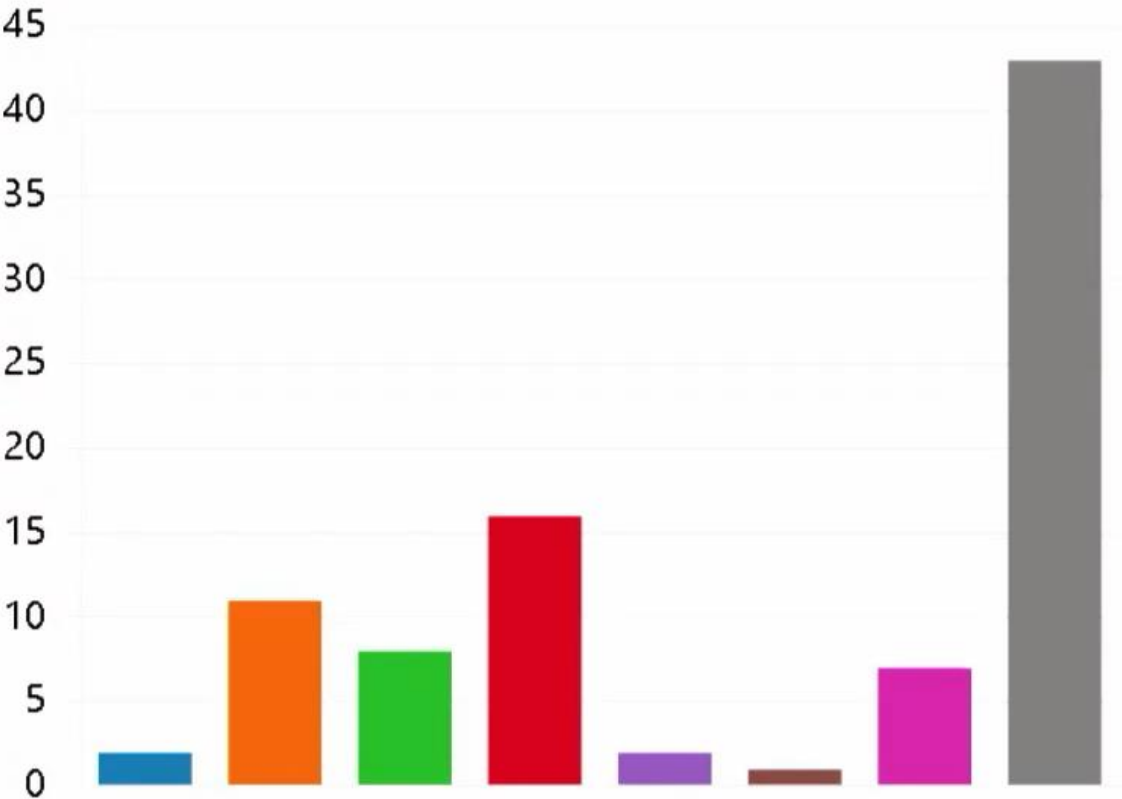


3. In 2023, I trust AI to help me with (check all that apply)

[More Details](#)

Insights

Quantitative data analysis	2
Research	11
Writing	8
Proofreading	16
Qualitative analysis and market t...	2
Equipment operation/production	1
All of the above	7
None of the above	43



June 2023 Live Audience Survey



4. I am confident in the accuracy of the information provided by Chat GPT.

[More Details](#)

Strongly disagree	6
Disagree	30
Neutral	48
Agree	6
Strongly agree	0








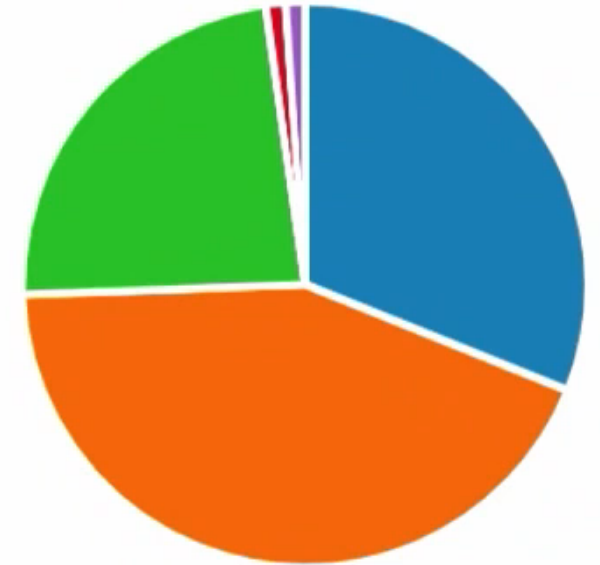
June 2023 Live Audience Survey



5. I am confident in the security of data and information that I provide to Chat GPT.

[More Details](#)

	Strongly disagree	28
	Disagree	39
	Neutral	21
	Agree	1
	Strongly agree	1



How We Use GenAI at First Analytics



Internally

- “Google on steroids”: custom, private GPTs to act as AI experts on a topic
- Write code for data science projects, including data engineering and algorithm development
- Create content for blog and papers
 - check out “**Vetting Vendor AI Claims**” downloadable on the resources page (QR code)

For our clients

- Synthesize and summarize safety incident textual narratives (**demo available to try**).
- Customer feedback: identify issues, direct to appropriate department, create draft response (**see HBR article**).
- Ask about themes and trends in employee satisfaction and engagement
- Migrate platform X to platform Y (e.g. Tableau to PowerBI; SQL to Snowflake)
- Various AI Experts:
 - internal business processes
 - safety
 - greenhouse gas reduction (**demo available to try**)
 - supply chain operations

Railroad incident chatbot



- Built on publicly available FRA Rail Equipment Accident/Incident Data (Form 54)
- Use ChatGPT as a BI tool...
- ... but progress to things beyond the capability of traditional BI / SQL

DEPARTMENT OF TRANSPORTATION FEDERAL RAILROAD ADMINISTRATION (FRA)		RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT		OMB No. 2130-0500	
1. Name of Reporting Railroad		1a. Alphabetic Code	1b. Railroad Accident/Incident No.		
2. Name of Other Railroad or Other Entity with Consist Involved		2a. Alphabetic Code	2b. Railroad Accident/Incident No.		
3. Name of Railroad or Other Entity Responsible for Track Maintenance (single entry)		3a. Alphabetic Code	3b. Railroad Accident/Incident No.		
4. U.S. DOT Grade Crossing Identification Number		5. Date of Accident/Incident month day year		6. Time of Accident/Incident AM <input type="checkbox"/> PM <input type="checkbox"/>	
7. Type of Accident/ Incident (single entry in code box)		1. Derailment		4. Side Collision	
		2. Head on collision		5. Raking collision	
		3. Rear end collision		6. Broken train collision	
		7. Hwy-rail crossing		10. Explosion-detonation	
		8. RR grade crossing		11. Fire/violent rupture	
		9. Obstruction		12. Other impacts	
		13. Other (describe in narrative)		Code	
8. Cars Carrying HAZMAT		9. HAZMAT Cars Damaged/Derailed		10. Cars Releasing HAZMAT	
		11. People Evacuated		12. Subdivision	
13. Nearest City/Town		14. Milepost (to nearest tenth)		15. State Abbr.	
				Code	
16. County				Code	
17. Temperature (F)		18. Visibility (single entry) Code		19. Weather (single entry) Code	
				20. Type of Track Code	

Railroad incident chatbot



Simple BI reporting / SQL generation mode

Prompt

For 2023, provide a total of each incident type. Sort and display them in descending order by total.

Response (exact quote)

In 2023, the total number of each incident type, sorted in descending order by total, is as follows:

- Derailment: 1413 incidents
- Other impacts: 446 incidents
- Hwy-rail crossing: 244 incidents
- Other (describe in narrative): 202 incidents
- Side collision: 125 incidents
- Obstruction: 121 incidents
- Raking collision: 23 incidents
- Fire/violent rupture: 23 incidents
- Rear end collision: 8 incidents
- Head on collision: 3 incidents
- RR grade crossing: 2 incidents
- Explosion-detonation: 1 incident
- Broken train collision: 1 incident

Please note that these numbers are based on the data available in the database and the actual numbers may vary.

Railroad incident chatbot



Queries based on non-structured data, e.g. narrative text

Prompt

How many incidents involved livestock?

Response (exact quote)

Based on the search terms I used, there have been 93 incidents involving livestock. This includes incidents where the narrative mentions "livestock", "cattle", "pigs", "goats", "sheep", or "horses". Please note that this number might not include all incidents involving livestock if they are referred to using different terminology in the narrative. I'm fairly confident in this answer, but there's always a chance that some incidents were missed due to the limitations of text search.

Railroad incident chatbot



Queries based on non-structured data, e.g. narrative text

Prompt

Are there any mentions of human factors in derailments?

Response (exact quote)

Based on the data in the 'incidents' table, there are 165 incidents where the narrative mentions both 'human' and 'derailment'. This suggests that human factors may have been involved in these derailments. However, please note that this is a simple text search and does not necessarily imply causation. The narratives would need to be read in detail to confirm the exact role of human factors in these incidents. I'm fairly confident in this answer, but there could be other interpretations or ways to approach your question.

AI for Training and Safety at Birchwood





Issues in Generative AI Adoption



- Company confidential data and intellectual property
- Skill sets
- What is hype, what is real, especially with vendors
- Tracking value
- Change management
- Bias issues
- “Hallucination”
- Keeping up with technology
- Where to begin?



Interactive Audience Discussion

Interactive Audience Discussion



- Starter topics by Bob, Caitlin and Rob
- **Your turn to share:** what are you doing in your companies?
- How are you addressing issues at the right?

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Thank You!

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