AI Introduction

Basics and more

What is AI?

- Me - Artificial Intelligence (AI) is a field of study and technologies that allow computers to perform a variety of functions which only humans have typically been able to do.
- IBM – AI is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.
- Google – AI is a field of science concerned with building computers and machines that can reason, learn, and act in such a way that would normally require human intelligence or that involves data whose scale exceeds what humans can analyze.
- ISO – AI is a technical and scientific field devoted to the engineered system that generates outputs such as content, forecasts, recommendations or decisions for a given set of human-defined objectives.

Data Science v AI

- Me – Data science is the study of, manipulation of, and visualization of data to answer questions, assist in decision making or understand a topic
- IBM – Data science combines math and statistics, specialized programming, advanced analytics, AI and machine learning with specific subject matter expertise to uncover actionable insights hidden in an organization's data.
- Microsoft – Data science is the scientific study of data to gain knowledge. This field combines multiple disciplines to extract knowledge from massive datasets for the purpose of making informed decisions and predictions.
- HBR – Data science is the process of building, cleaning, and structuring datasets to analyze and extract meaning.

Subfields within AI

- Machine Learning (ML) is the basis for the majority of what we call AI today
  - Deep learning is a subset of ML
    - Neural networks power Deep Learning
- Computer Audio
- Computer Vision
- Natural Language Processing (NLP)
- Robotics
- Expert Systems

Types of ML

- Supervised
  - classification
  - numerical prediction
- Unsupervised
  - clustering
  - association (recommender agents)
- Reinforcement Learning (from Human Feedback)
  - rewarding or penalizing a model for its actions
  - decision making
  - optimization problems

Data

- “Data is the new gold”
  - Salesforce ad
- “Garbage in/garbage out”
  - without good data, AI isn’t useful
- Data chain-of-custody
  - if you are going to be building or using models in your organizations, you must have one

AI is a team sport

- No one team in an organization can develop a model or decide on the right AI tools to use
- Developing models
  - Management
  - Security
  - Risk team
  - Legal team
  - Finance
  - Subject Matter Experts
  - DevOps
  - Data Team
  - ML Team
- Using external AI tools
  - All those listed within developing your own models plus all the relevant teams within the company you're buying services from

AI Concerns

ALIGNMENT

ETHICS

SAFETY

SECURITY

April 4, 2024 Statement

- “Existing legal authorities apply to the use of automated systems and innovative new technologies just as they apply to other practices.
- We take seriously our responsibility to ensure that these rapidly evolving automated systems are developed and used in a manner consistent with federal laws, and each of our agencies has previously expressed concern about potentially harmful uses of automated systems.”

From the Joint Statement on Enforcement of Civil Rights, Fair Competition, Consumer Protection, and Equal Opportunity Laws in Automated Systems (April 4, 2024)

ars TECHNICA

BIZ & IT TECH SCIENCE POLICY CARS GAMING & CULTURE STORE

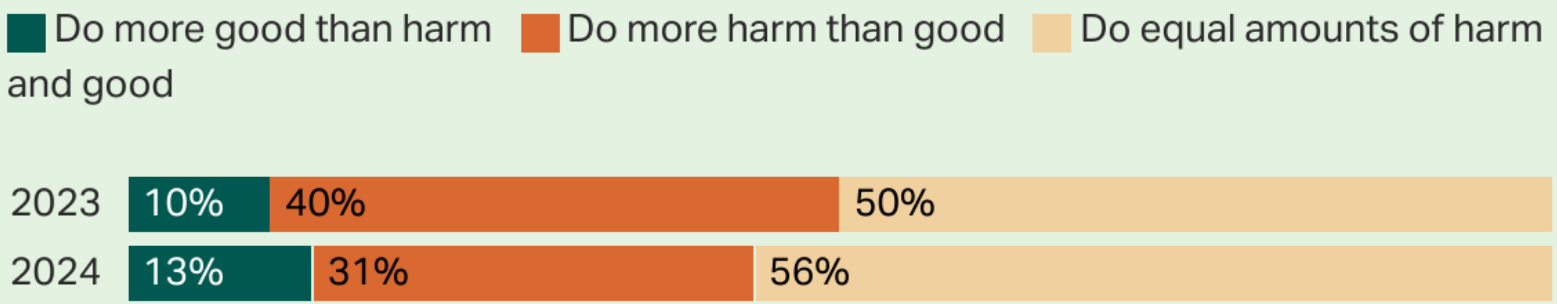
RUSH JOB —

AI ruling on jobless claims could make mistakes courts can't undo, experts warn

Nevada's plan to let AI rule on unemployment claims is risky, experts warn.

ASHLEY BELANGER - 9/10/2024, 5:48 PM

In Your Opinion, Does Artificial Intelligence . . . ?

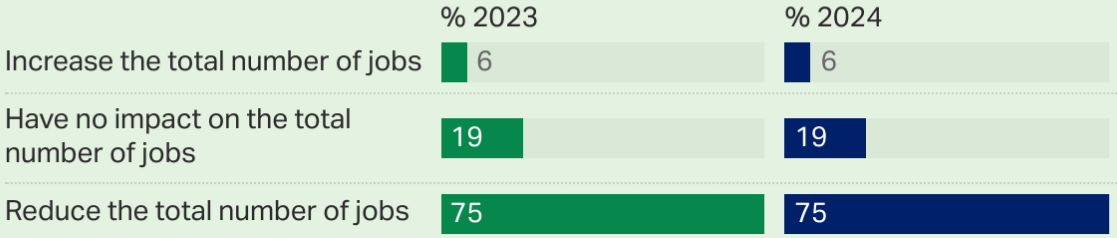


Bentley University-Gallup Business in Society Study

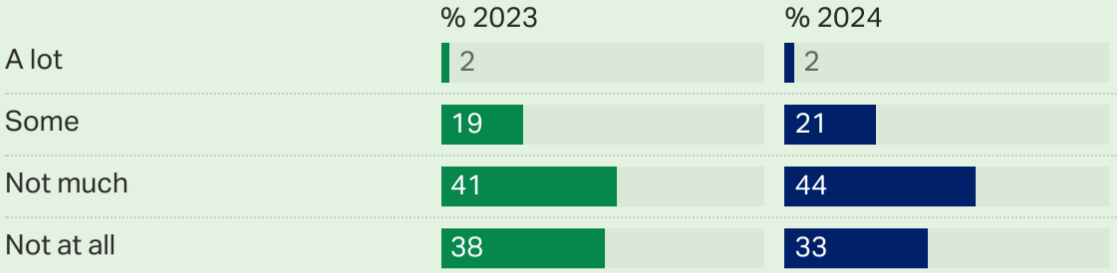
GALLUP

Americans Believe AI Will Hurt Jobs, Lack Trust in Businesses to Use It

In your opinion, what type of effect will artificial intelligence have on the total number of jobs in the United States over the next 10 years?



In general, how much do you trust businesses to use artificial intelligence responsibly?



Bentley University-Gallup Business in Society Study

GALLUP

Panel Members

- Brian Pendleton
  - brian@tasaane.com
- Ken Kato
  - ken@kenkato.me
- Rachel See
  - rsee@seyfarth.com