Generative AI's impact on the workforce

Future Perspectives

Presenters

Jose Alberto Aguilar

Data Architecture Senior Manager - Accenture Data & AI

Jose Alberto is a senior software developer and architect with 25 years of experience in information technology projects, working mostly on the design and implementation of advanced Information Retrieval, Data Analytics, NLP, Artificial Intelligence, and Machine Learning Solutions. At Accenture he is part of the *Data & AI* group working mostly with Data Engineering and Artificial Intelligence implementations.

Education

Master's degree in Software Engineering, emphasis Artificial Intelligence, Universidad Cenfotec

Specialization in Data Science, ITCR

Master's degree in Project Management, emphasis Enterprise Projects, ITCR

Master's degree in Project Management, emphasis Software Development Projects, ITCR

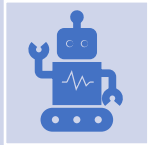Bachelor's degree in Computer Science and Informatics, UCR

Andrea Tanzi

Global Creative Intake and Agency Relations Lead for Accenture M&C

Andrea Tanzi is an expert in technology innovation with a rich background in tech, human-centered design, workforce development, and marketing & communications. She focuses on leveraging emerging technologies to transform human potential, blending strategic insight with a commitment to inclusion and diversity.

At Accenture, Andrea has steered teams through complex projects, showcasing her expertise in experience design, strategic growth, and the ethical integration of technology.

Takeaways for today

The Tranformative Impact of AI

The Importance of AI Literacy

Developing an AI Mindset

Current State

RATE OF ADOPTION

IMPACT ON JOBS

WHAT CEOS ARE SAYING

Why is generative AI different from other technological innovations?

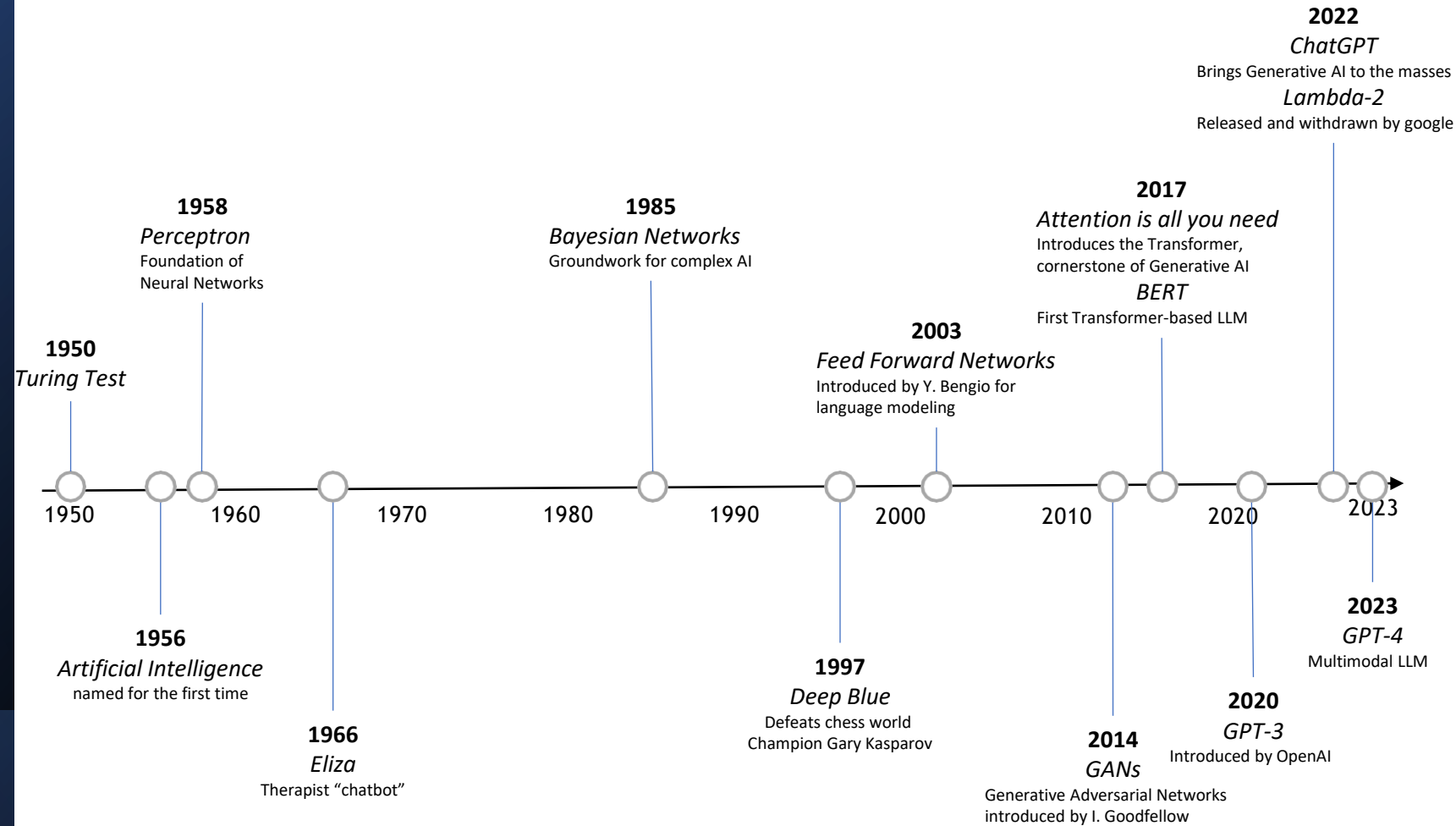This technology has the power to reinvent every facet of an organization. This is new.

We expect that new Reinventors will emerge, and some of the current ones may be displaced, with the number of Reinventors growing.
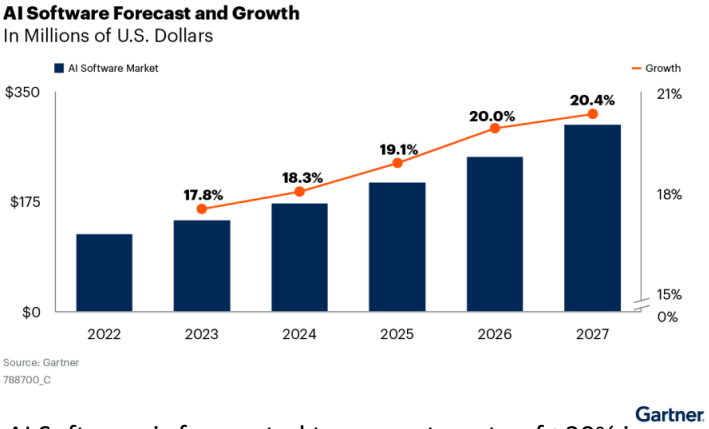
Our work shows empirical evidence that this trend is already in motion, particularly as generative AI rapidly disrupts every industry.
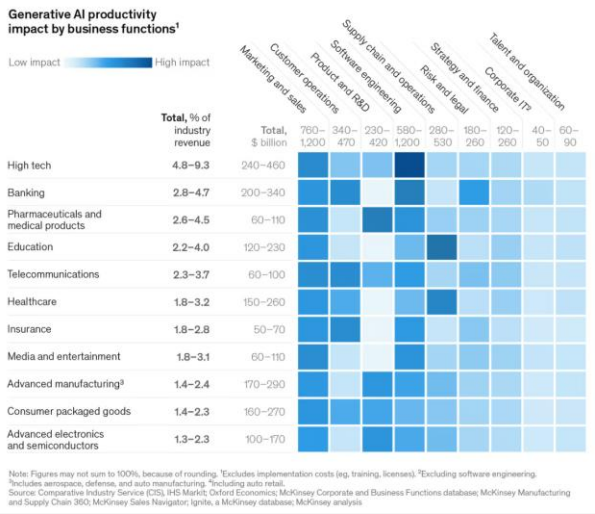
AI is reaching a new Golden Age

1950
Turing Test

1956
Artificial Intelligence
named for the first time

1958
Perceptron
Foundation of
Neural Networks

1966
Eliza
Therapist "chatbot"

1985
Bayesian Networks
Groundwork for complex AI

1997
Deep Blue
Defeats chess world
Champion Gary Kasparov

2003
Feed Forward Networks
Introduced by Y. Bengio for
language modeling

2014
GANs
Generative Adversarial Networks
introduced by I. Goodfellow

2017
Attention is all you need
Introduces the Transformer,
cornerstone of Generative AI
BERT
First Transformer-based LLM

2020
GPT-3
Introduced by OpenAI

2022
ChatGPT
Brings Generative AI to the masses
Lambda-2
Released and withdrawn by google

2023
GPT-4
Multimodal LLM

1950   1960   1970   1980   1990   2000   2010   2020   2023
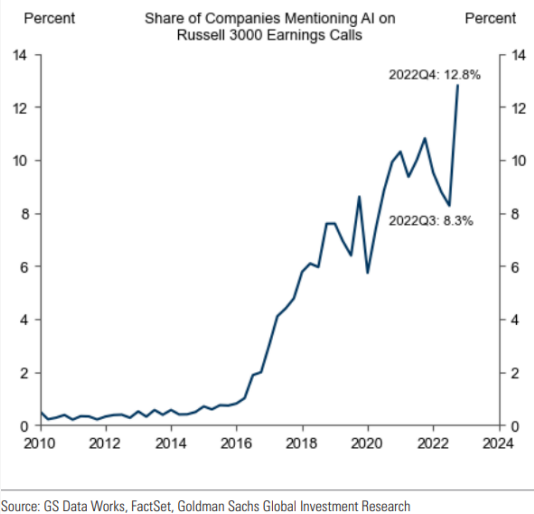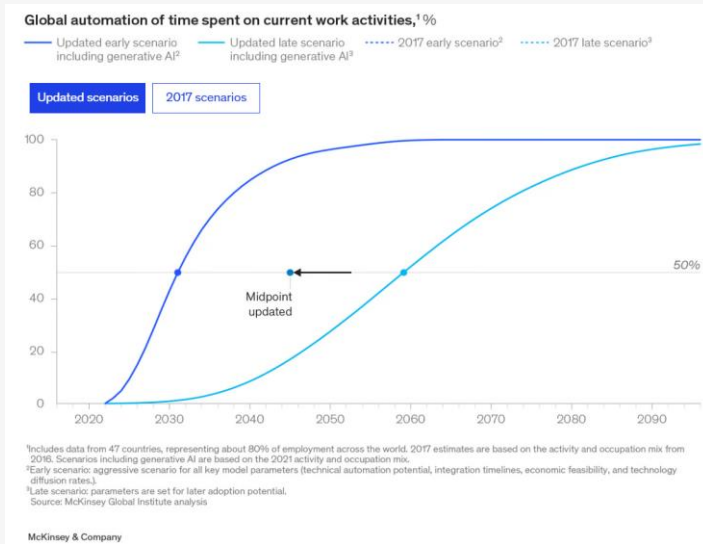
Rate of Adoption

AI Software is forecasted to grow at a rate of ~20% in the next 4 years
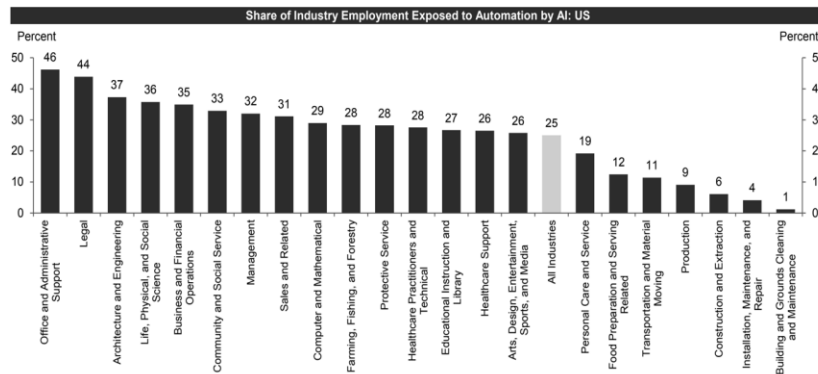

Different Industries are affected differently

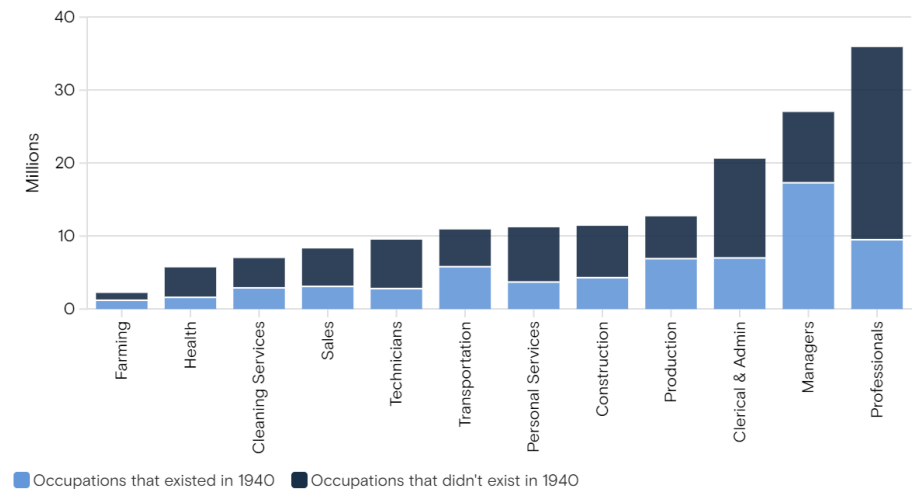AI is top of mind for investors and the C-Suite

Global automation of time spent on current work activities,[1] %

50% of all work activities can be automated by AI between 2030-2060

Share of Industry Employment Exposed to Automation by AI: US

25% of industry employment are exposed to automation by AI

Impact on the Labor Market

- 83 million jobs to disappear, but 69 million new jobs expected in 5 years. (World Economic Forum)
- Replace 7% jobs, complement 63% (Goldman Sachs Research)
- Automate up to 60-70% of current work activities (McKinsey)

Occupations that existed in 1940   Occupations that didn't exist in 1940

Source: Autor et al. (2022), Goldman Sachs Research

60% of today's workers are employed in occupations that didn't exist in 1940

Goldman Sachs

Industry Consensus

The No. 1 cause of business change in 2023? Technology, catapulted by generative AI

Accenture Pulse of Change: 2024 Index

Analysis of business disruption		C-suite leaders' perception
2023	**2022**	**2023**
#1 Technology	Talent	#1 Technology
#2 Talent	Economic	#2 Geopolitics
#3 Climate	Geopolitics	#3 Consumer & Social
#4 Economic	Consumer & Social	#4 Talent
#5 Geopolitics	Climate	#5 Economic
#6 Consumer & Social	Technology	#6 Climate

*Ranking is based on % of increase measured from 2022 to 2023 for each of the six factors.

*Based on a global survey of 3,450 C-suite executives, accross 20 countries and 19 industries.

What causes of change are main opportunities?

Adoption of emerging technologies as Generative AI

Accelerated pace of technological innovation

Data Protection

But there is time...

- AI Integration is expected to be more gradual than anticipated

- Economic viability
  - Only 23% of tasks are economically viable for automation

- Costs vs. Automation Pace
  - AI is costly, which slows down the transition

- AI-as-service Platforms
  - Can democratize AI access
  - New Business models

- AI will continue augmenting human labor and creating new tasks and jobs

Subtopics of AI

Machine Learning	Deep Learning	Natural Language Processing (NLP)	Computer Vision	Robotics and Control Systems	Speech and Audio Processing	Ethics, Policy, and Governance	Emerging Trends and Technologies
• Supervised Learning • Unsupervised Learning • Reinforcement Learning • Semi-supervised and Self-Supervised Learning • Ensemble Methods	• Neural Networks • Convolutional Neural Networks (CNNs) • Recurrent Neural Networks (RNNs) • Transformer Models • Generative Adversarial Networks (GANs) • Transfer Learning and Fine-tuning	• Text Processing and Tokenization • Word Embeddings and Language Models • Sentiment Analysis • Machine Translation • Question Answering and Chatbots	• Image Classification and Object Recognition • Object Detection and Image Segmentation • Face Recognition and Emotion Analysis • Optical Character Recognition (OCR) • Image Generation and Style Transfer	• Robot Locomotion and Manipulation • Path Planning and Navigation • Human-Robot Interaction • Autonomous Vehicles and Drones	• Speech Recognition • Speech Synthesis (Text-to-Speech) • Music Generation and Audio Analysis	• AI Bias and Fairness • AI Transparency and Explainability • Data Privacy and Security • AI Policy and Regulation	• Quantum Computing and AI • AI in Edge Computing • Federated Learning • Neuromorphic Computing

AI Basics

Basic Concepts of AI and Machine Learning
- Understand what AI is and its main objectives.
- Learn the basics of machine learning, including the differences between supervised, unsupervised, and reinforcement learning.

Ethics and Societal Implications
- Learn about AI's ethical considerations and societal impacts, including bias, fairness, privacy, and job displacement.
- Understand the importance of responsible AI and the need for transparency and accountability.

Real-World Applications of AI
- Explore how AI is used in various industries like healthcare, finance, transportation, and entertainment.
- Understand the role of AI in everyday applications, such as recommendation systems, virtual assistants, and autonomous vehicles.

Data and Privacy
- Understand the role of data in AI, including how data is used to train models and the importance of data quality.
- Learn about the implications of AI on personal privacy and data security.

Critical Thinking about AI
- Develop the ability to assess AI news and claims critically. Learn to differentiate between AI hype and reality.
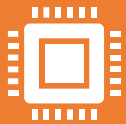- Understand the limitations of AI and the challenges in developing and deploying AI systems.

Introduction to AI Tools and Technology
- Get familiar with some of the essential tools and platforms used in AI, such as AI-powered apps or simple platforms like chatbots.
- Understand the basic concepts behind algorithms used in AI, without necessarily going into the mathematical details.

Impact of AI on the Workforce
- Learn about how AI is transforming the job market, including new roles created by AI and how existing jobs are changing.
- Understand how to adapt and acquire relevant skills for the evolving job market influenced by AI technologies.

Human by design: How AI unleashes the next level of human potential

It's time to make technology human by design.

This is a moment for reinvention. In the coming years, businesses will have an increasingly powerful array of technologies that will open new pathways to unleash more significant human potential, productivity, and creativity.

Early adopters and leading businesses have kick-started a race toward a new era of value and capability. And their strategies are underpinned by one common thread – the technology is becoming more human.

The Evolving Landscape of AI-Enhanced Careers

AI is not just creating jobs; it's elevating them

High growth in vocational and higher education teaching roles, generally higher paid

Creative thinking becomes more relevant

Skills Thriving in the Age of AI

Skills requiring unpredictability, creativity, empathy, and interpersonal interactions are less likely to be automated.

Jobs in strategic decision-making, creative industries, healthcare, and education.

The irreplaceable value of human intuition, emotion, and complex problem-solving.
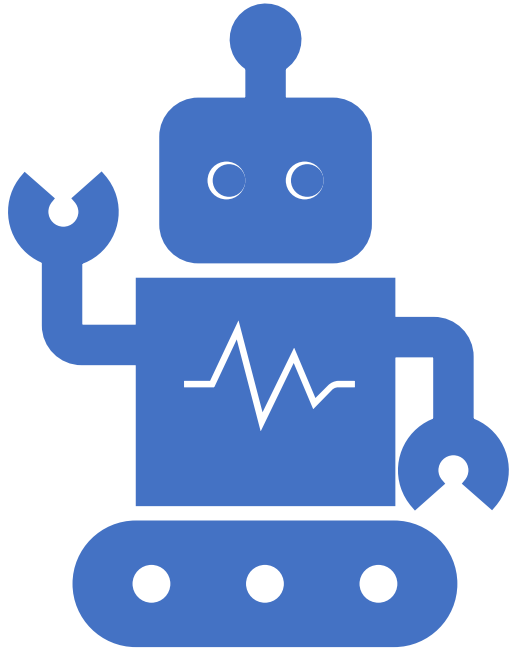
In an AI world, uniquely human skills become more valuable.

Leveraging Online Education for Workforce Agility

- The rise of online learning platforms offering rapid reskilling opportunities.

- Growing acceptance of online certifications by employers.

- Need for governmental recognition and certification of online courses.

Case Study: AI's Transformative Role in Sales

- AI redefines roles and strategies integration in sales, customer service and marketing

- Over 25% of sales and marketing jobs from the last decade impacted by automation

- Shift from traditional selling to AI-driven analytics and customer engagement.

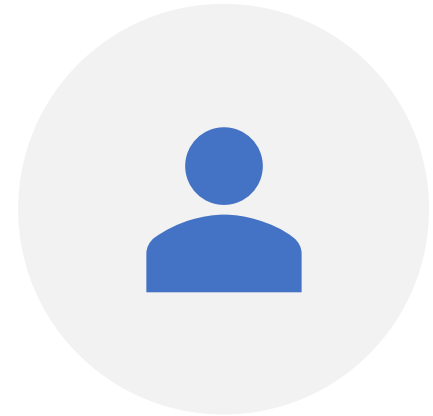- AI in sales: From transactional to consultative roles.
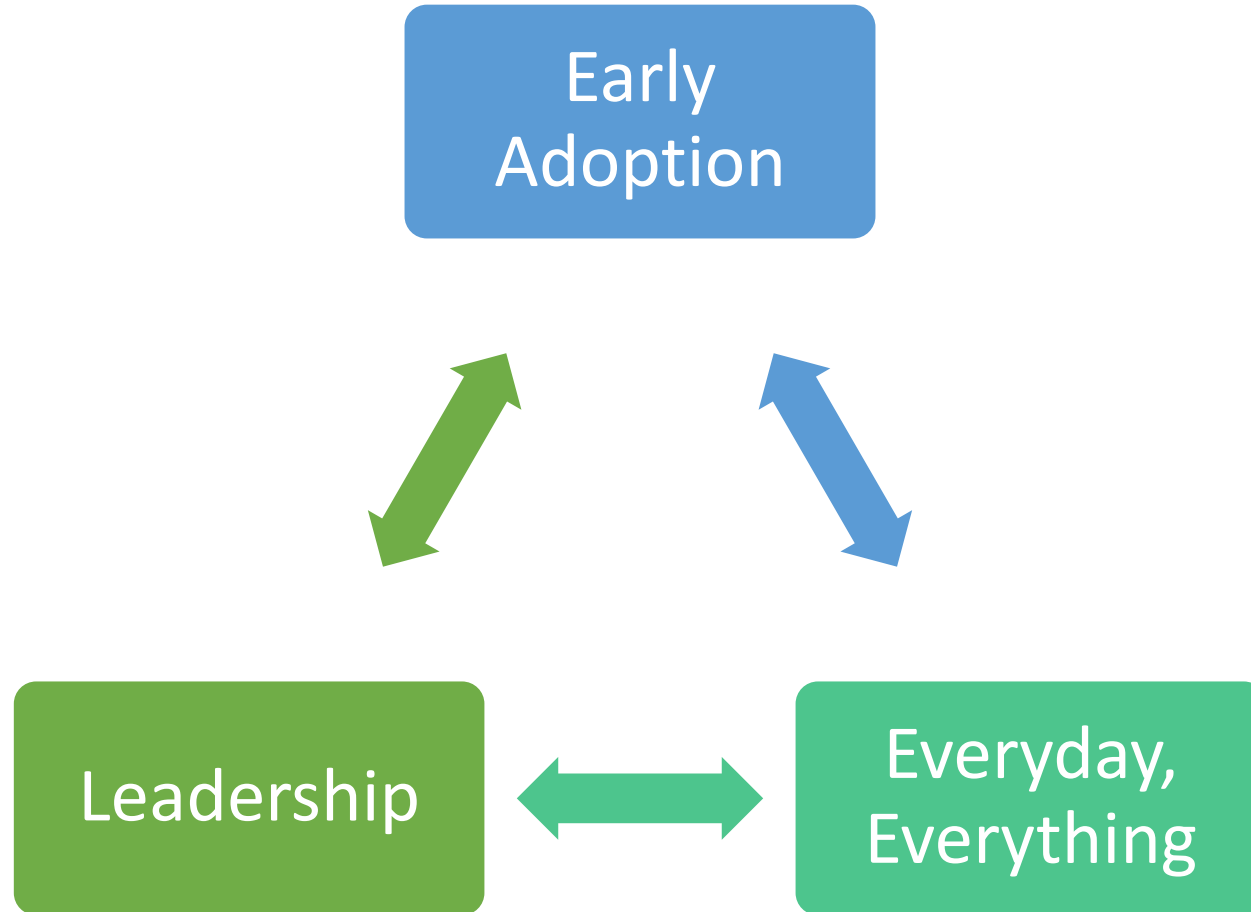
AI Mindset

PRODUCTIVE THOUGHT PROCESS

GENERATIVE AI AND PROMPT ENGINEERING

RESPONSIBLE AI

Productive Thought Process

Enterprise Level AI Reinvention

Lead with value

Understand and develop an AI-enabled, secure digital core

Reinvent talent and ways of working

Close the gap on responsible AI

Drive continuous reinvention

Generative AI is the ultimate game-changer for data and software.

LLMs are changing our relationship with information, and everything from how enterprises reach customers to how they empower employees and partners stands to transform.

Leading companies are already diving in, imagining, and building the next generation of data-driven business. And before long, it won't just be leaders. It'll be the new way digital business works.

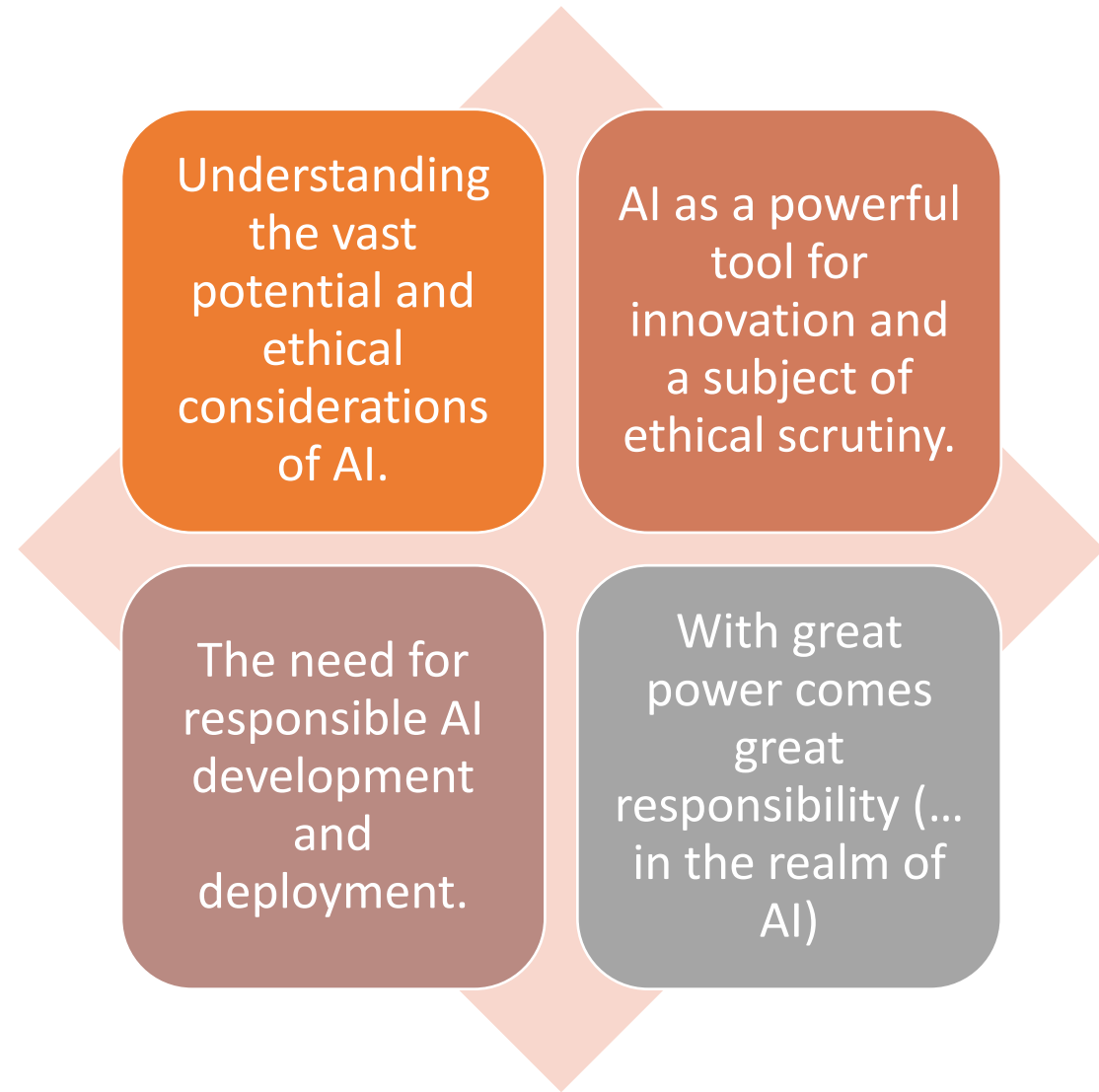# Prompt Engineering: Conversing with Generative AI

Generative AI doesn't truly understand or have beliefs; it **generates responses based on patterns** learned during training.

The secret is to continue to provide the right prompts the generate the responses that add more value.

Balancing Benefits and Risks of AI

Understanding the vast potential and ethical considerations of AI.

AI as a powerful tool for innovation and a subject of ethical scrutiny.

The need for responsible AI development and deployment.

With great power comes great responsibility (... in the realm of AI)

In Summary

AI is mainly different from any other "technology trends" and should be adopted now.

Learning formally and informally about AI is of critical importance.

The shift in mindset starts today.

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