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SMART IS
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Generative AI

Friend or Foe?

Javad Ahmad

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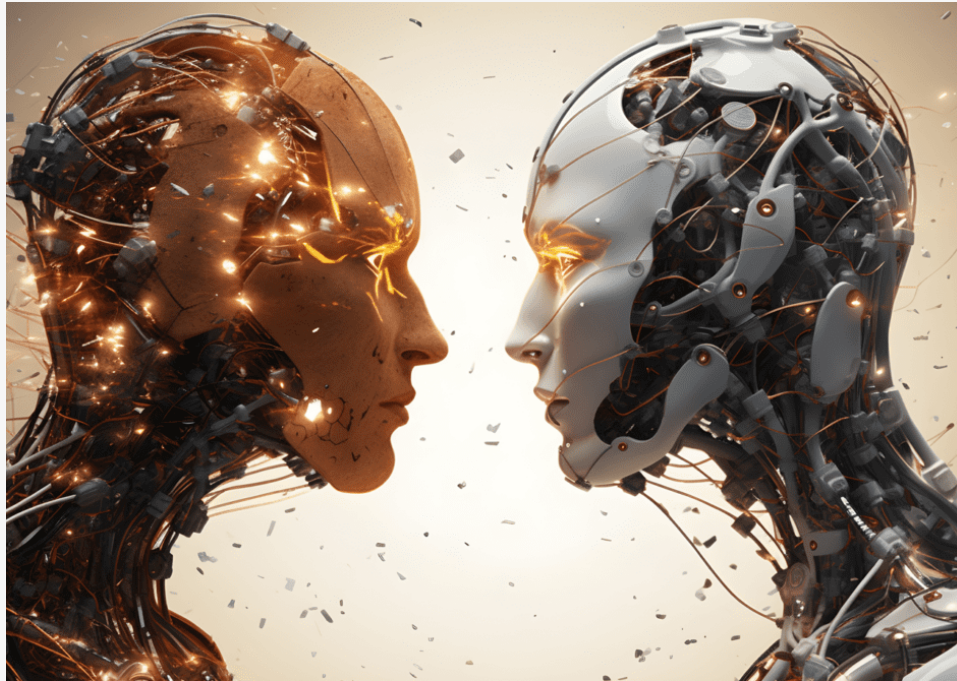




Generative AI - Friend or Foe?







Generative AI vs AI

- Generative AI (generative artificial intelligence) is a type of AI that **creates new content, such as text, images, music, audio, and videos.**
 - Generative AI creates new data and content, while traditional AI solves specific tasks with predefined rules.
 - Generative AI **uses data to create new data or content,** while AI uses data to learn, understand patterns, and make predictions or decisions.
 - Generative AI **uses unsupervised learning and generative models,** while traditional AI often uses supervised learning and discriminative models.



Dual Nature of Generative AI

Helpful tool for creativity and productivity

- Art, Music, Design, etc. Creation
- Writing Assistance
- Email Composition
- Prototyping solutions

Downside includes ethical challenges and impact on jobs

- Bias based on the data that is used to train AI ... Leading to reinforcement of existing inequalities
- Misuse of technology, e.g., Deepfakes, Misinformation, Privacy and Cybersecurity concerns
- Intellectual Property rights
- Job displacement



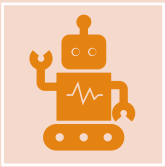
AI and Workforce *[like it or not ... change is coming]*



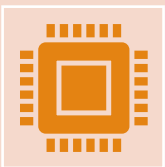
[Forrester] 36% of global workers employed full or part-time fear **losing their jobs** to automation in the next ten years

4.9% of US Jobs

0.6% of workers will lose their jobs annually



[Goldman Sachs] generative AI could **expose 300 million** full-time jobs to automation



[Univ of Pennsylvania and Open AI] Around 80% of the US workforce could have at least 10% of their **work tasks affected** by the introduction of LLMs, while approximately 19% of workers may see at least 50% of their tasks impacted



Gen AI and Workforce *[middle is at risk!]*



[Forrester] Generative AI “will **replace 2.5 million jobs** in the U.S. by 2030”

90K jobs replaced in 2023

By 2030, **generative AI will influence more than 11 million jobs** in the US, 4.5 times the number of jobs it replaces in the same period



Workers with only a **high school diploma**, about 36 million, will see a 2.7% influence level on their jobs, whereas about 64 million **workers with degrees** will experience a 16% to 21% influence.

Occupations with **lower educational requirements**, like transportation and warehousing, construction, agriculture, and manufacturing, are expected to see **very little influence** on their work from generative AI.



Generative AI’s **influence is predicted to increase with income**, where jobs with annual salaries of less than \$60,000 will see half the levels of generative AI influence than jobs paid \$90,000 or more.

However, **higher-earning professions**, including many high-income managerial jobs, fall on the other side of the **inverted U-shaped curve** in that they see waning influence from generative AI. This is mainly because their jobs depend on **AI-proof skills like human judgment, empathy, and leadership**.



Inspiration from the past



It is not the first time our workplaces and workers have been disrupted.

NASA's use of IBM Mainframe was set to displace the "human computers."

Lesson Learned:

Embracing the change and reskilling allowed the team to elevate their roles.

Hidden Figures

*By
Margot Lee Shetterly*



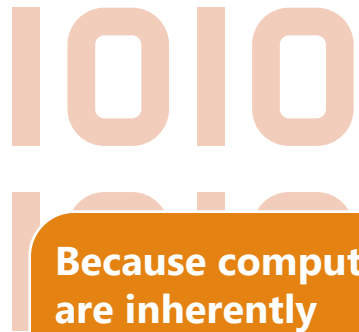
Lesson Learned:
Embracing the change and reskilling allowed the team to elevate their roles.

Key Takeaway!



Computers fail to fully replace humans.

- When NASA could not confirm computer-generated coordinates – John Glenn trusted Katherine Johnson’s math and not the computer



Because computers are inherently “dumb.”

- They cannot think outside the box and can only remain within the box of the fed algorithms and data.



Artificial Intelligence is
“Neither Artificial nor Intelligent”

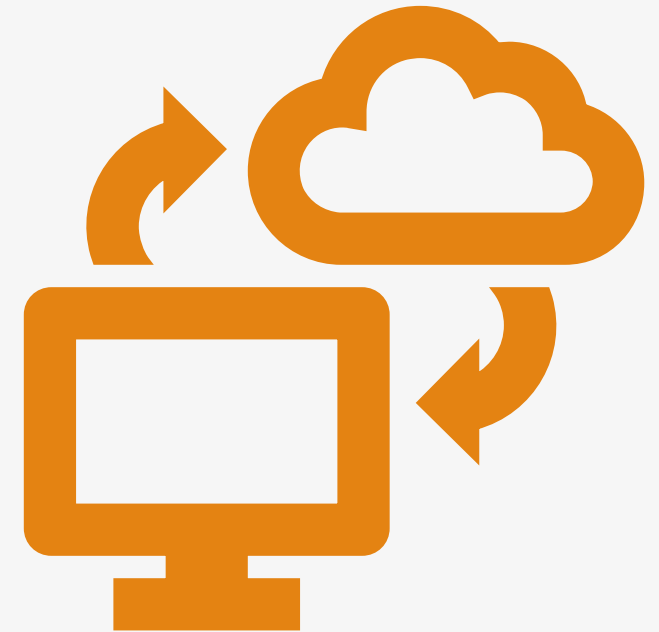
Kate Crawford



Making the case for Gen AI

Challenges

- Shift from “**Knowledge Worker**” to “**Learning Worker**”
 - Focus on learning and adaptation rather than relying on pre-existing skills (Morgan, 2016)
 - Changing work
 - Changing technology
 - Increasing complexity
 - Increasing (output) expectations
- 3 out of 4 workers believe their jobs are becoming more complex, contributing to the individual’s cognitive load
 - **Cognitive Load Theory** – individuals can effectively handle 3 to 7 new pieces of information simultaneously (John Sweller, 1988)





Making the case for Gen AI

Opportunities



Augmented Cognitive Capacity

Enhances employee's cognitive capacity, enabling them to tackle more complex tasks and make better decisions



Meaningful Work

By automating repetitive tasks, Gen AI allows employees to focus on more meaningful and creative work



New Job Opportunities

New jobs in AI research, development and maintenance



Higher-Wage Jobs

Re-weighting of the economy towards higher-wage jobs that require human creativity, problem-solving, and emotional intelligence



New Opportunities

[McKinsey] 12 million workers will have to **transition to new roles** by 2030

- Shift from customer service, office support, and food services to more healthcare, STEM, and managerial positions
 - As a result of this shift, the economy is expected to re-weight toward higher-wage jobs.
 - Workers in lower-wage jobs are up to 14 times more likely to need to change occupations than those in highest-wage positions

[World Economic Forum] AI will cause the **emergence** of 69 million new roles globally



Positive Impact of Generative AI



Generative AI's **impact on productivity** could add trillions of dollars in value to the global economy.

Generative AI could **add the equivalent of \$2.6 trillion to \$4.4 trillion** annually across the 63 use cases [Note: UK's entire GDP in 2021 = \$3.1 Trillion]



Generative AI can (potentially) **change the anatomy of work**, augmenting the capabilities of individual workers by automating some of their individual activities.

Current generative AI and other technologies can potentially automate work activities that absorb 60 to 70 percent of employees' time today.

Generative AI could **increase labor productivity by 0.1 to 0.6 percent annually through 2040.**

- Combining generative AI with all other technologies, work automation could add 0.2 to 3.3 percentage points annually to productivity growth.



Generative AI as a (technology) catalyst

Theory of Reasoned Action (Fishbein & Ajzen, 1975)

Individuals will use computers if they can see the positive benefits of computer use.



Facilitate **Technology Adoption**

Allows technology use in a **“natural” setting**, i.e., speech, hand gestures, etc.



Non-discriminatory use of technology by ALL

Everyone is a stakeholder and has the capability to take advantage of advanced technology



Some Examples

Assistance

- Phone agent
- Web bot
- Personal Assistant / Co-Pilots

Prototyping

- Programming
- Graphic Design
- Web/Video

Research

- Aggregation and Summarization
- Outline



Technology and software development

The tech industry is often at the forefront of AI adoption. Generative AI can be used for code generation, software testing, and automating various aspects of the software development lifecycle.



Healthcare and life sciences

This sector can benefit from generative AI in areas like enhanced patient care during clinical trials, drug discovery, medical imaging analysis, genomics, and healthcare record summarization.



Banking, financial services, and insurance

Financial institutions can use generative AI for tasks such as loan application processing, insurance quotes generation, synthetic data generation for fraud detection & risk assessment, investment advice, etc.



Marketing and advertising

Marketing organizations leverage GenAI for content creation, advertising optimization, and customer segmentation, helping personalize marketing efforts.



E-commerce and retail

These industries utilize AI for inventory management, optimal pricing, fraud elimination, and highly personalized recommendation systems to enhance the customer shopping experience.



Manufacturing and industrial operations

Generative AI is used in manufacturing for process optimization, predictive maintenance, quality control, and product design.



Legal services

Legal professionals can be more efficient and strategic and provide more value to clients by using AI for document review, contract analysis, legal research, and automated document generation.



Education

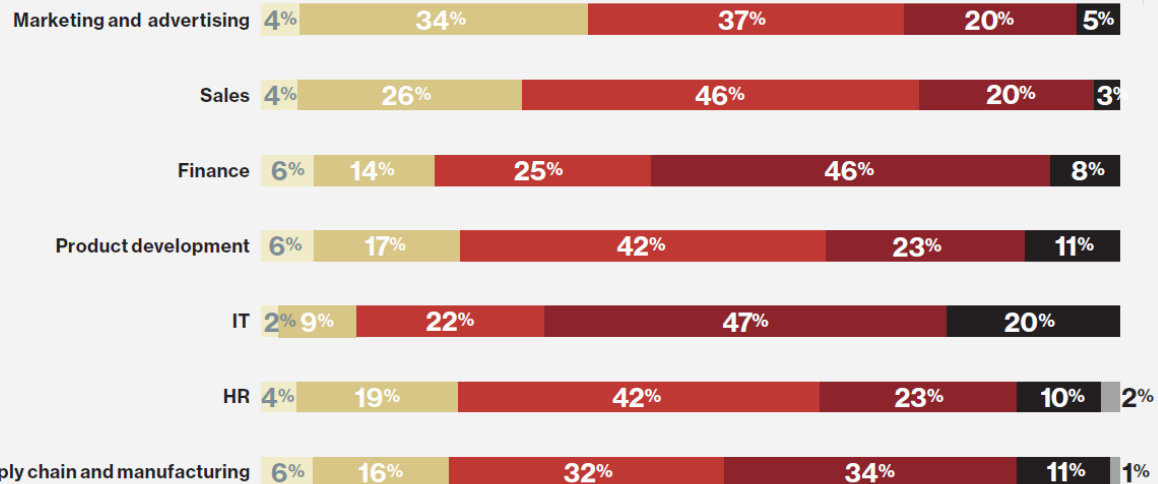
In education, generative AI can help with personalized learning, content generation, and student support through chatbots and virtual teaching assistants.

SnapLogic – Generative AI in Action: Adoption Trends, Emerging Use Cases and Tips for IT Leaders

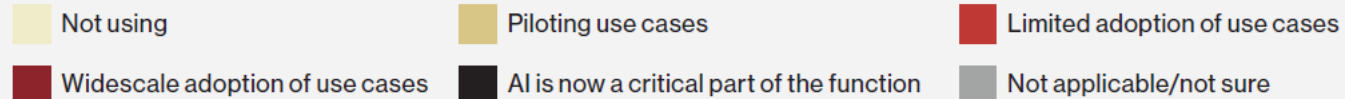
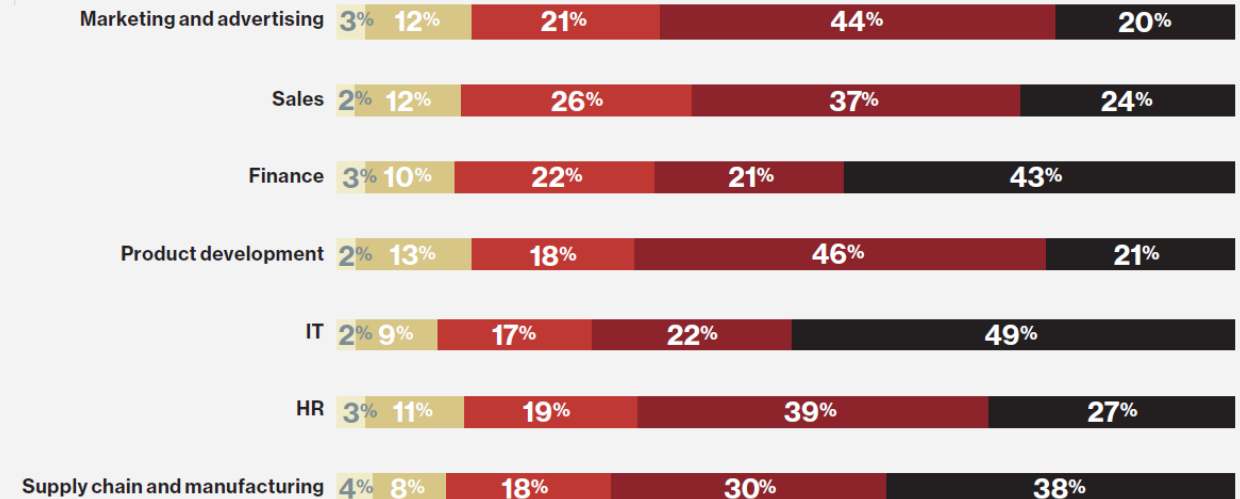


Gen AI Adoption

Current AI adoption by function (2022)



2025 forecast for AI adoption by function



Source: MIT Technology Review Insights Survey, 2022



Resistance is Futile

The adoption of Generative AI in businesses is not just a trend but a fundamental shift in how technology can augment human capabilities, leading to the argument that resistance to its adoption will be futile. Here are vital points supporting this stance:

- Competitive Advantage
- Cost and Time Efficiency
- Scaling and Adaptability
- Innovation and Creativity
- Customer Expectation



Businesses Resisting AI



Future Ready

Do not be phased out by AI but empowered by it instead!

1

Invest in The Robotics Quotient (RQ)

- How well people and organizations can adapt to, believe in, and use automation and AI to produce commercial success
- Requires training staff, establishing new standards, fostering optimistic attitudes,** and being open about AI's role in an organization's ambitions for the future of work

2

Build Around Augmentation

- AI is predicted to **influence more jobs than it will replace**
- Structure organizational strategy around integrating generative AI into the daily workflow
- Instead of restricting access to generative AI tools, companies should encourage them and prioritize more human-proof tasks like interacting with clients

3

Identify High-Influence Roles and adapt to AI as quickly as possible

- Identify roles predicted to be highly impacted by AI and incorporate AI early
- Equip workers in jobs with strong generative AI influence with **early pilot tools**
- Get an early start to gain a competitive advantage



Conclusion

- Recognize the potential and multiple facets
- Balance innovation with ethical considerations
- Embrace change for a prosperous future



Thank you!

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Reference

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