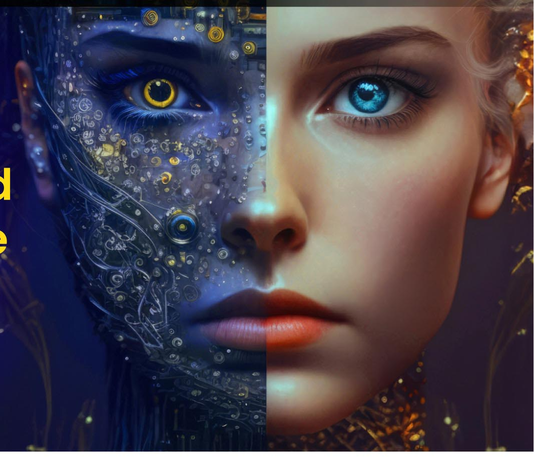
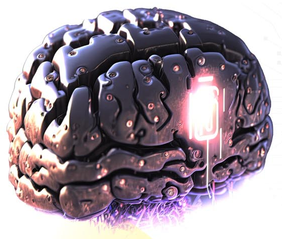
JASPER COLIN
DATA TO DECISION



Unlocking Augmented Intelligence

Separating leaders from laggards



In an era defined by technological advancements, the symbiotic relationship between human beings and machines has never been more crucial.

As the capabilities of computers continue to expand and evolve, the potential for improving human life through the integration of Artificial Intelligence (AI) becomes increasingly evident. However, a paradigm shift is underway, challenging the notion of AI as a replacement for humans and emphasizing a new perspective: **Augmented Intelligence.**

> *The great gift of human beings is that we have the power of empathy.*
> *– Meryl Streep*

Yes, human beings can sense a mysterious connection to each other, but can machines connect in such a way? Any technology or policy made on earth, can mature to a better level only with the effective participation of people. Augmented Intelligence stresses the perspective of people working with Artificial Intelligence (AI) instead of being replaced by AI.

Computers are becoming smarter and more innovative, providing incredible opportunities to improve human life. There is a push to rename **Artificial Intelligence as Augmented Intelligence**, emphasizing people's ability to collaborate with AI rather than being replaced by it.

For instance, although natural language processing (NLP) is a powerful tool that can be used for a variety of tasks, such as machine translation and text summarization, it still requires oversight from someone with linguistic knowledge and experience. Human intervention on the front end must properly frame the problem for the AI and ensure that it uses high-quality data sources. On the back end, humans must verify that AI solutions provide results that are free of ambiguity and bias. Of course, AI also lacks the empathy, common sense, intuition, ethics, and natural curiosity humans have. Fortunately, AI and humans are perfectly suited to play to one another's strengths.

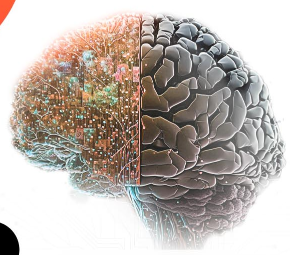
AI experts, data scientists, designers, and engineers

are currently investigating...

HOW
we can work in close proximity to machines?

WHEN
we should allow robots to make psychological judgments?

HOW
the entire society may benefit from AI innovation's productive and monetary benefits?

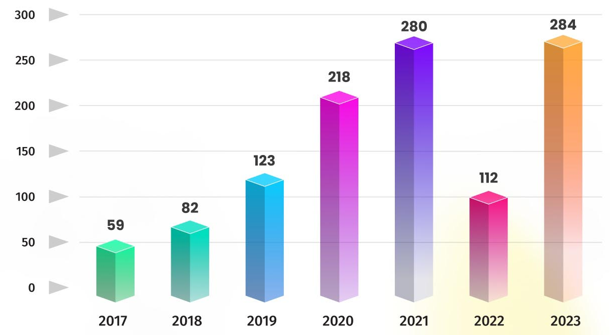


BUT WHY?

Why experts are seeking answers to these questions??

One simple answer would be **"AI is not yet a mature field"**. AI is not yet fully understood in terms of its ethical implications, potential biases, and impact on human well-being. There are still numerous challenges and considerations that need to be addressed before it can be seamlessly integrated into society.

AI Incidents and Controversies



Source: AIAAIC Repository, June 2023

AI ADOPTION & MATURITY

In Use
34%

46% **Planning to use**

Not Using
30%

INDUSTRIES ADOPTING AI

45%

38%

37%

HEALTHCARE **RETAIL** **FINANCIAL SERVICES**

The fastest growth in AI spending will come from the Media Industry with a

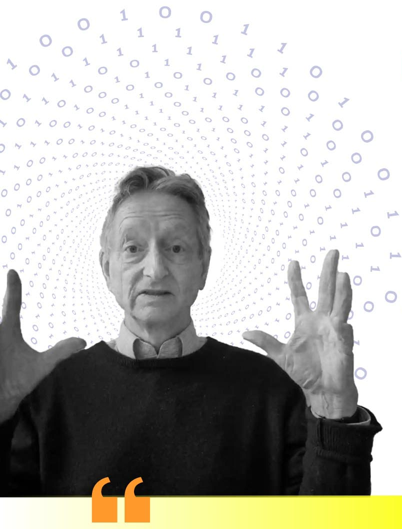
five-year CAGR of 30.2%.

AI isn't a single thing;

rather, it refers to a multitude of distinct AIs, or AIs in general, each with different characteristics that don't always replicate human intellect.

Recently, in an open letter, more than 1000 technology leaders and researchers, including Elon Musk, encouraged AI labs to put a hold on the creation of the most cutting-edge systems, stating that such tools pose "profound risks to society and humanity."

> *I'm increasingly inclined to think that there should be some regulatory oversight, maybe at the national and international level, just to make sure that we don't do something very foolish. I mean with artificial intelligence* ***we're summoning the demon.***
>
> ***-Musk***



Even the GODFATHER of AI warns about it.

Yes, you heard it right. **Geoffrey Hinton, renowned as the godfather of AI**, has issued a **noteworthy warning** about the **potential dangers of AI chatbots**. Despite his influential contributions to the field, Hinton recently **expressed regret for his work** and announced his departure from Google.

> *I've come to the conclusion that the kind of intelligence we're developing is very different from the intelligence we have... So, it's as if you had 10,000 people and whenever one person learned something, everybody automatically knew it. And that's how these chatbots can know so much more than any one person.*
>
> ***-Hinton***

IS HE RIGHT?

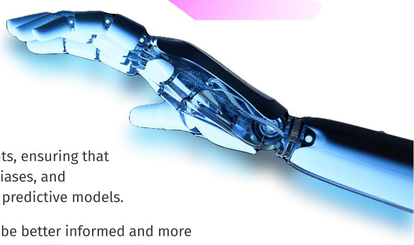
Hinton's first worry has already come true: in a world where so much content on the internet is created by AI, it has become impossible to tell what is true and what is not.

The future is indeed scary,

as the proliferation of AI-generated content on the internet has exacerbated the challenge of discerning truth from falsehood.

WHAT IS THE WAY FORWARD FOR INDUSTRY AND BUSINESS?

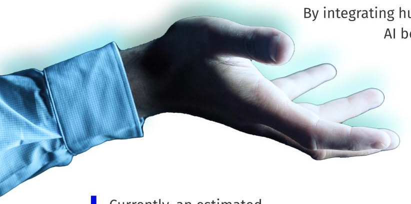
When teamed with humans, augmented intelligence systems have the benefit **"of a bigger picture on common sense,"** which AI systems tend to lack due to their deep and narrow view of data and information.



Augmented intelligence enhances human intelligence by swiftly analyzing vast amounts of data and extracting valuable insights, a task that would be tedious and time-consuming for humans alone.

Humans play a crucial role as custodians of these insights, ensuring that diverse and sufficient data is provided, monitoring for biases, and identifying trends that may indicate the need to update predictive models.

Strategic implementation of AI empowers individuals to be better informed and more efficient, while still retaining the essential human element. In this approach, humans learn from AI systems, and vice versa, leading to mutual improvement and a productive partnership.



By integrating human expertise and judgment with machine intelligence, AI becomes an immensely powerful and transformative tool.

Therefore, there is a growing movement to refer to it as **Augmented–not Artificial–Intelligence**, emphasizing the collaborative partnership between humans and machines. This is the crux of the notion of AI-augmented intelligence.

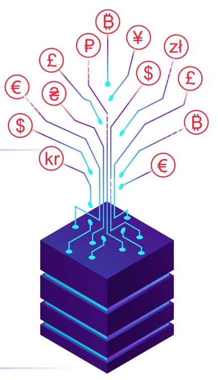
Currently, an estimated

20,000 companies are already implementing augmented intelligence,

with a remarkable growth rate of **25.2%** in recent years.
This trend is set to continue, with an **expected 80% of emerging technologies** having foundations in augmented intelligence within a year.

The applications of augmented intelligence in various industries are vast. For instance, in the telecom industry, augmented intelligence helps telecom companies improve their network performance and optimize maintenance processes. By analyzing data from various sources, including network equipment, sensors, and customer usage patterns, telcos can identify potential network failures and proactively schedule maintenance before any disruption occurs. According to a study by Jasper Colin, implementing predictive maintenance can **reduce equipment downtime by up to 48%** and **lower maintenance costs by 15–40%.**

Similarly, in industries like oil and gas, AI optimizes the performance of high-value equipment, improving operational efficiency and reducing costs. Retailers leverage AI to gain deep insights into customers' preferences, enabling them to enhance personalization and customer experiences.



One of the **key strengths of AI is its ability to effectively deconstruct and analyze big data**, which encompassing both structured and unstructured information. By transforming data into actionable insights, AI empowers organizations to compete with data-driven disruptors and leverage the tsunami of information available.

In fact, the fear of disruption motivates 75% of organizations to intensify their investments in big data and AI.

Implementing AI-driven augmented intelligence enables organizations to be bolder, make informed decisions, and leverage the full potential of human intelligence. It equips businesses with the tools to understand more, get closer to the truth, and gain a competitive edge in the ever-evolving landscape.

By embracing AI technologies and harnessing the power of Augmented Intelligence, organizations can effectively navigate the complexities of the modern business world, uncover new opportunities, and drive innovation and success.

AUGMENTED INTELLIGENCE IS NO LONGER OPTIONAL

> Augmented Intelligence is a development of AI that includes human association in a procedure of constant inclusion, focused on improving the results obtained.

Augmented Intelligence is no longer optional, as it represents a pivotal shift in the approach to AI. It is a big data-driven technology strategy that combines machine learning, natural language processing, and data analytics to create relevant data for targeted decisions. It is a branch of AI that incorporates human collaboration in a process of continuous inclusion with the goal of improving outcomes. Humans offer a range of examples, the machine develops a model, and the findings are reported to people who assess the model's nature and determine how to reintroduce the outcomes. This invention is based on AI tactics that prioritize human effort and involve it in a continuous loop.

ARTIFICIAL INTELLIGENCE	HUMAN BEING
01 Speed	Abstract ideas 01
02 Volume	Non-linear thinking 02
03 Accuracy	Highly adaptive 03
04 Specialized learning and comprehension	Broad learning and comprehension 04

A new forecast from Jasper Colin shows that by end of 2023 organizations can save up to $1.2 trillion in costs through the adoption of augmented intelligence technologies.

One crucial aspect of Augmented Intelligence is the emphasis on human-centric design. Rather than focusing solely on technological advancements, AI experts strive to develop AI systems that are intuitive, user-friendly, and aligned with human needs and values. This approach ensures that humans remain in control and can effectively interact with AI tools, incorporating their expertise and ethical considerations into the decision-making process.

Augmented Intelligence also addresses the ethical concerns surrounding AI. By actively involving humans in the loop, it encourages transparency and accountability in AI systems. Humans can provide oversight and ensure that AI algorithms are fair, unbiased, and respect fundamental human rights. This collaborative approach helps prevent the reinforcement of existing biases and discrimination within AI technologies.

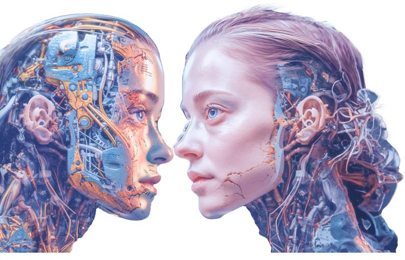
Augmented Intelligence represents a paradigm shift in the approach to AI. It emphasizes the collaboration between humans and machines, leveraging the strengths of both to achieve more effective and ethical outcomes. By placing humans at the center of AI design and decision-making, Augmented Intelligence strives to enhance human capabilities, address ethical concerns, and promote the collective well-being of society.

Augmented Intelligence is not an option but a necessity.

It is a powerful tool that harnesses the full potential of AI while ensuring that human values and ethics remain at the forefront. By pursuing transparency, explainability, and accountability, we can shape an AI landscape that truly augments human capabilities, drives positive change, and creates a more inclusive and equitable future for all.

Augmented Intelligence Is Pursued For Several Compelling Reasons

1. Enhanced Decision-making
2. Improved Efficiency and Productivity
3. Personalization and Customization
4. Innovation and Discovery
5. Ethical Considerations
6. Error Reduction and Risk Mitigation
7. Cost Savings



HEAD-TO-HEAD

Understanding the differences between Artificial Intelligence and Augmented Intelligence is critical for businesses as they strive to remain competitive in today's data-driven world.

By selecting the most appropriate technology for their needs, businesses can improve efficiency, reduce costs, and gain a competitive advantage.

	ARTIFICIAL INTELLIGENCE	AUGMENTED INTELLIGENCE
Purpose	Designed to perform specific tasks	Customizable to support a variety of decision-making processes
Method	Relies on machine learning algorithms and data	Combines data, human input, and machine intelligence
Objective	Designed to perform specific tasks	Customizable to support a variety of decision-making processes
Autonomy	More autonomous and can learn and improve without human input	Requires human input to learn and improve
Data dependency	Requires large amounts of data to function effectively	Can work with smaller amounts of data
Flexibility	Less flexible and adaptable	More adaptable and customizable
Learning	Utilizes machine learning algorithms to improve performance	Learning is primarily driven by human input, but can also incorporate machine learning algorithms
Decision making	Utilizes technology to drive and make decisions	Uses humans as the decision-makers and technology as an enhancement aid
Market Size	To reach $191 billion by 2025, at a CAGR of 36.62%	To reach $56 billion by 2025, at a CAGR of 25.32%
Job Creation	Expected to create 2.3 million jobs globally by 2025	A net increase of 12 million new jobs globally by 2025

It is predicted that the contribution of digital workers will increase by **around 50% over the next two years,** indicating a true shift towards a future based on human-machine cooperation.

AREAS WHERE **AUGMENTED INTELLIGENCE** IS NEEDED AND CAN BE IMPLEMENTED:

01 HEALTHCARE

By harnessing the power of augmented intelligence in healthcare, medical professionals can benefit from AI algorithms that analyze extensive patient data, detect patterns and correlations, and provide recommendations.

02 EDUCATION

Intelligent tutoring systems can provide personalized guidance to students, adaptive learning platforms can tailor educational content to individual needs, and AI-powered tools can automate grading and feedback processes.

03 CUSTOMER SERVICE

Augmented Intelligence can improve customer service by automating repetitive tasks, analyzing customer data to provide personalized recommendations and support, and using chatbots and virtual assistants to handle customer inquiries.

Augmented intelligence can enable telecommunication companies to enhance their customer experience by personalizing their services and providing proactive support. By analyzing customer data, including historical usage patterns, preferences, and interactions, telcos can understand individual customer needs and offer tailored service recommendations. According to a report by Jasper Colin, personalization can lead to a **12-18%** increase in revenue for telecom companies and **reduce churn by up to 25%.**

04 FINANCE AND BANKING

Can be utilized for fraud detection, risk assessment, algorithmic trading, and personalized financial advice.

05 MANUFACTURING AND LOGISTICS

Can optimize production processes, predict maintenance needs, and streamline supply chain management. It can analyze real-time data from sensors and devices, enabling proactive decision-making and efficiency improvements.

06 CYBERSECURITY

Can strengthen cybersecurity measures by analyzing network traffic, detecting anomalies, and identifying potential threats. Human cybersecurity professionals can then validate these findings, investigate specific incidents, and make informed decisions to mitigate risks.

According to the Communications Fraud Control Association (CFCA), telecom fraud results in an estimated global loss of $29.2 billion annually. Implementing augmented intelligence-based fraud detection systems can help telecom companies significantly reduce financial losses and protect their customers' sensitive information.

07 HUMAN RESOURCES

Can support HR professionals in talent acquisition, employee onboarding, performance management, and workforce planning. It can automate candidate screening, recommend training and development programs, and provide data-driven insights for decision-making.

08 RESEARCH AND DEVELOPMENT

Can aid researchers in data analysis, literature review, and hypothesis generation. It can analyze scientific papers, identify relevant information, and provide suggestions for further investigations.

09 MARKETING AND ADVERTISING

Can improve marketing campaigns by analyzing customer behavior, segmenting audiences, and personalizing content. It can optimize ad targeting, recommend marketing strategies, and predict customer preferences.

10 LEGAL SERVICES

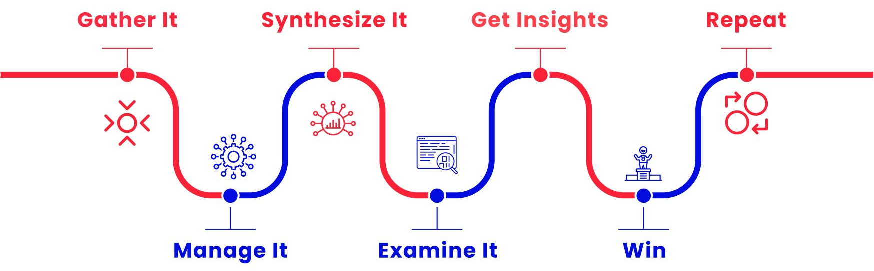
Can assist legal professionals in legal research, contract analysis, and case prediction. It can analyze legal documents, identify relevant precedents, and provide insights to support legal decision-making.

These are just a few examples of the areas where Augmented Intelligence can be implemented. As AI technology advances, the potential for AI augmentation in various industries and domains continues to expand, offering new possibilities for improving human productivity and decision-making.

Optional becomes must-have

Augmented Intelligence, driven by AI technologies, plays a pivotal role in enabling organizations to make smarter decisions, unleash human intelligence, and extract value from vast amounts of data. It separates leaders from laggards, empowering organizations to tackle their greatest challenges and accelerate business growth.

It provides a powerful solution for industry and business, helping organizations unlock the full potential of their information. Organizations must find ways to harness their information:



Gather It

Manage It

Synthesize It

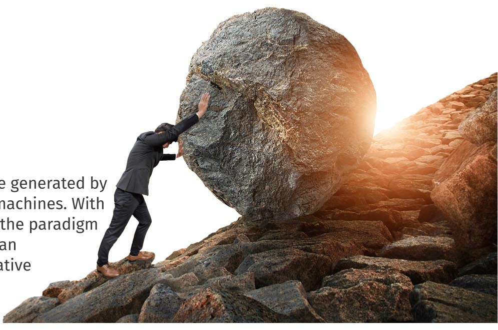
Examine It

Get Insights

Win

Repeat

Humans cannot do this on their own.



This volume and complexity of data are generated by machines, and they will be parsed by machines. With the advent of augmented intelligence, the paradigm has shifted from solely relying on human capabilities to embracing the collaborative power of humans and machines.

Machine learning and artificial intelligence technology are essential for businesses. AI can perform information processing feats that humans cannot. It has the ability to generate insights that we could never have anticipated. And, as we supplement human intelligence with artificial intelligence, the boundaries of what is feasible are expanding on a daily basis.

Optional becomes a must-have as organizations recognize the transformative power of augmented intelligence. It empowers decision-makers with unparalleled insights, enabling them to make informed choices, drive innovation, and stay ahead of the curve. The era of solely relying on human intelligence has given way to a new era where human-machine collaboration is at the forefront of success. By embracing augmented intelligence, organizations can unleash the true power of their information assets and position themselves as leaders in their industries.

It is easier said than done.

Jasper Colin, with years of experience in the field, presents a set of considerations and guidelines for incorporating human involvement in AI-driven processes. These recommendations are based on a combination of use cases, lessons learned from mistakes, suggestions from stakeholders, and the expertise gained from working with various industries. By following these guidelines, companies can establish standard operating procedures (SOPs) that effectively integrate human decision-makers with AI technologies, ensuring both effectiveness and ethics in their operations.

Here are some common considerations and guidelines for incorporating human involvement in AI-driven processes:

OVERSIGHT AND GOVERNANCE

Establish clear governance structures to oversee AI systems and their integration into business processes. This includes defining roles and responsibilities for human decision-makers and ensuring accountability for AI outcomes.

TRAINING AND EDUCATION

Provide adequate training and education to employees involved in AI-related tasks. This can include training on the capabilities and limitations of AI systems, data handling and privacy protocols, and ethical considerations in AI implementation.

DATA QUALITY AND PREPARATION

Humans play a crucial role in ensuring the quality and relevance of data used to train AI models. They can be responsible for data collection, data labeling, and data preprocessing to ensure the accuracy, completeness, and representativeness of the data used in AI systems.

VALIDATION AND INTERPRETATION

Human involvement is essential in validating the outputs of AI algorithms and interpreting the results in context. This includes reviewing and verifying AI-generated recommendations, analyzing complex or ambiguous situations, and making informed decisions based on AI insights.

CONTINUOUS MONITORING AND EVALUATION

Implement processes for ongoing monitoring and evaluation of AI systems' performance and impact. Humans can assess the accuracy, fairness, and reliability of AI outputs, identify potential biases or errors, and provide feedback for system improvements.

ETHICAL CONSIDERATIONS

Establish ethical guidelines and frameworks to guide human involvement in AI systems. This involves considering the potential social, cultural, and ethical implications of AI algorithms and ensuring adherence to legal and regulatory requirements.

TRANSPARENCY AND ACCOUNTABILITY

Foster transparency by promoting clear communication between AI systems and human users. Humans should have access to information on how AI systems work, their limitations, and the factors influencing their decision-making processes. This allows for better understanding and trust in AI-driven outcomes.

FLEXIBILITY AND ADAPTABILITY

Encourage a culture of adaptability and continuous learning in the face of evolving AI technologies. Human involvement should be adaptable to changing business needs, technological advancements, and emerging challenges, enabling organizations to leverage the benefits of AI while addressing new requirements.

It's important to note that SOPs will vary across organizations based on their unique needs and circumstances. Companies should assess their specific AI use cases, consider regulatory requirements, and tailor their SOPs accordingly to ensure the effective integration of AI technologies with human involvement.

By incorporating these considerations and guidelines into their SOPs, companies can navigate the complexities of AI-driven processes with confidence, ensuring that human involvement remains at the forefront of decision-making and ethical practices.

Jasper Colin stands ready to support organizations in their journey towards augmented intelligence, leveraging its expertise and industry insights to drive meaningful and responsible AI implementation.

> *The question of whether a computer can think is no more interesting than the question of whether a submarine can swim.*
>
> ***-Edsger W. Dijkstra***

This thought-provoking AI quote by Dijkstra **encapsulates a subtle depth that often requires multiple readings to fully grasp its meaning.**

It raises an important question regarding the path to achieving true AI.

One prevailing perspective suggests that we must reverse engineer human thinking, understanding how humans think in order to create AI capable of emulating similar cognitive processes.

However, there are dissenting voices that dismiss this notion as nonsense. They argue that we can develop AI without directly relying on the intricacies of the human brain. According to this viewpoint, the key is to create AI systems that exhibit intelligence, regardless of the underlying mechanisms involved. Whether we achieve this using sophisticated technology or simple materials like rubber bands and worn cardboard becomes inconsequential. Drawing a parallel would be akin to asserting that a submarine functions because we first understood how humans swim (albeit with some similarities).

In essence, this quote challenges the prevailing belief that replicating human thinking is a prerequisite for achieving true AI, inviting us to explore alternative approaches and perspectives.

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