

**ARE WE READY FOR SKYNET?  
WHAT COULD GO WRONG?**

**P E R R Y E L L I S  
I N T E R N A T I O N A L**

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# Are we ready for Skynet? What could go wrong?

In this session, join Eric S. Ackerman, Ph.D. who is the VP of Commercial Technology at Perry Ellis, and former VP at Magic Leap Inc., as he explores:

**What is Artificial Intelligence**

**What is AI's financial impact**

**Who will use AI**

**What jobs will AI automate/replace**

**What are the advantages & disadvantages of AI**

**What do people think about AI**

**Types of AI**

**Natural Language Processing (NLP)**

**What is Machine Learning (ML)**

**What is Deep Learning (DL)**

**Applications of AI in Personalized Shopping**

**Applications of AI in Production**

**What is ChatGPT**

**ChatGPT Competitors**

**AI Hallucinations**

**Fashion Technology Companies**

**Pause Giant AI Experiments: An Open Letter**

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# Presenter Brief Biography



AI thinks I look better with hair!!!



Eric S. Ackerman, Ph.D. is currently the Vice President of Commercial Technology at Perry Ellis International, Inc. Dr. Ackerman has been active in the engineering and information sciences field for over 30 years. His recent experiences includes working as a Vice President at Magic Leap (Augmented Reality (AR) startup) and being the Dean of NSU's College of Engineering and Computer Science.

Dr. Ackerman has been involved in numerous engineering projects including designing space hardware that has flown on the three Space Shuttles STS-91 Discovery, STS-134 Endeavour, and STS-135 Atlantis. Active in the local community Dr. Ackerman is and was the past President (10 years) of the Federal Bureau of Investigation (FBI) South-Florida InfraGard chapter and currently is President Emeritus. Dr. Ackerman is currently involved in multiple leadership positions within IEEE and was a past IEEE-USA Vice President. He is a senior member of IEEE, ACM, ASEE, AIS, AIAA, and board member of Upsilon Pi Epsilon. As a pastime he collects and restores vintage computers, arcade, and pinball machines ([www.imcth.org](http://www.imcth.org))

Linkedin page: <https://www.linkedin.com/in/ericsackerman/>







# What could possibly go wrong?



# What is Artificial Intelligence (AI)?



Doing a keynote on AI for AAPN need a welcome message

< 2 / 2 >



Sure, here's a sample welcome message for your keynote on AI for AAPN:

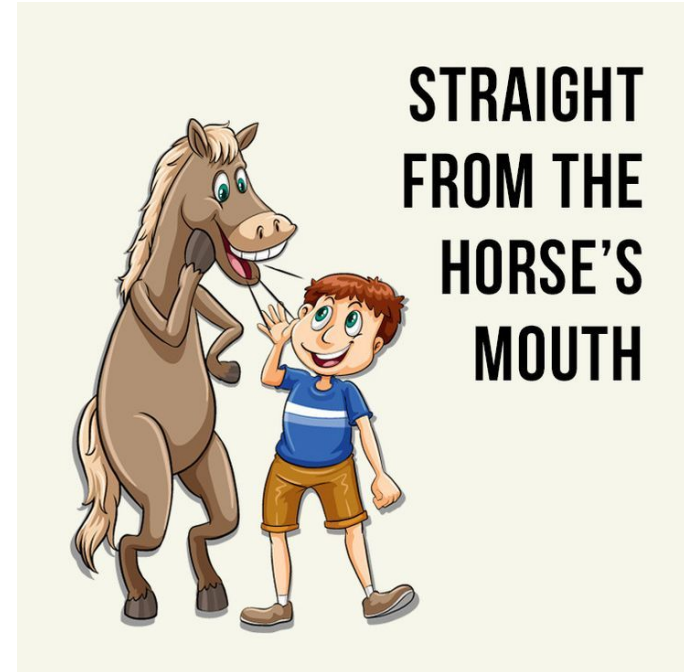


Good morning/afternoon/evening everyone and welcome to this keynote on Artificial Intelligence. I'm thrilled to be here today with all of you, representing AAPN. As we embark on this journey together, I'm excited to explore the possibilities and potentials of AI and how it's changing the world we live in.

Artificial Intelligence is one of the most significant and rapidly developing fields of our time, and it has already revolutionized the way we live and work. AI-powered systems are now commonplace in our daily lives, from virtual assistants on our phones to personalized shopping experiences, predictive maintenance, medical diagnosis, and even autonomous vehicles.

As AAPN's keynote speaker, I am honored to share with you my knowledge, insights, and experiences in this exciting area of AI. My goal is to provide you with a comprehensive understanding of AI, its applications, its opportunities, and its challenges.

So, I invite you to sit back, relax, and enjoy this keynote, as we explore the world of Artificial Intelligence and discover the incredible potential it holds for the future. Thank you all for joining us today, and let's get started!





# What is Artificial Intelligence (AI)?



what is the AAPN?



I apologize for any confusion caused. As of my knowledge cutoff in September 2021, there is no widely recognized organization or acronym known as "AAPN" in the context of artificial intelligence or technology in general. It's possible that AAPN refers to a specific organization, association, or event that has emerged after my knowledge cutoff or is specific to a certain industry or region.



To provide accurate information, it would be helpful to provide more context or clarification about the specific reference to AAPN.



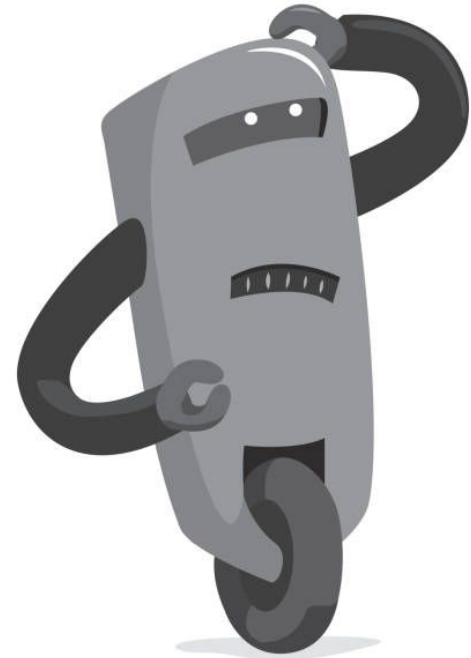
What is the American apparel Producers Network



I apologize for the confusion. As of my knowledge cutoff in September 2021, I couldn't find any information about an organization called the "American Apparel Producers Network" (AAPN). It's possible that the organization may have been formed or gained prominence after that time or is a smaller, niche organization within the apparel industry.



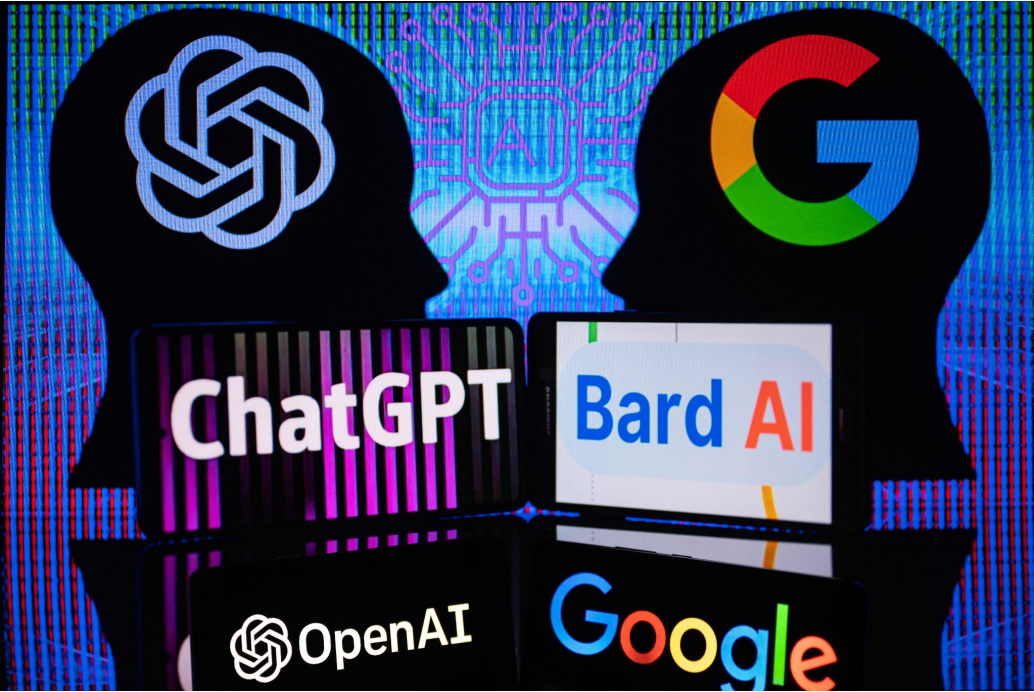
To obtain accurate and up-to-date information about the American Apparel Producers Network, I recommend conducting a search on the internet or reaching out to industry associations, trade publications, or professionals in the apparel industry who may have knowledge or information about the organization.



# What is Artificial Intelligence?

Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) have become the most talked-about technologies in today's commercial world as companies are using these innovations to build intelligent machines and applications.

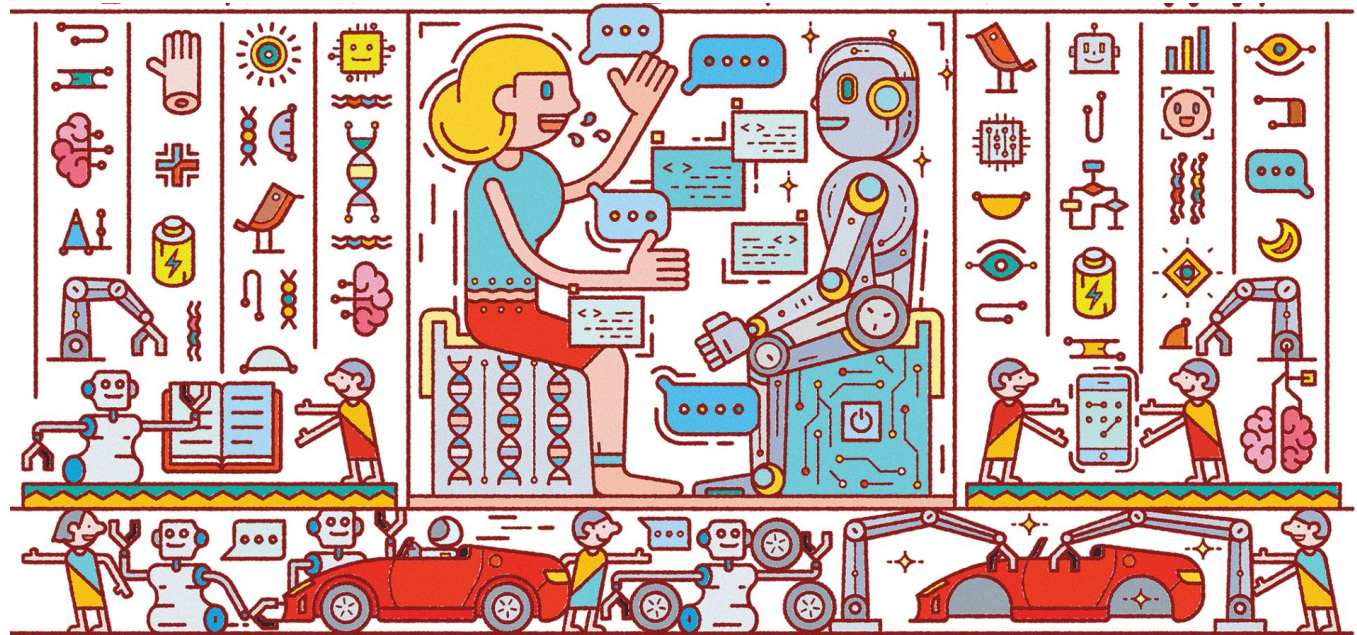
AI, is the process of imparting data, information, and human intelligence to machines. **The main goal of Artificial Intelligence is to develop self-reliant machines that can think and act like humans.** These machines can mimic human behavior and perform tasks by learning and problem-solving. **Most of the AI systems simulate natural intelligence to solve complex problems.**



# How is AI being used?

AI is now being used in almost every sector of business:

- Transportation
- Healthcare
- Banking
- Retail
- Entertainment
- E-Commerce
- Manufacturing
- Technology
- Security
- Logistics

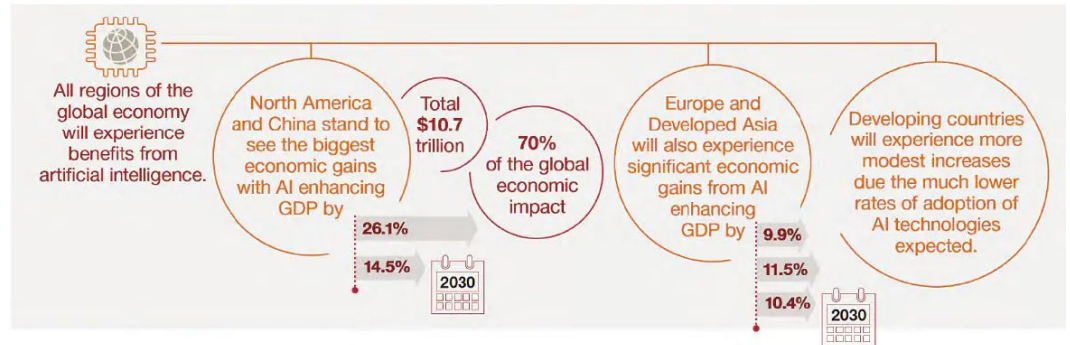
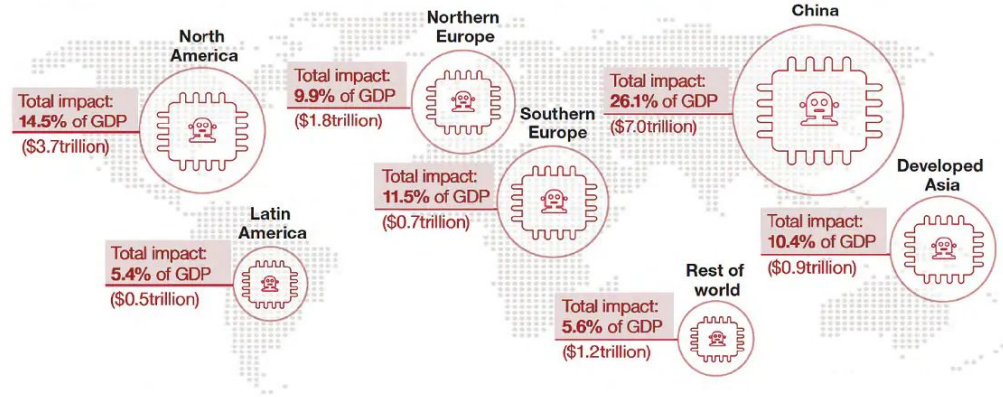


# What is AI's financial impact?

Experts regard AI as a factor of production, which has the potential to introduce new sources of growth and change the way work is done across industries.

**PWC predicts that AI could potentially contribute \$15.7 trillion to the global economy by 2035.** China and the United States are primed to benefit the most from the coming AI boom, accounting for nearly 70% of the global impact.

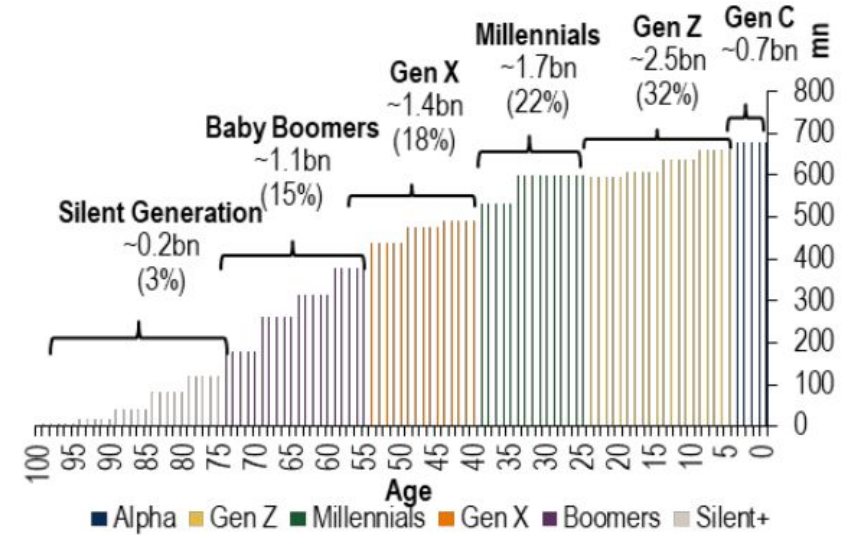
## Sizing the prize – Which regions gain the most from AI?



# Who will use AI?

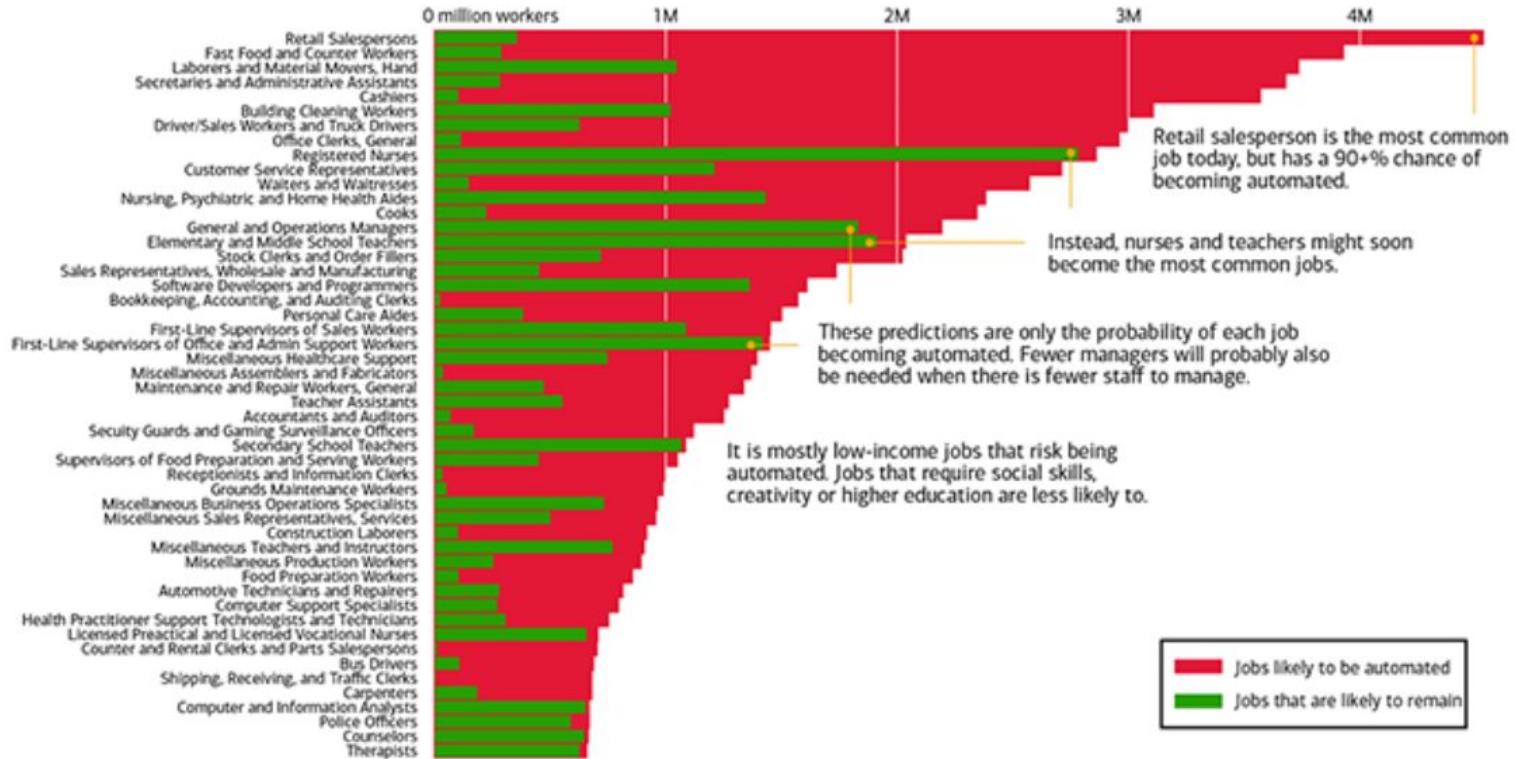
As the population ages and **Gen Zs and Gen Cs** make up a larger portion of the population, AI adoption will increase because these two generations, particularly Gen C, will be unable to live without tech in most aspects of their lives. **40% of Gen Z social interaction is online.**

40% of Gen Zs are aware of AI compared to only 6% of Boomers. Similarly, 30% of Gen Zs have a positive opinion about them compared to only 4% of Boomers.



Source: UN

# What jobs will AI automate/replace?



**Source:** US Bureau of Labor Statistics, Frey & Osborne, The Future of Employment, Henrik Lindberg, Visual Capitalist

# What are the advantages & disadvantages of AI

## Pros

- It reduces human error
- It never sleeps, so it's available 24x7
- It never gets bored, so it easily handles repetitive tasks
- It's fast

## Cons

- It's costly to implement
- It can't duplicate human creativity
- It will definitely replace some jobs, leading to unemployment
- People can become overly reliant on it

ARTIFICIAL INTELLIGENCE			
	PROS		CONS
	Efficiency and Accuracy		Uncontrollability
	Effective Data Acquisition and Analysis		AI Machines Don't (Currently) Have Any Emotion
	Reducing Costs (Cheaper Products & Services)		Degradation (unable to self-repair)
	Improving Human Decision Making		A Reduced Number of Jobs For Humans
	Improving Human Workflows		High Costs
	The Mechanical Advantage		Lacking Creativity and Out-of-the-Box Thinking
	Understanding High-Dimensional Data		Ethical Considerations

Source - [justunderstanddata.com](https://justunderstanddata.com)

# What do people think about AI?

“AI doesn't have to be evil to destroy humanity – if AI has a goal and humanity just happens in the way, it will destroy humanity as a matter of course without even thinking about it, no hard feelings.” – **Elon Musk, Technology Entrepreneur, and Investor.**



“Artificial Intelligence, deep learning, machine learning—whatever you're doing if you don't understand it—learn it. Because otherwise, you're going to be a dinosaur within 3 years.” - **Mark Cuban, American entrepreneur, and television personality.**



“In deep learning, the algorithms we use now are versions of the algorithms we were developing in the 1980s, the 1990s. People were very optimistic about them, but it turns out they didn't work too well.” - **Geoffrey Hinton, Father of Deep Learning**





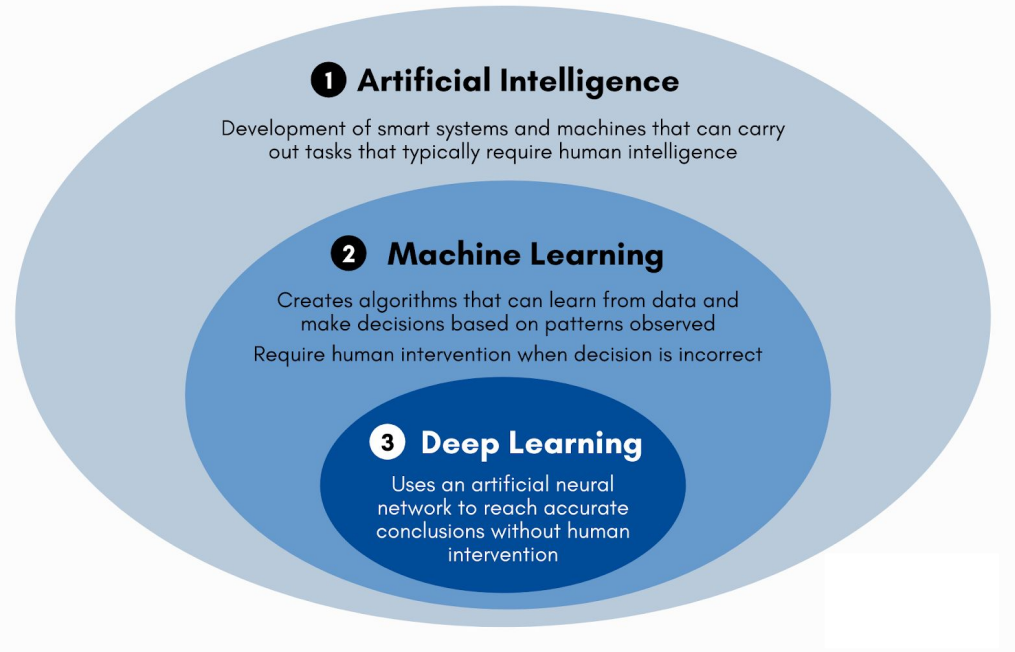
# So what is AI?

**Artificial Intelligence** is the concept of creating smart intelligent machines.

**Machine Learning** is a subset of artificial intelligence that helps you build AI-driven applications.

**Deep Learning** is a subset of machine learning that uses vast volumes of data and complex algorithms to train a model.

## ARTIFICIAL INTELLIGENCE VS MACHINE LEARNING VS DEEP LEARNING



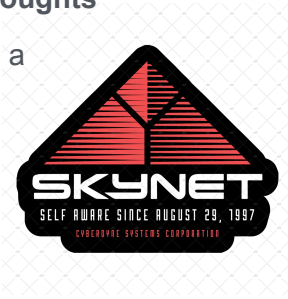
# Types of AI?

**Purely Reactive** - These machines do not have any memory or data to work with, **specializing in just one field of work**. For example, in a chess game, the machine observes the moves and makes the best possible decision to win. IBM's Deep Blue that defeated chess grandmaster Garry Kasparov is a reactive machine that sees the chessboard pieces and reacts to them

**Limited Memory** - These machines **collect previous data and continue adding it to their memory**. They have enough memory or experience to make proper decisions, but memory is minimal. For example, this machine can suggest a restaurant based on the location data that has been gathered. **This kind of technology is used in self-driving vehicles.**

**Theory of Mind** - This kind of AI can **understand thoughts and emotions**, as well as interact socially. However, a machine based on this type is yet to be built.

**Self-Aware - Self-aware machines** are the future generation of these new technologies. They will be intelligent, sentient, and conscious.



## Types of Artificial intelligence

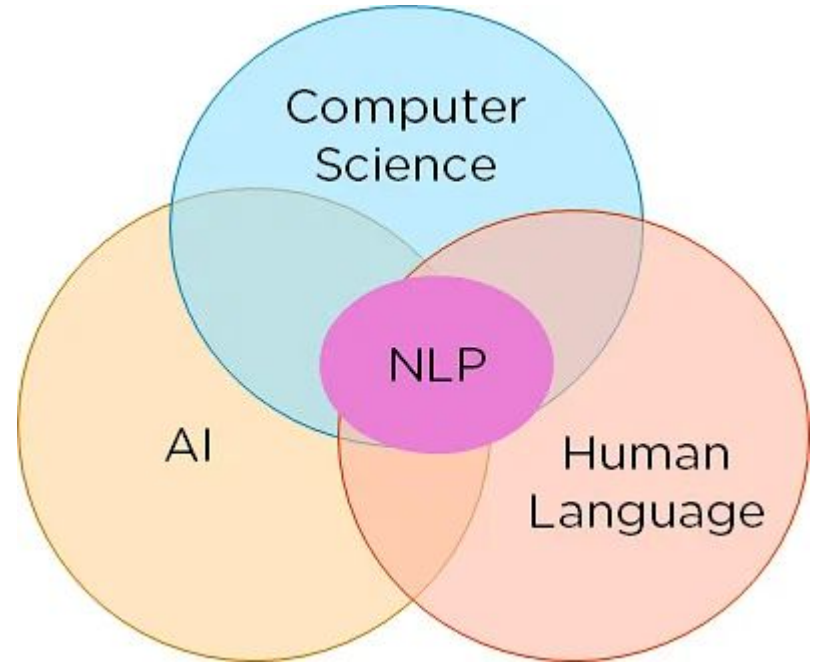
<div style="background-color: #004a99; color: white; padding: 5px; border-radius: 10px; text-align: center; margin-bottom: 10px;"><b>Based on Ability</b></div> <ol style="list-style-type: none"> <li>1. Narrow AI</li> <li>2. General AI</li> <li>3. Super AI</li> </ol>	<div style="background-color: #004a99; color: white; padding: 5px; border-radius: 10px; text-align: center; margin-bottom: 10px;"><b>Based on Functionality</b></div> <ol style="list-style-type: none"> <li>1. Reactive Machines</li> <li>2. Limited Memory</li> <li>3. Theory of Mind</li> <li>4. Self-Awareness</li> </ol>
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# Natural Language Processing (NLP)?

Humans communicate with each other using words and text. **The way that humans convey information to each other is called Natural Language.**

However, computers cannot interpret this data, which is in natural language, as they communicate in 1s and 0s. Hence, you need computers to be able to understand, emulate and respond intelligently to human speech.

**NLP refers to the branch of Artificial Intelligence that gives the machines the ability to read, understand and derive meaning from human languages.**



# Applications of NLP

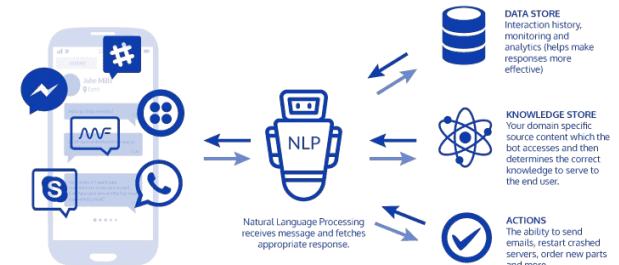
**Translation Tools:** Tools such as Google Translate, Amazon Translate, etc. translate sentences from one language to another using NLP.

**Chatbots:** Chatbots can be found on most websites and are a way for companies to deal with common queries quickly.

**Virtual Assistants:** Virtual Assistants like Siri, Cortana, Google Home, Alexa, etc can not only talk to you but understand commands given to them.

**Targeted Advertising:** Have you ever talked about a product or service or just googled something and then started seeing ads for it? This is called targeted advertising, and it helps generate tons of revenue for sellers as they can reach niche audiences at the right time.

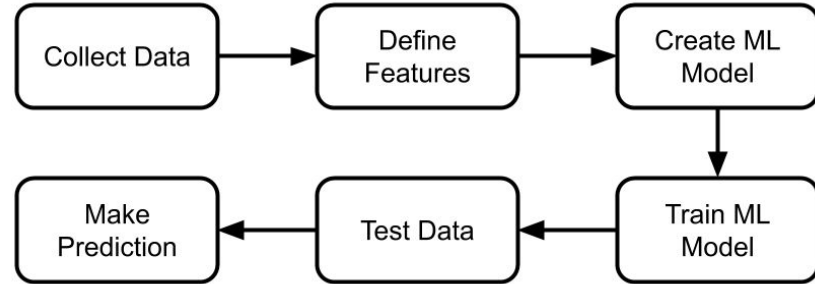
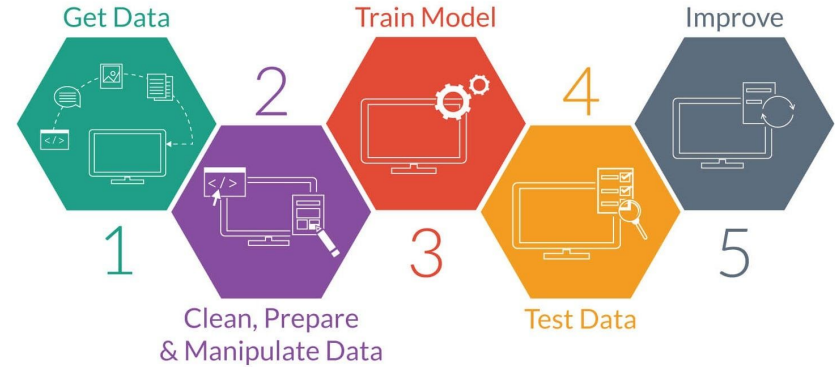
**Autocorrect:** Autocorrect will automatically correct any spelling mistakes you make.



# What is Machine Learning (ML)?

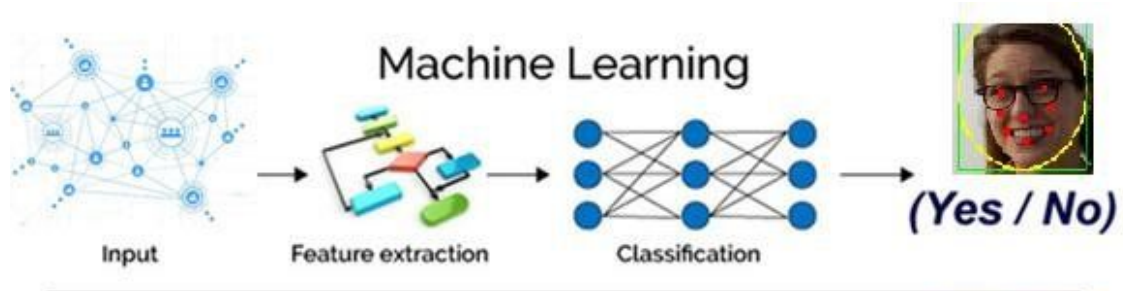
**Machine learning** is a discipline of computer science that uses computer algorithms and analytics to build predictive models that can solve business problems. It is machine learning that gives AI the ability to learn. This is done by using algorithms to discover patterns and generate insights from the data they are exposed to.

Machine learning accesses vast amounts of data (both structured and unstructured) and learns from it to predict the future. **It learns from the data by using multiple algorithms and techniques.**

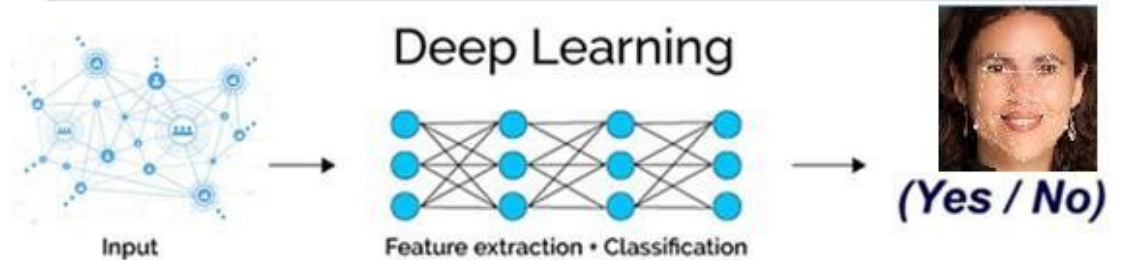


# What is Deep Learning (DL)?

Deep learning is a method in AI that teaches computers to process data in a way that is inspired by the human brain. **Deep learning models can recognize complex patterns in pictures, text, sounds, and other data to produce accurate insights and predictions.**



Deep learning tends to work better with **massive data sets** where it can detect complex hidden patterns and improve accuracy as the data size grows.



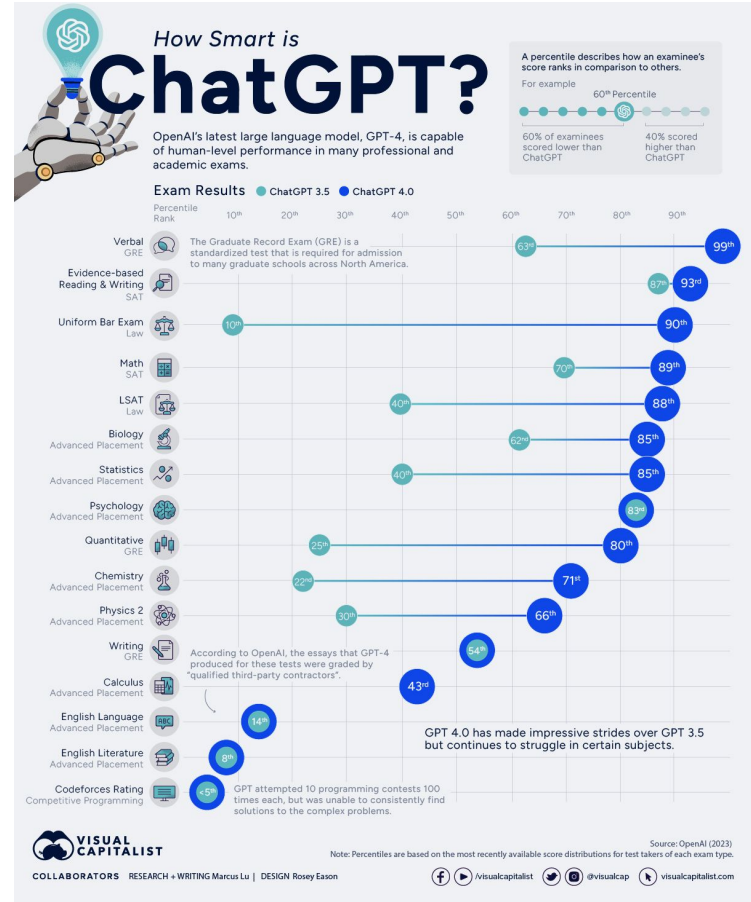
Deep learning models are only as good as the **data they learn from.**

# What is ChatGPT

ChatGPT is a powerful language model developed by OpenAI that can be used for a variety of natural language processing (NLP) tasks, including text generation, language translation, and question answering.

**ChatGPT's capacity to recognize context and deliver human-like responses is one of its key features, making it well-suited for usage in chatbots, virtual assistants, and other conversational applications.**

ChatGPT can be fine-tuned for specific use cases, such as generating product descriptions for e-commerce websites or writing creative content for social media.



# ChatGPT Competitors?

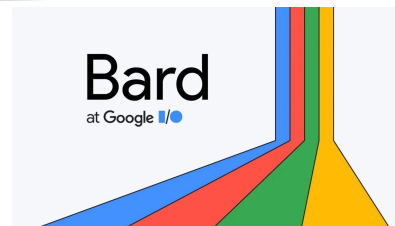
ChatGPT's primary competitors are or could be Google's Bard, Baidu's Ernie, DeepMind's Sparrow and Meta's BlenderBot.

**Google's Bard** - ChatGPT's main competitor is Bard, Google's AI generative AI chatbot. In comparison to ChatGPT, **Bard focuses more on creating prose that sounds like a human could have spoken it naturally and less on being able to answer any question.** Bard is built on Google's Language Model for Dialogue Applications.

**Baidu's Ernie** - The Chinese search engine Baidu plans to add a chatbot called Ernie.

**DeepMind's Sparrow** - OpenAI competes with DeepMind, an artificial intelligence research laboratory owned by Alphabet. DeepMind focuses more on research and has not yet come out with a public-facing chatbot.

**Meta's BlenderBot** - BlenderBot focuses on being able to chat, providing short, conversational replies rather than full paragraphs.





# AI Hallucinations (a real BIG issue)

AI hallucinations refer to erroneous outputs that are miles apart from reality or do not make sense within the context of the given prompt. For example, an AI chatbot may give a grammatically or logically incorrect response or misidentify an object due to noise or other structural factors. AI hallucinations do not result from a conscious or subconscious mind, rather, it **results from inadequacy or insufficiency of the data used in training and programming the AI system.**

Some AI models are trained to intentionally generate outputs unrelated to any real-world input (data). For example, top AI text-to-art generators, such as DALL-E 2, can creatively generate novel images we can tag as "hallucinations" since they are not based on real-world data. **Spotting and recognizing AI hallucinations is up to the users of such applications.**



# Pause Giant AI Experiments: An Open Letter

Therefore, **we call on all AI labs to immediately pause for at least 6 months the training of AI systems more powerful than GPT-4.** This pause should be public and verifiable, and include all key actors. **If such a pause cannot be enacted quickly, governments should step in and institute a moratorium.**

AI labs and independent experts should use this pause to jointly develop and implement a **set of shared safety protocols for advanced AI design** and development that are rigorously audited and overseen by independent outside experts. These protocols should ensure that systems adhering to them are safe beyond a reasonable doubt. This does *not* mean a pause on AI development in general, merely a stepping back from the **dangerous race to ever-larger unpredictable black-box models with emergent capabilities.**

AI research and development should be refocused on making today's powerful, state-of-the-art systems more accurate, safe, interpretable, transparent, robust, aligned, trustworthy, and loyal.

Elon Musk and Apple cofounder Steve Wozniak are among the prominent technologists and artificial intelligence researchers who have signed.

Thousands of signatories of the letter include deep learning pioneer and Turing Award–winning computer scientist Yoshua Bengio.

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**PAUSE THE**   
**EXPERIMENT**

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# Pause Giant AI Experiments: An Open Letter



Artificial intelligence pioneer Geoffrey Hinton speaks at the Thomson Reuters Financial and Risk Summit in Toronto, Dec. 4, 2017. (Reuters/Mark Blinch/File)

The "godfather of artificial intelligence," computer scientist Geoffrey Hinton, for example, warned last month that "it's not inconceivable" AI could wipe "out humanity." His remarks came after he quit his job at Google, saying he regrets his life's work due to how AI can be misused.

This week, Google chief Sundar Pichai also weighed in that AI must be regulated, arguing it's "too important" to be left without guardrails.



Google CEO Sundar Pichai appears before the House Judiciary Committee to be questioned about the internet giant's privacy security and data collection on Capitol Hill, Dec. 11, 2018. (AP Photo/J. Scott Applewhite)

"Developing policy frameworks that anticipate potential harms and unlock benefits will require deep discussions between governments, industry experts, publishers, academia and civil society," Pichai wrote in an op-ed for the Financial Times. "Legislators may not need to start from scratch: existing regulations provide useful frameworks to manage the potential risks of new technologies."

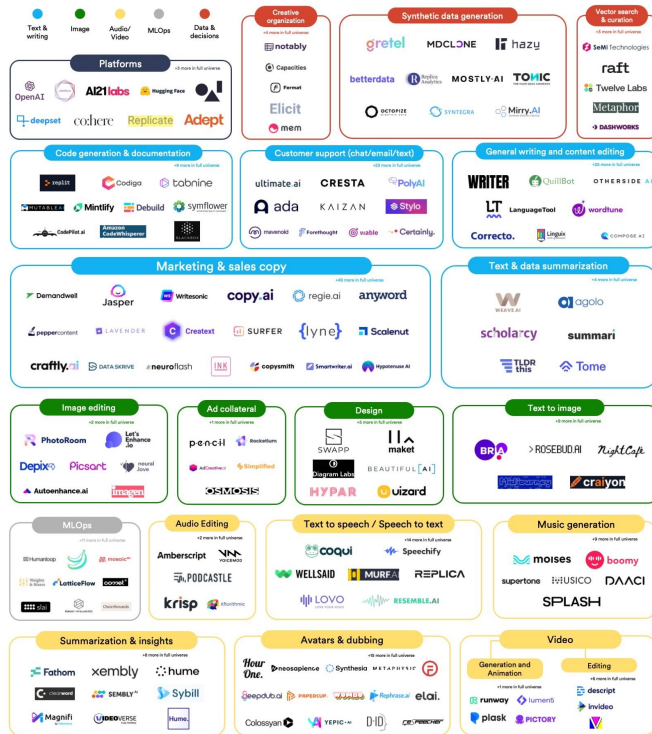
# Fashion Technology Companies in AI/ML



## BASE10 TREND MAP: GENERATIVE AI

Companies are grouped based on medium produced and segmented by use case within each medium. Companies that offer products across segments are grouped in the segment of the core product offering.

## Base10

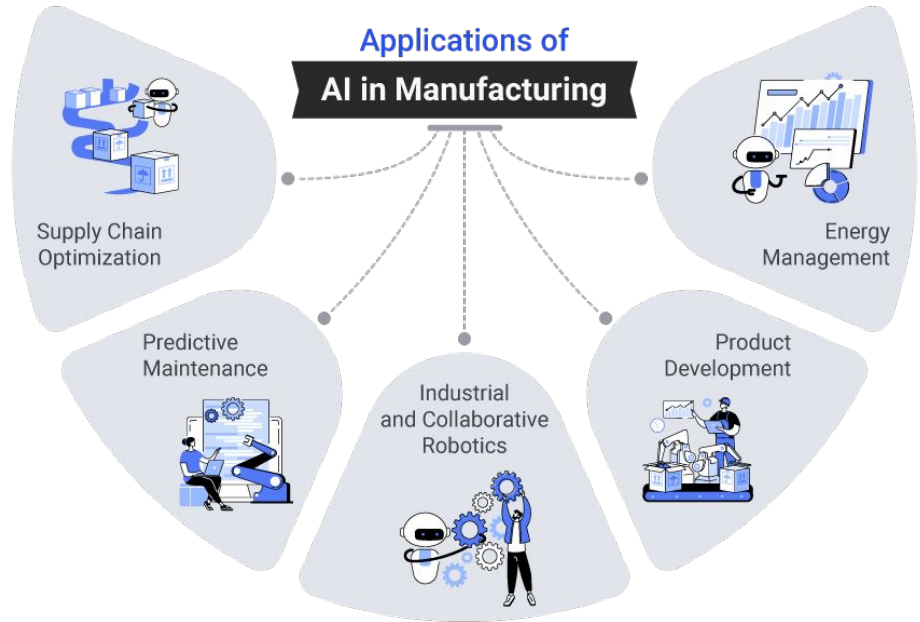


# Applications of AI in Production

Infusing AI into the production experience allows manufacturers to benefit from smarter factories, boosting productivity and lowering costs. **AI may be utilized in assembly, supply chain optimization, employing robots on the manufacturing floor, improving performance using sensors, designing and in post-production activities.**

AI helps identify the hurdles in the future by **forecasting and re-plenishing supply chains** as needed. AI may also assist with routing difficulties, volume forecasts, and other concerns.

AI can be used to **analyze products, identify where the flaws are, and produce a thorough status report.**



# AI in Manufacturing, Supply Chain & Fashion Design



Apparel manufacturing is the labour-intensive industry, from sewing to sorting. AI enabled machines and robots can do this task very easily, i.e. **stitch the fabrics with perfection while at the same time it can also detect various faults in fabric and provide assurance of the best quality.**



AI in retail stores also provides an automated solution to trace the customer's activities while shopping and visualize their sentiments. **You can determine what kind of products they prefer to buy and what they ignore.**



# AI in Manufacturing, Supply Chain & Fashion Design

AI tools for demand forecasting are enabling retailers to reduce forecasting errors and simultaneously reduce inventory.



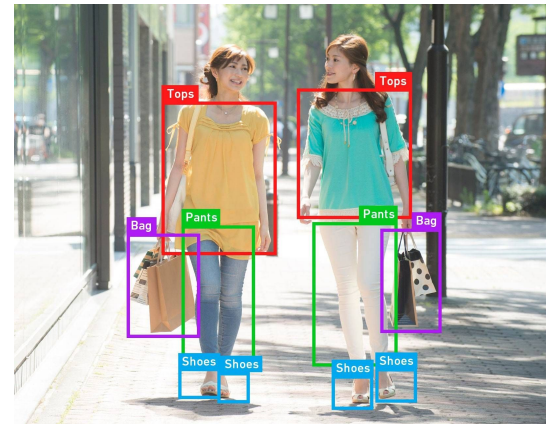
AI applications exist that turn customer's smartphone cameras into discovery tools. The customer takes a picture of a product and the application identifies the shape, color and pattern of the object and can match it and find similar products.



# AI in Manufacturing, Supply Chain & Fashion Design

Trends in the fashion industry change very rapidly with new designs and patterns daily in the market and designers need to keep pace. **AI algorithms can understand designs through different images by copying popular styles.**

Retailers giants like Amazon and Walmart have their own clothing brands and are using the machine learning systems and AI technology to identify popular styles.





# Key Takeaways

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- AI is becoming an integral part of technology in the apparel and fashion industry.
- AI can help to reduce errors in trend and forecast predictions.
- AI can be a valuable tool in the hands of a skilled fashion designer.
- Don't expect AI to solve everything.
- Don't expect the AI project to work the first time.
- Don't expect traditional planning & processes to apply without any changes.
- Expectations are inflated due to media and only positive reports about AI.
- ML works well in learning a simple concept with lots of available data.
- ML tends to work poorly in learning a complex concept, from small amounts of data or if performing on new types of data.



# Questions & Possible Answers

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