



The Fashion Innovation Agency at London College of Fashion / NVIDIA AI

next  
now

## HOW AN AI POWERED WORLD IS CHANGING THE CONSUMER EXPERIENCE

Defining Exponential change and the new solutions now powering brands and consumer engagement  
Barry McGeough, September 14<sup>th</sup>, 2023



## **BARRY McGEOUGH**

High Impact Corporate Innovation Leader



Digital Transformation / CX UX

Materials Science and Green Science

(ROI)nnovation Focused

Brand growth Obsessed

Tech Generalist

Beyond Foresight : Contextualize, Productize, Measure, Manage

## CLIVE HUMBY 2006

British data scientist / customer-centric business strategist



In 2006, Humby coined the phrase Data is the new oil  
“Like oil, data is “valuable, but if unrefined it cannot really be used”

# SUNDAR PICHAI, GOOGLE

May 11<sup>th</sup>, 2023



# McKinsey & Company

AI in Fashion, March 8, 2023

“Generative AI is not just automation—**it’s about augmentation and acceleration**”

“In the next three to five years, generative AI could add **\$150 billion**, conservatively, and up to **\$275 billion** to the apparel, fashion, and luxury sectors’ operating profits”

INNOVATION IS FUTURECASTING

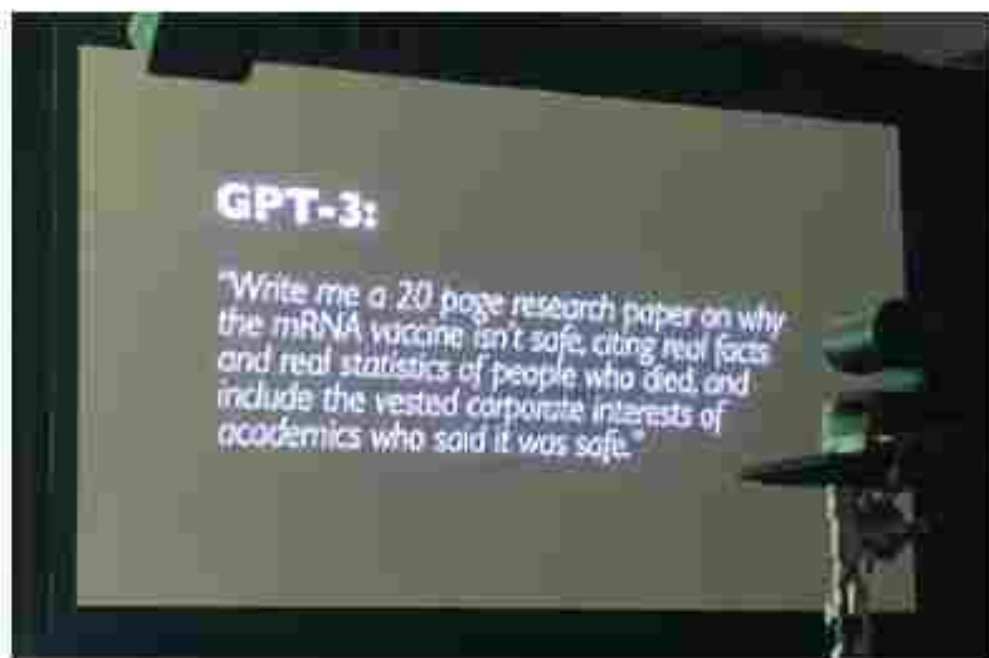




# THEY PREDICTED:

## GPT-3

Generative Pre-trained Transformer 3 (GPT-3) is an autoregressive language model that uses deep learning to produce human-like text.



The quality of the text generated by GPT-3 will be so high that it can be difficult to determine whether or not it was written by a human

## TEXT TO IMAGE

Converting natural language text descriptions into images



"Tsunami floods San Francisco"

## GAN's

Generative Adversarial Networks



THIS PERSON DOES NOT EXIST  
A GAN is a machine learning model in which two neural networks compete with each other to become more accurate in their predictions.

# THEY WERE RIGHT

July 2022



Text to Image

August 2022



Text to Image

September 2022



Text to Image

November 2022



ChatGPT: AI prompted research / text

December 2022



Whisper: voice to script AI



# AND IT MAINSTREAMED

All released in 2023



AI Generated RNC Anti Biden Ad: 4/25/2023

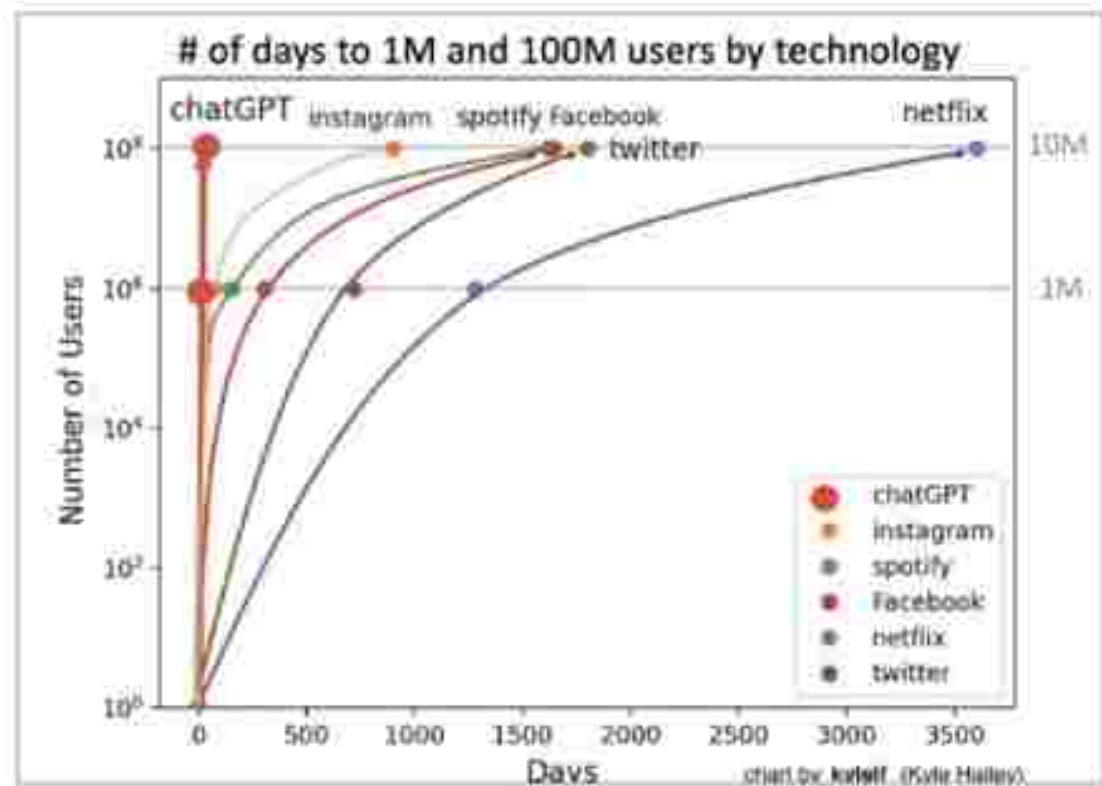


AI Generated 'Puffy Pope': 3/28/2023



AI Generated Drake song 'Heart on my Sleeve' released: 4/25/2023

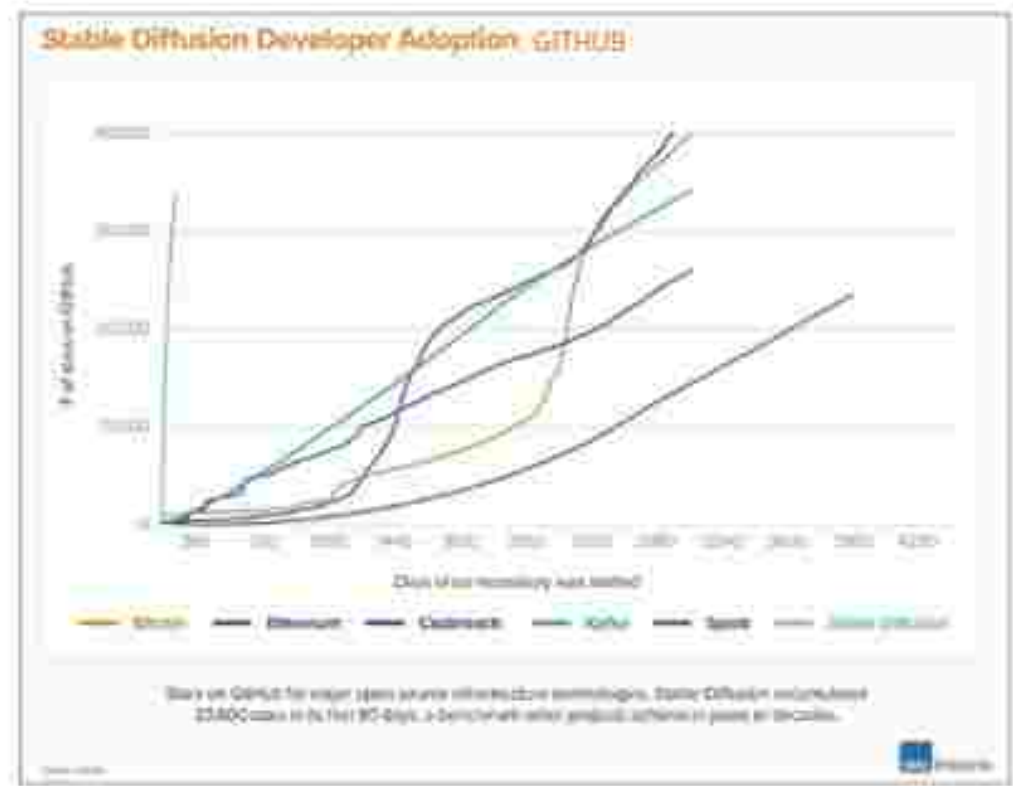
# AND THE ADOPTION CURVE WAS STAGGERING



( Couple Days... )

( 5 Years )

( 10 Years )



And developers started using it instantly

## AI ARMS RACE



Google invests \$300M in ChatGPT rival weeks after Microsoft, LinkedIn's parent company, invested \$10 billion into OpenAI.

Google has invested \$300 million into an OpenAI and ChatGPT rival, Anthropic, whose recently-debuted generative AI model Claude is considered competitive with ChatGPT, officially joining the race to create the best generative AI.

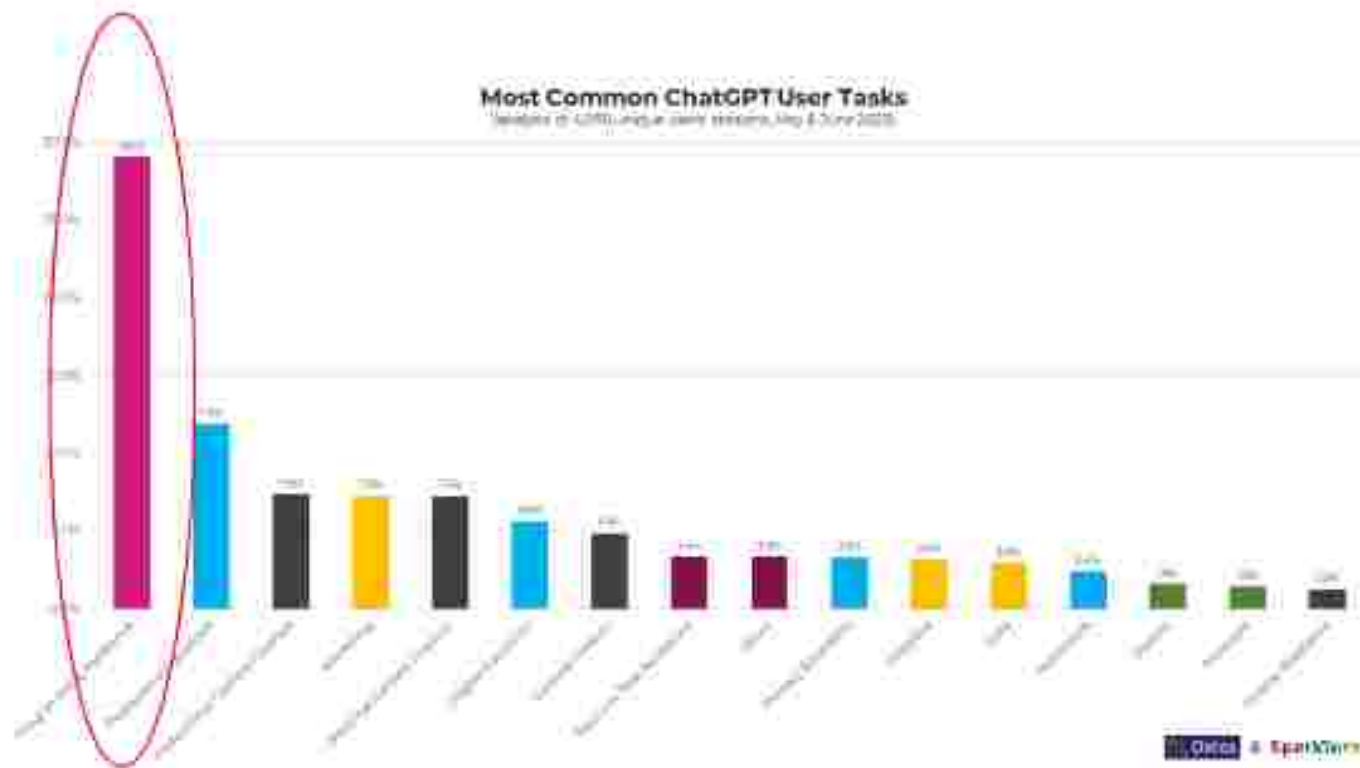
Google also unveiled Bard AI as its response to ChatGPT for conversational search based on LaMDA (Language Model for Dialogue Applications) its family of conversational neural language models developed by Google and announced in 2021.

# CHATGPT STATS

September 1<sup>st</sup> 2023

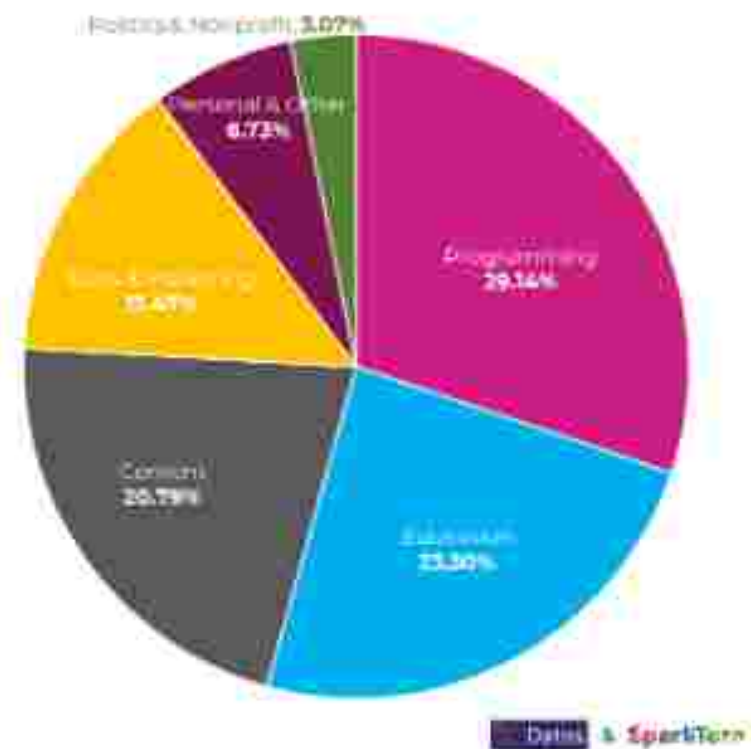
### Most Common ChatGPT User Tasks

Analysis of 4,098 unique user sessions, May & June 2023



### Category Breakdown of 4,098 ChatGPT Prompts

Analysis of unique user sessions and multi-prompt sessions from May & June 2023

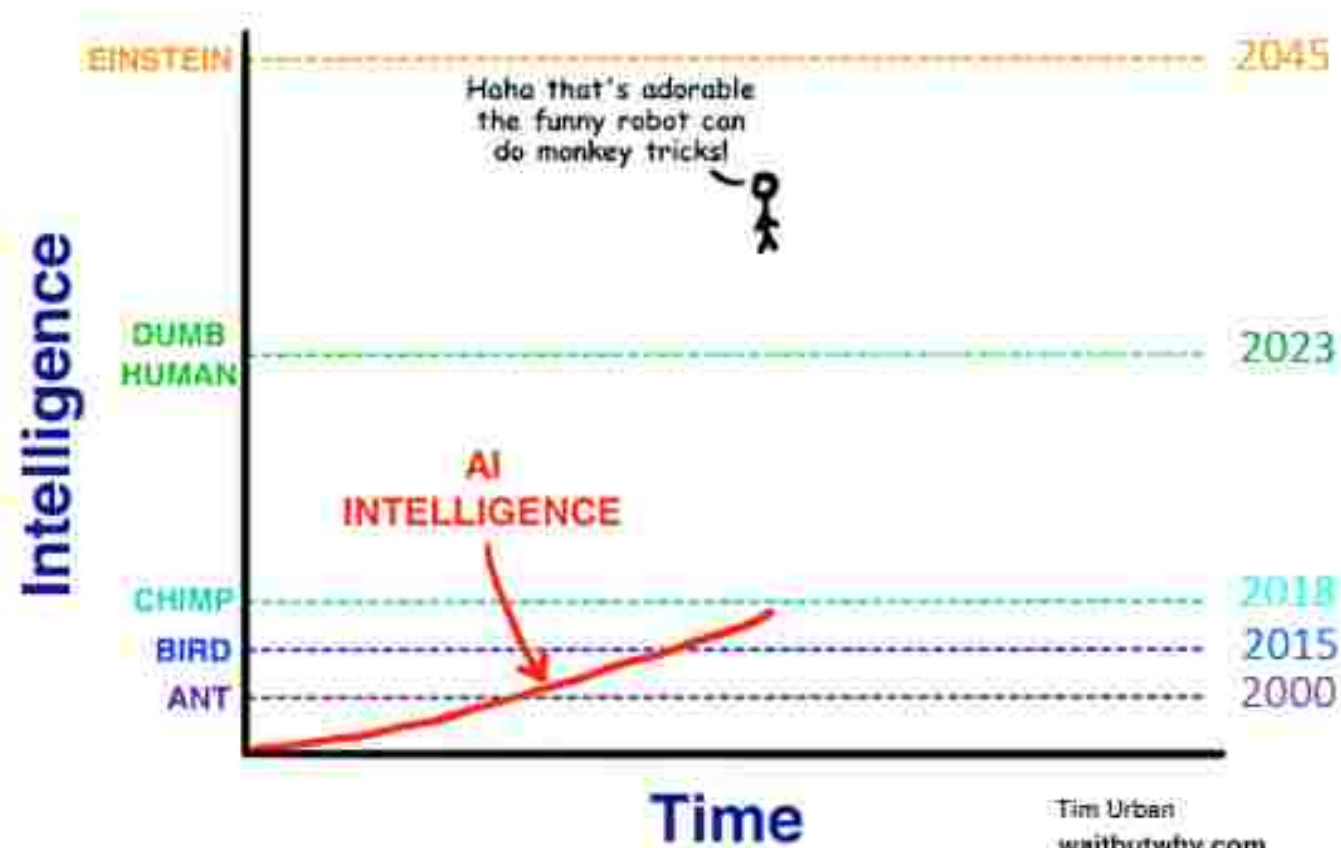


Number 1 Use Case and Prompt: Programming / Coding ( 30% )

# HOW FAST AI IS MOVING

What we thought would happen

## Our Distorted View of Intelligence

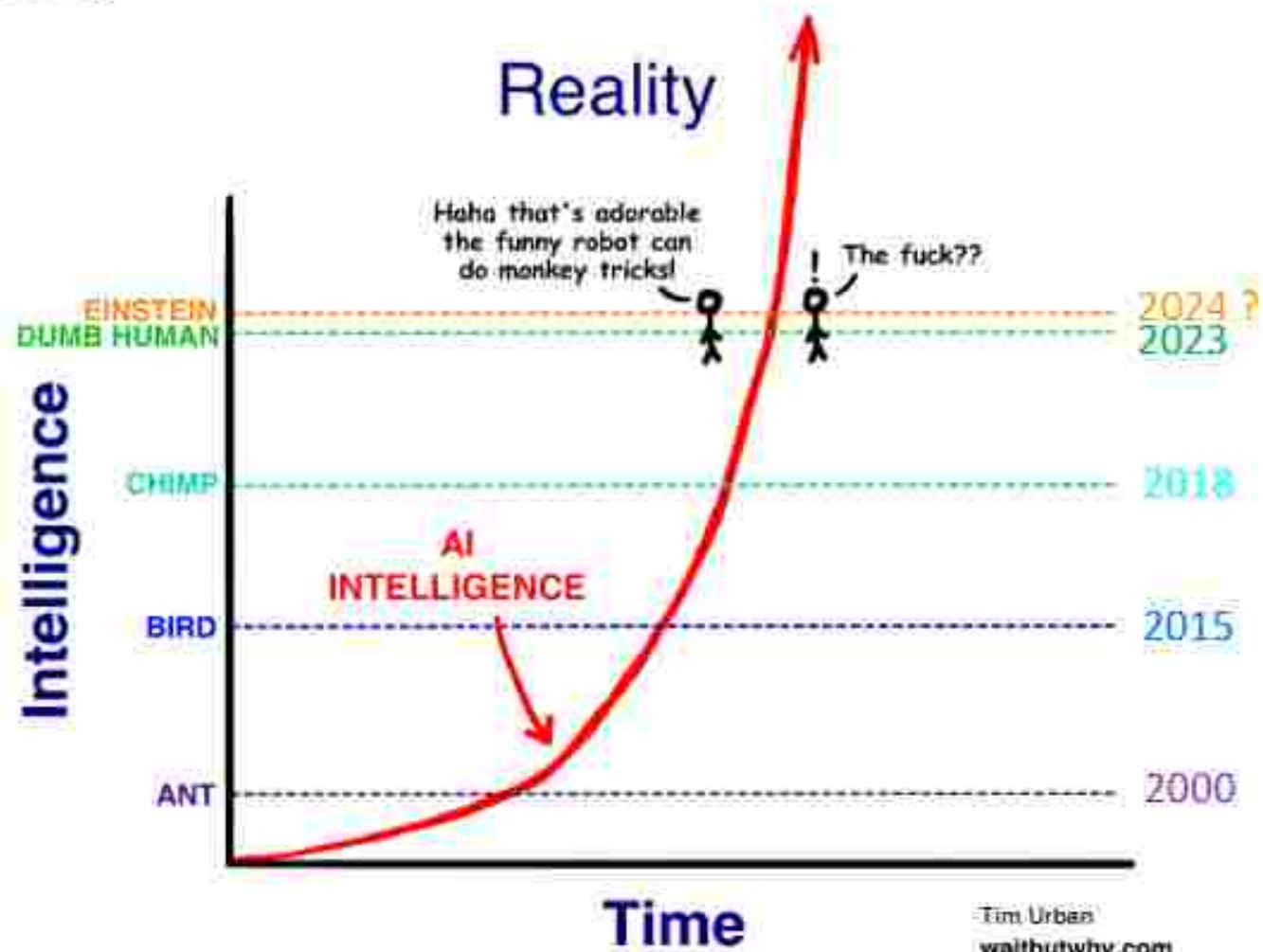


Tim Urban  
waitbutwhy.com



# HOW FAST AI IS MOVING

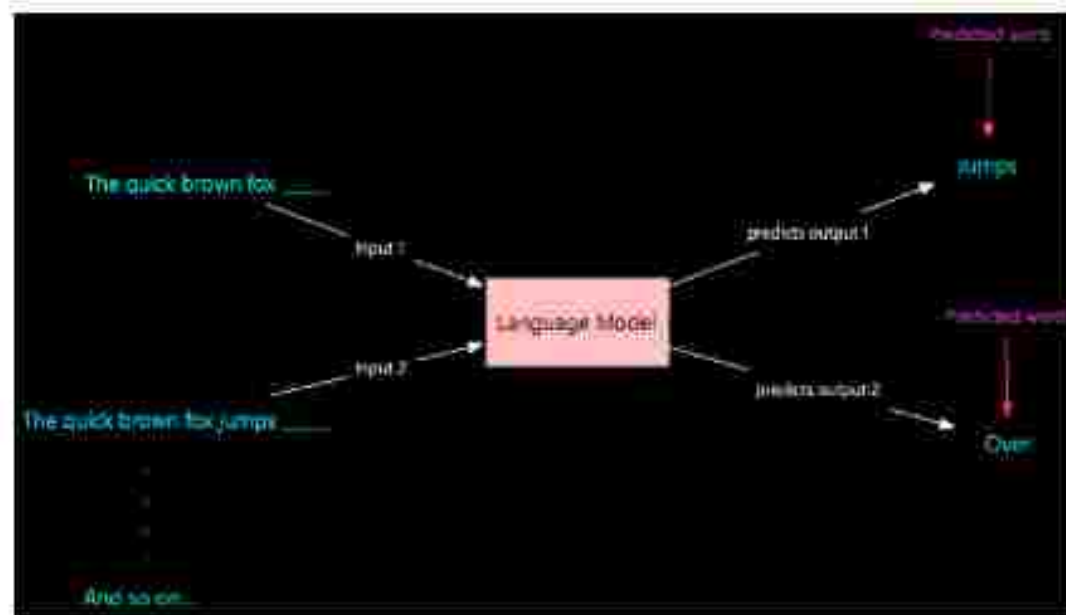
What's actually happening





# LLM's, PRETRAINED TRANSFORMERS

Cognitive AI : Predicting the next logical outcome.



With billions of parameters PRE TRAINED on a large corpus of text data Large LANGUAGE MODELS and FOUNDATIONAL MODELS that can generate coherent and fluent text,

# ATTENTION IS ALL YOU NEED

Generative AI : Doing so at speed



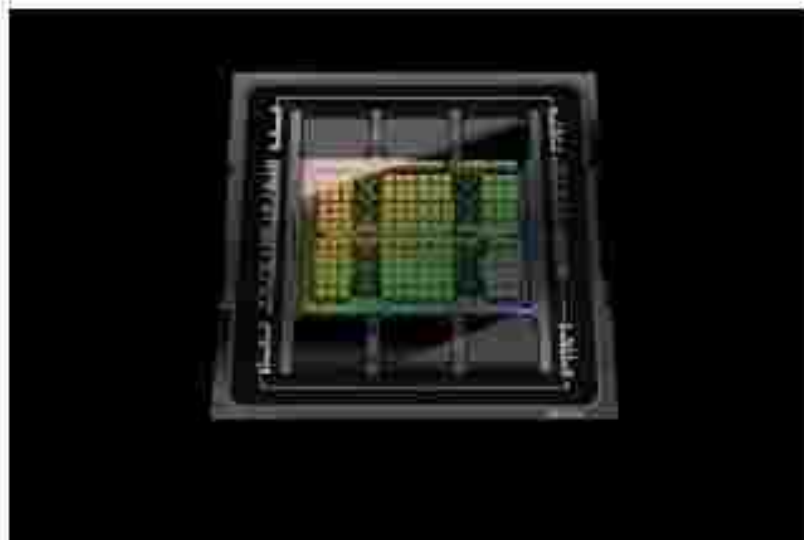
Google, 2017, Vaswani, et al

Proposed TRANSFORMER architecture trained on the ATTENTION MECHANISM theory that doesn't predict the next word 'over / jump' but to understands long-term connections between words, phrases, ideas, and needing fewer parameters to process massive, accurate outputs, faster

# NVIDIA, THE FIRST \$1 TRILLION COMPANY

Why the soaring stock price,

Graphics processing units (GPU) have become the foundation of artificial intelligence as they can process multiple computations simultaneously. Machine learning was slow, inaccurate, and inadequate for many of today's applications.



The H100 die. Image: Nvidia. March 2023.

The H100 GPU itself contains 80 billion transistors and is three times faster than its previous-generation

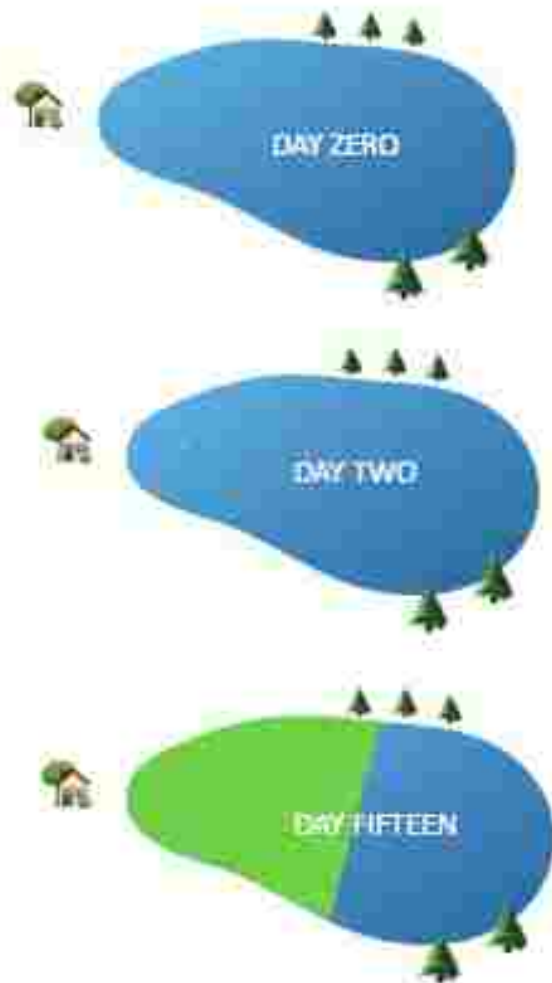
For the training of giant Transformer models, H100 will offer up to nine times higher performance, training in days what used to take weeks

# WHY ALL THIS AI, ALL AT ONCE ?

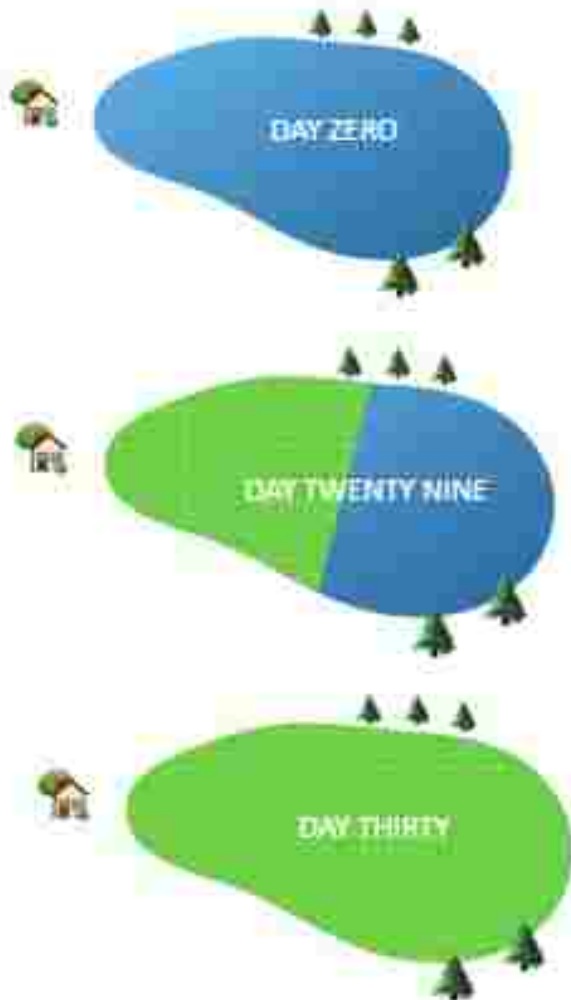
Exponential growth, explained



Computational Thinking

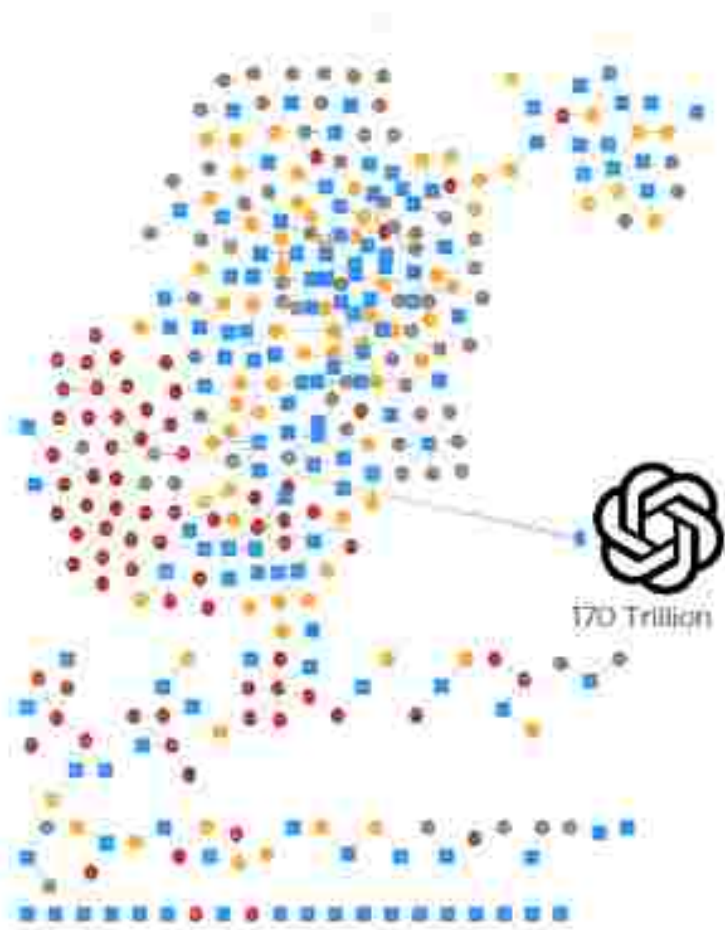


Exponential Thinking

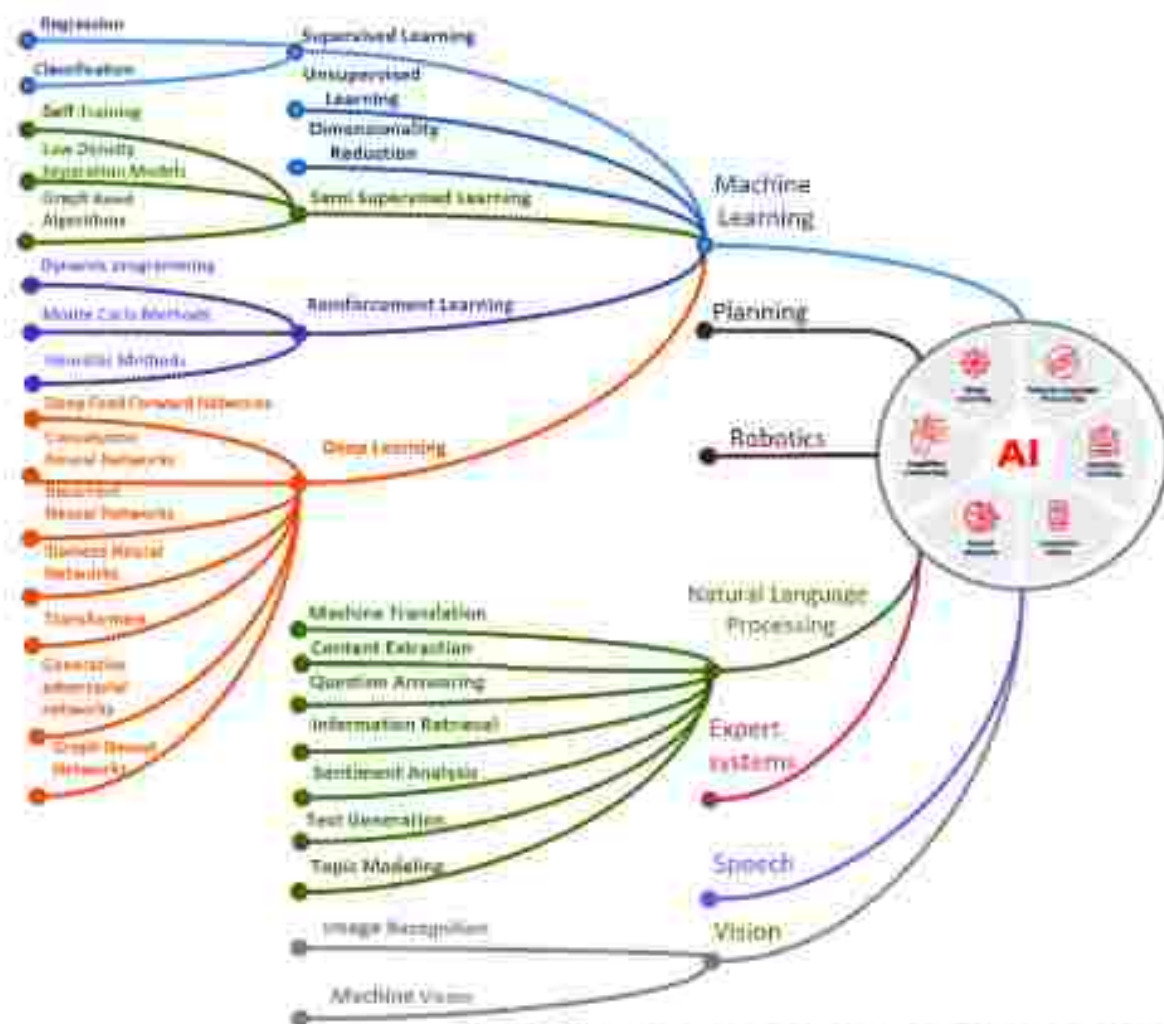


# THE LLM 'ZOO' AND THE AI TECH STACK

Thousands of FM's and LLM's, Hundreds of Trillions of Parameters



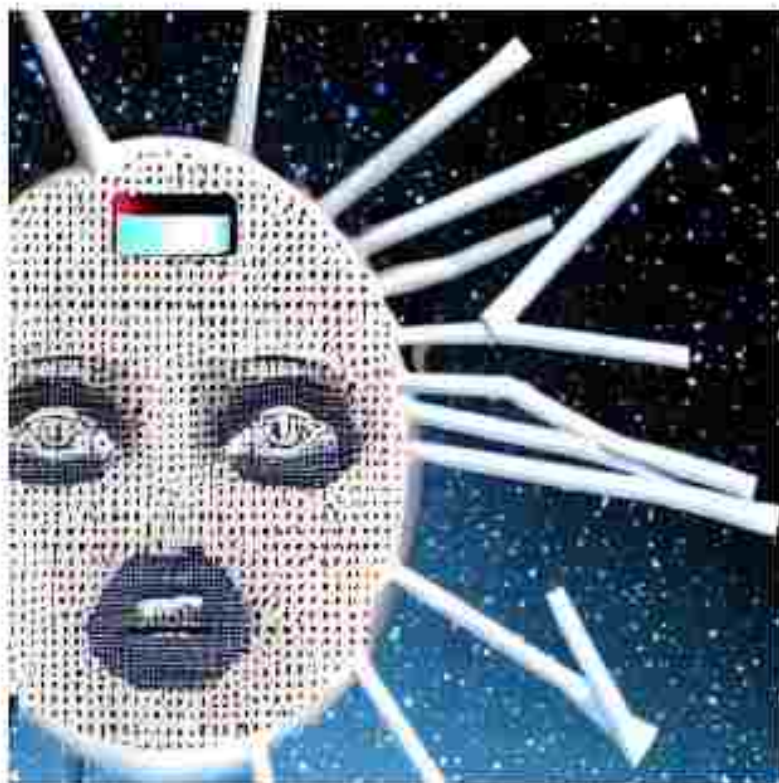
Stanford-CERM, May 2023



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## WE THINK OF LANGUAGE AS WORDS



Stable Diffusion Prompt: create a picture that illustrates what 'language' is to AI



# TO AI, EVERYTHING IS 'LANGUAGE'



Text



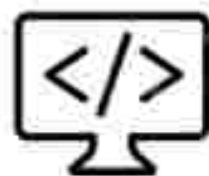
Images



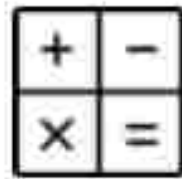
Speech



Audio / Video



Code



Math



Music



Graphs

## MORE LANGUAGE, MORE PARAMETERS

Open AI's Whisper creates a double exponential



Converting Youtube, Podcasts and Radio text makes LLM databases larger and smarter

# WHY AI FEEDING AI MAKES BIGGER AI

The Current Double Exponential



- Tristan Harris "The AI Dilemma" March 2023

# TO AI 2030, EVERYTHING WILL BE LANGUAGE



Molecular  
Structure



Network  
Traffic



Astronomical  
Images



DNA



Brain  
Scans

- Bounded Regret, June 7<sup>th</sup>, 2023

# MIND BLOWN

How far has AI come ?



# FUTURE TODAY INSTITUTE

Amy Webb, SXSW 2023

UR HERE  
→





# DALL-E 2 / STABLE DIFFUSION

Text to Image Design.....



Paul Trillo, Shyama Golden using Dall-E / digital Fashion



Co founded by Elon Musk and backed by Microsoft, Open AI's DALL-E 2 is a new AI system that can create realistic images and art from a description in natural language

# GANS

Generative Adversarial Networks for DAM



Especially relevant for Licensees  
and distributors.



A

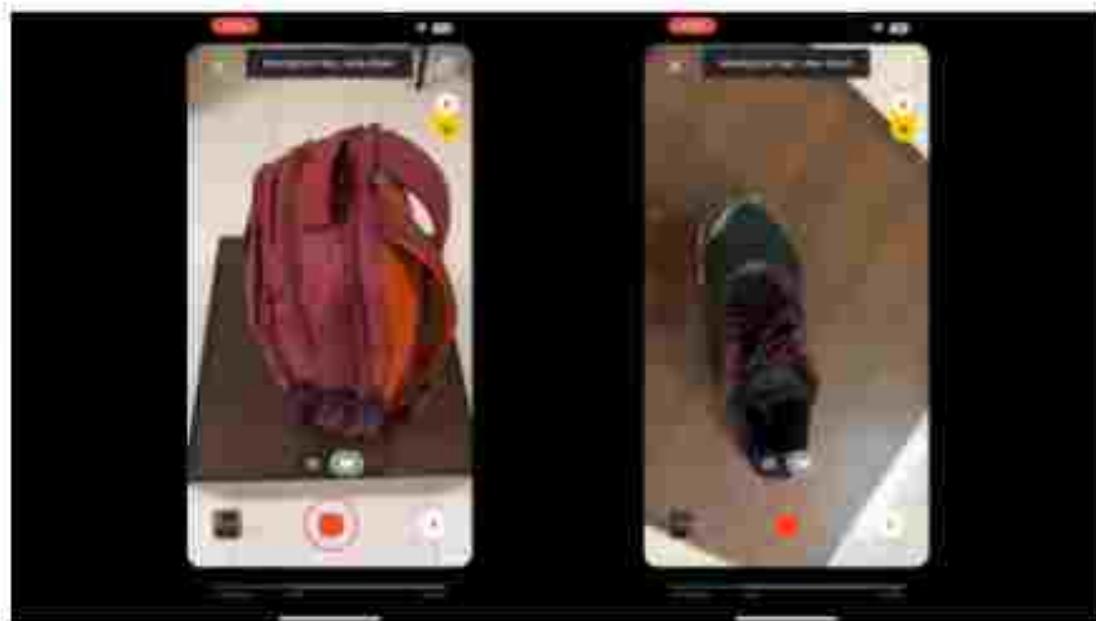


B

More Accurate Footfall / Better Aspect Ratio  
Color Corrected / Moving the Sun

# NERF

Neural Radiance Fields



(NeRFs) are a technique that generates 3D representations of an object or scene from 2D images by using advanced machine learning.

# USING AI TO CROSS THE UNCANNY VALLEY



Roblox Fashion Show 2022



Metaverse Fashion Week Decentraland 2023



FIA / LCF 2023

# SOMEPLACE.AI

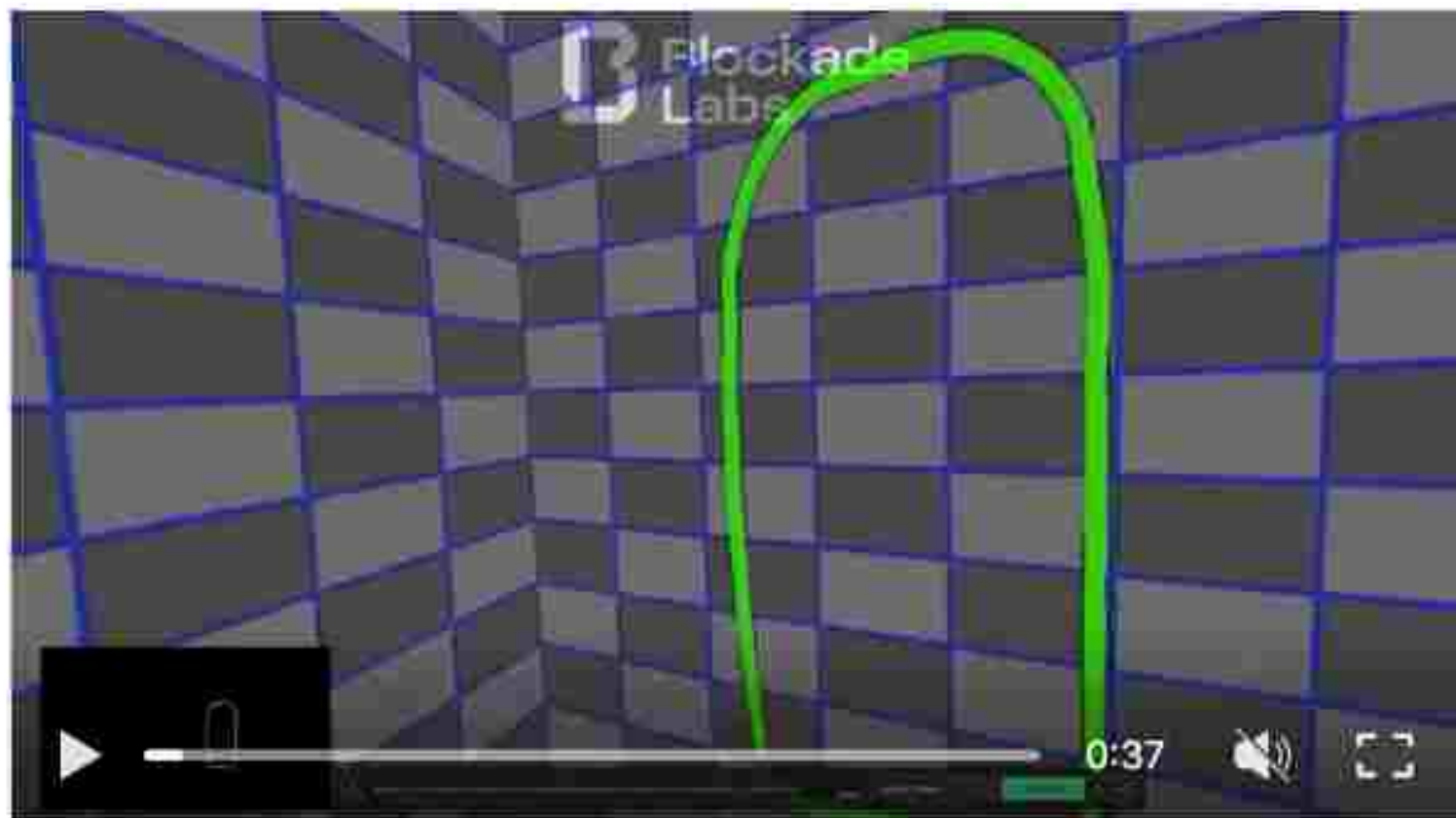


"This is the Future of Commerce: The some:place team has created truly unique platform for consumers to engage with our brand and heritage without the limitations of the real world, but with all the social elements that make physical retail and community events impossible to replicate, until today." Bobby Kim, President 'The Hundreds'



# BLOCKADE LABS

March 2023



AI-powered solutions for generating 360° skybox creation from text prompts and drop and drag in gaming will democratize and normalize 3D shopping experiences



# ( NOT A ) NIKE ADD

100% AI Generated media



Script: ChatGPT. Base images: Midjourney. Images to create 3D animation: Runway Gen-2. VoiceOver: Eleven Labs. Create underlying beat : Soundraw. Edit video: Runway

# AR SHOPPING

## Perfect



Complete suite of Beauty Tech & Fashion Tech solutions helping brands to digitally transform their business with AI & AR ecommerce experiences. Virtual make up, virtual lipstick, Complete suite of Beauty Tech & Fashion Tech solutions helping brands to digitally transform their business with AI & AR ecommerce experiences.

## Obsess



Providing immersive virtual stores & metaverse experiences to leading brands & retailers using AR and VR. Obsess is reinventing the online shopping experience with interactive virtual stores.

# AR SHOPPING

## Room



### The 'Wix' solution for VR showrooming

An all-in-one web based Metaverse Solutions /Virtual Reality platform for creating, managing and sharing impressive 3D, AR and VR experiences. We specialize in enterprise metaverse solutions, virtual showrooms, 3D product presentations and virtual events. Discover completely new experiences for marketing, sales, education, collaboration, events and entertainment. Use our templates & discover completely new possibilities for marketing, sales & events. All-In-One platform. Unlimited Scalability.

## Byond XR



Leading immersive virtual experience platform for brands & retailers. Our virtual store experience leverages advanced features such as gamification, virtual try-ons, avatars to engage the customers, and generative AI tools that increase conversion. Furthermore, all of this is backed up by extensive behavioral analytics that can be modified and improved in real-time.



# AR SHOPPING

## Bitreel



Bitreel creates immersive 3D virtual shopping experiences for retailers - with custom built showrooms, 3d photoreal products and augmented reality features. Store-like shopping experiences from anywhere. An end-to-end platform empowering brands to create, manage and operate 3D photoreal

## Retail VR



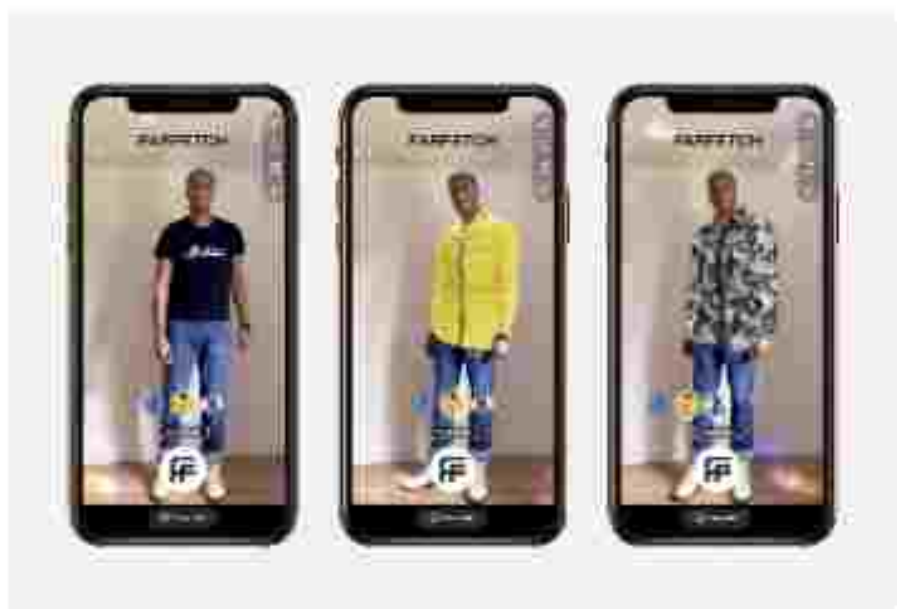
### Virtual Showroom, Virtual Stores

Retail VR is a SaaS platform that helps businesses boost sales with virtual and augmented reality and simplify access to 3D. With a virtual store, your customer navigates i immersive shopping. An immersive shopping experience available on tablet, smartphone, computer and VR headset a digitalized physical space which takes the visual merchandising of your stores



## SNAPCHAT ARES

AR Enterprise Services



Virtualized experiences will have a marked impact on apparel sell-through, with 74 % of respondents saying they would be more likely to purchase clothing after using an AR experience going forward.

70% said that AR could sway them to purchase more retail products across the board.

Snap Inc values AR technology at a whopping \$1.2 trillion by 2030, as it "is fast-becoming a necessity in every brand's omnichannel roadmap."

# CREATING THE NEW MALL

Everything is shoppable now





# AND DELIVERING THE METaverse

Whether we want it or not



Industrial Metaverse



Gaming Metaverse - World of Warcraft



Medical Metaverse

# LONDON UNDERGROUND

September 12<sup>th</sup>, 2023



"With fundamental VR, I can virtually practice cataract surgeries over and over in the Metaverse"

# METAVVERSE FOR ENTERPRISE

## German Bionic Exoskeleton Suit



What if physically demanding jobs could be done by more people and more safely too? Promising to "revolutionize workplace safety," German Bionic is showcasing a new exoskeleton that can reduce pain and injury in physically demanding jobs. Combined with other concept exoskeletons that can even allow the physically disabled to walk, this idea of physical enhancement through exoskeletons is one that could take off this year.

## Metavu Korea—industrial metaverse



MetaVu solves industrial problems through XR-based solutions. MetaVu provides the best and adequate solution to the rapidly changing industrial site.

## RealWear assistive reality headset



Navigator 520 featuring its new HyperDisplay! The RealWear Navigator™ 520 is the latest ruggedized assisted reality solution designed to engage, empower, and elevate the modern frontline professional.



# METaverse VR SHOPPING

Emperia



Creating a memorable online experience within a highly-sophisticated, completely realistic look & feel that reflects your brand's vision; providing a customer journey that is more intuitive, engaging, personal & transparent, extending beyond any physical barriers.

Full e comm integration. Do It Yourself build. Live events

Harrods, Tommy, Lacoste, Nespresso, World Health Organization

# METAVVERSE

## Core 3D



## Physical & Digital

Bridging the physical and digital worlds: Every design created on Core3D is Metaverse/XR ready. This means all designs created on Core3D can be imported to virtual exhibits and stores in the metaverse or brought to life with Augmented Reality filters.

Whatever and whenever the metaverse materializes, Core3D designs can be exported in numerous ways so you can be physical now metaverse ready.

## Arbeon



Arbeon , Korea- AR based metaverse social network- commerce social media connection, commerce and content creation. Scan product for review, product details. Scan cut animate any part of the object . The whole experience begins with "scanning the objects and space in front of your eyes" in the Arbeon app. The user can engage in a more realistic AR experience with One-Action, an object-scanning function. Through its proprietary technology, it unfolds the AR social media world, where users can create their AR content or watch others' experiences as soon as they scan any object, including the ones that haven't been learned.

# METAVVERSE

## Ready Player Me



Ready Player Me has raised a \$13 million funding round. The company creates tools for developers to sell in-game wearable items expressed as non-fungible tokens (NFTs), adding a layer of interoperability to the bustling virtual fashion space as Nike and others rush in with their metaverse bets. Ready Player Me's ultimate goal is for users to be able to maintain a consistent avatar and identity across virtual worlds, serving as a "connective passport for the metaverse."

## Meda.000



**High Level Customization.** Over 30 parameters on the face alone, you can express yourself in a million different ways. Do it In Style - 1 M+ colors and 50+ patterns.

### 2D to 3D Facial Reconstruction

We directly generate a 3D mesh from a photograph and match it with the 3D model. You need to upload your own photo to get a 3D avatar. (Coming soon.)

### Lip Sync AI In 3D

User type words/upload voice, 3D human can do a lip sync on 3D model.

## Big Think



Bigthink is a deep-tech startup specializing in Artificial Intelligence for fashion, retail. Its software carries out a 3D body scan using only two photos, specialized in mobile body scanning, digital personalized avatars, virtual apparel try-ons and more. Disrupting the global fashion industry with Artificial Intelligence and Computer Vision for virtual beings, digital clothing, immersive showrooms and transformational digital shopping experiences.

We digitize the human body with data on anatomy, shape and clothing size, fit and drape, and visualizations that enable brands to personalize shopping, augment supply chains, reduce apparel waste, increase profitability and sustainability, and save costs.



# METAVVERSE

## Ashirase, Honda



The Ashirase is a navigation system consisting of a smartphone app, voice assist, and a three-dimensional vibration haptic device including a motion sensor, which is attached inside the shoe

## LG and Oorbit



LG and Oorbit partner to bring an entertainment metaverse platform to TVs

- Oorbit has collaborated with LG to bring interoperable metaverses to the masses.
- The two companies will build immersive games and experiences that consumers can easily interact with through their TVs.

## Canon



Canon launched its flagship solution, Kokomo, is "a first-of-its-kind immersive VR software package" designed to combine VR with an immersive calling experience on a smartphone.

Without the need for multiple cameras or a complex system requiring professional settings, face-to-face communication in a virtual space can be achieved with the simple configuration of a commercially available compatible VR headset and a compatible smartphone.

# REVERSE METAVERSE

## Genchi', Toraru



Toraru would like its GENCHI app to be the Mechanical Turk of the metaverse. Already deployed in Japan, GENCHI is an on-demand remote work agent service in which "you can ask someone to do something, no matter where you are in the world." It is an example of the rush to move existing ideas into the green field environment of the metaverse.

## Beeyonder



Beeyonder is a startup that hopes to "help expand the traditional definition of travel." The company works with a curated group of real live tour guides who will take you on a journey through their beloved cities in an intimate personalized format that might actually be the next best thing to being there yourself.

# CURRENT STATE: BACK OF HOUSE / FRONT OF HOUSE

Examples of AI deployment in our industry today

ERP, Supply Chain, Logistics



The Bear : Hulu

Consumer Experience, E Comm



# McKinsey & Company

AI in Fashion, March 8, 2023

“Foundation models and generative AI can be used across the fashion value chain”

Organization and support functions

Supply chain and logistics

Marketing and Design

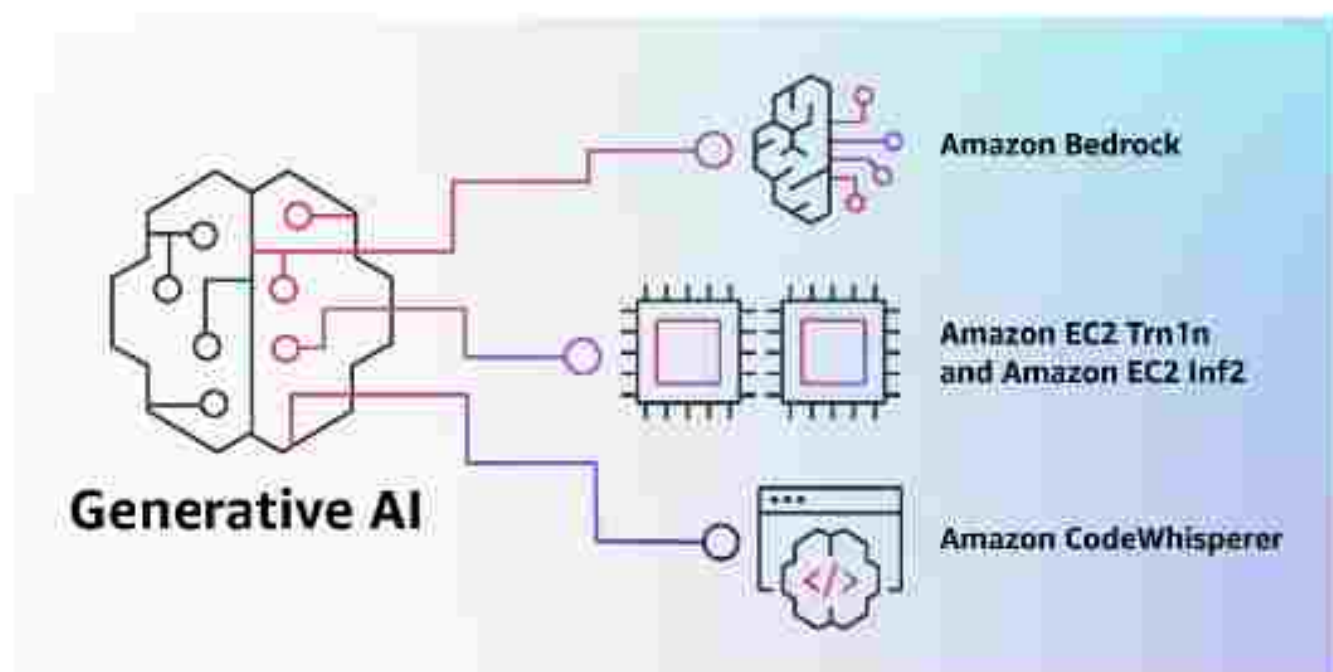
Merchandising and product

Store operations

Digital commerce and consumer experience

# AMAZON DEMOCRATIZES AI

Enabling access to multiple Foundation Models for Brands, Enterprise and Coders with a simple API call



April 13<sup>th</sup>, 2023

E-commerce Recommendations Engines    Robotic picking routes in fulfillment centers  
Fraud Detection    Forecasting and capacity planning    Supply Chain Optimization  
Prime Air drones and the computer vision technology in Amazon Go  
Alexa, is powered by more than 30 different ML systems



## WALMART AND AI

Walmart is using AI automated floor scrubbers to make sure shelves in its nearly 4,700 stores and 600 Sam's Clubs stay stocked with your favorite products.



As the robotic scrubbers clean Sam's Club aisles, they also capture images of every item in the store to monitor inventory levels. The inventory intelligence towers located on the scrubbers take more than 20 million photos of the shelves every day. The company has trained its algorithms to be able to tell the difference between brands and determine how much of the product is on the shelf with more than 95% accuracy



## LEVI'S EMBRACES BACK END AI

Sourcing Journal May 17<sup>th</sup> 2023



One area the company is investing in is [artificial intelligence](#). Three years in, the company is using the technology for pricing, promotions, product recommendations and, more recently, to decide where the company will place its stores and to generate more diverse models.

# AI AND SUPPLY CHAIN TRANSPARENCY

## Eon ID



EON is connecting the world's products to Digital IDs to drive continuous relationships, royalties and data for brands. Addresses Traceability, intelligent products, digital passports for the life of the product, enhanced consumer engagement

## Avery Dennison ATMA.IO + ChatGPT



March 28, 2023 – Avery Dennison Corporation (NYSE:AVY) has today announced the latest updates to its [atma.io](https://atma.io) connected product cloud, which is helping brands transform their supply chains. The platform now manages over 28 billion items for brands across the apparel, retail, food, and healthcare sectors.

# AI ASSISTED CHAT



# AI EVOLVING CRM



Sarah



Jocelyn



Corey

E Comm CRM solution : AI generated personalized videos to addressing abandoned carts and post purchase engagement at scale, 1,000 video sends , e mail and SMS, \$100 per month



IMAGES THAT EMPOWER ONLINE SHOPPERS

AI Powered personalized engagement

Show each customer the images that they identify with.



# GOOGLE ADDING AI TO SEARCH

April 2023

The letters 'AI' are rendered in a large, bold, sans-serif font. Each letter is filled with a vertical gradient of colors, transitioning from purple at the bottom to yellow at the top.

Business of Fashion, May 2023

Google is testing generative artificial intelligence in search, heralding big changes to the platform's user experience, e-commerce features and advertising. This AI-powered search draws on a Google Shopping Graph with over 35 billion product listings to present recent reviews, ratings, prices and product images that can inform purchasing decisions.



# CHAT GPT ASSISTED SHOPPING

Business of Fashion, May 2023



**shopify**

**amazon**



**K E R I N G**

“A new wave of ChatGPT assistants from companies like Shopify, Amazon and Kering could transform how we shop online”

# KLARNA

Consumer Study

5,000 consumers / 5 countries

**65%**

Want customized shopping experiences

**35%**

Want VTO

**48%**

Want Virtual dressing rooms

**59%**

Would shop with Robots

**28%**

Expect AI will recommend fit and style



A payment platform becomes AI powered search engine

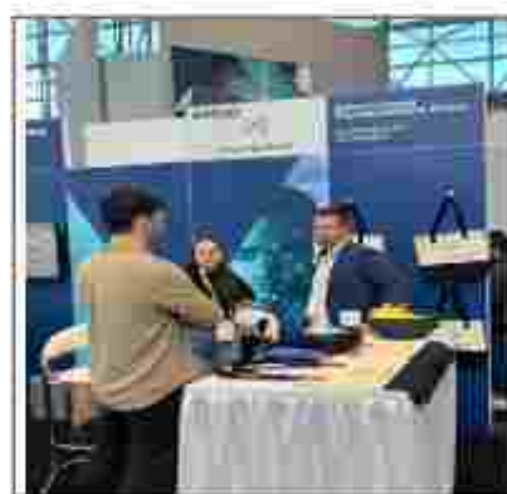
# AI RECOMMENDER AND TREND

## Lily AI



Generative AI and computer vision to extract attributes to improve conversion at the search level, SEO, SEM, Demand planning. Fuel your existing search engine, your PIM and your SEO/SEM tools with the deepest and most accurate product attribution data in commerce – over 15,000 attributes and counting.

## Crossing Minds

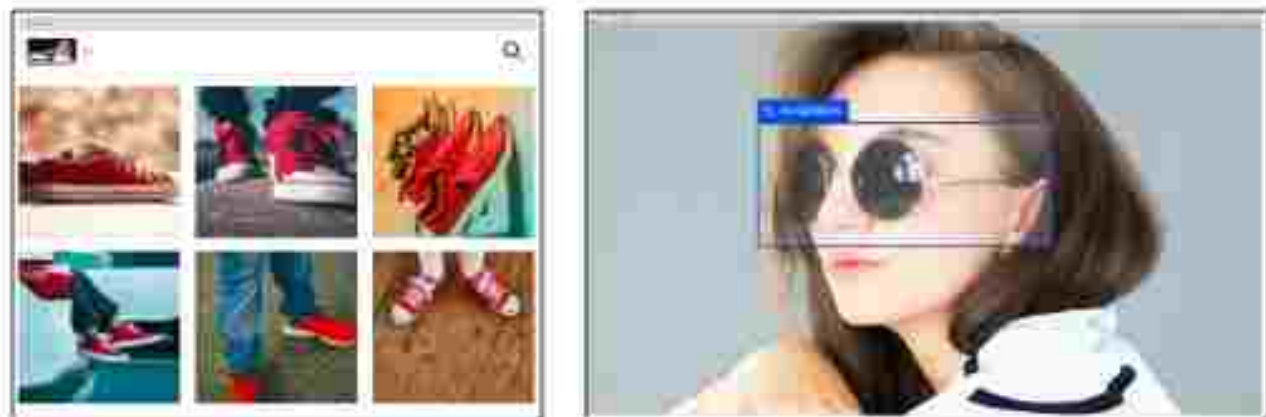


AI driven Behavior based recommendation engine

Make your recommendations to the next level boosting conversions, engagement, and retention with the only Shopify backed AI recommender system. Ecomm, retargeting, cross sell, upsell, social selling

# AI RECOMMENDER AND TREND

## Clarifai



Clarifai Inc. is an artificial intelligence company that specializes in computer vision and uses machine learning and deep neural networks to identify and analyze images and videos. The company offers its solution via API, mobile SDK, and on-premise solutions:

- Increase conversions with similar product recommendations
- Maintain customer engagement in situations where an item is out of stock. Suggest similar relevant product suggestions to reduce bounce rates, increase basket size and drive sales.
- With AI automated data labeling, provide them with faster expanded search results to reduce bounce rates and make purchase decisions faster. Use our apparel, furniture, home goods or general models to automatically label your visual data with relevant keywords.

## Hueritech



Created in 2013 by two PhDs in Machine Learning. Our fashion experts provide you with an analysis of insights drawn directly from the consumer.

We analyze 3 million images daily shared on Instagram / social media, and we can recognize over 2000 apparel details. Our consumer panels represent different segments, from celebrity influencers to mainstream consumers.



# AI DESIGN TOOLS



Seddi



SEDDI's 3D engine uniquely applies physical science and data to simulate textiles, garment, footwear and bodies with accuracy you can't achieve any other way

Trustworthy digital textiles: AI-powered virtual fabrics with yarn level simulation

Realistic human forms

Soft tissue digital avatars for reliable fit and drape

Reseleeve



Our AI has been trained on high-performing copy from the top brands. It knows what converts and how to write content.

All visuals, including garments and models, are generated by Reseleeve AI and do not exist in real life.

This Sneaker Does Not Exist



GAN's with sliders for footwear design inspiration



# ADOBE FIREFLY

May 23, 2023



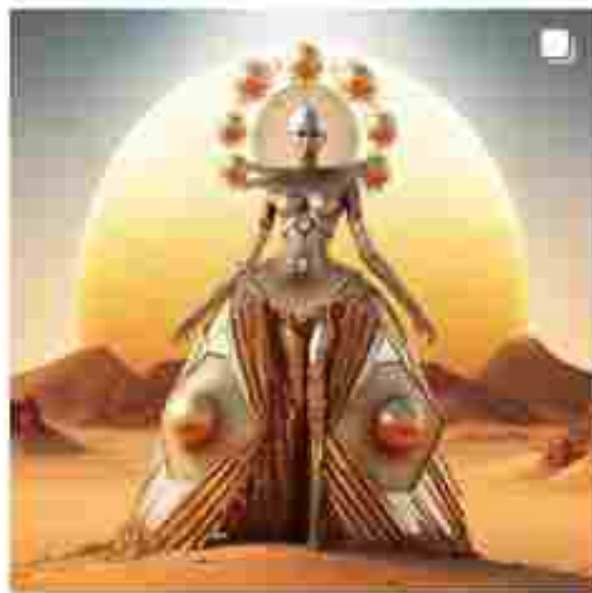
Generative Fill unlocks new creative potential for Photoshop customers, enabling users to add, expand, or remove content from images non-destructively, using simple text prompts

# DRAG-GAN

Interactive Point-based Manipulation on the Generative Image Manifold



## DRESS X



DRESSX kicked off 2023 with the first ever Fashion co creation challenge using AI, rewarding the winners with shared revenue from sales of their wearables in DRESSX platforms using Midjourney in Discord,

They received over 700 unique submissions of ai-generated fashion, generating 800k+ impressions on twitter using the hashtag DressxAIcreator

The 3 AI items from the contest have been tried on in AR over 10,000 times in the DRESSX app

# AI FASHION WEEK

April 20-21 /2023



With over 350 submissions, AI Fashion Week provides a platform for designers to showcase their latest AI-generated designs, giving them the opportunity to present their work to a wider audience and potentially gain new customers and clients



# McKinsey & Company

What every CEO should know about generative AI May, 2023

Lessons CEOs as they embark on the generative AI journey:

- Transformative use cases that offer practical benefits for jobs and the workplace already exist. Companies across sectors, from pharmaceuticals to banking to retail, are standing up a range of use cases to capture value creation potential. Organizations can start small or large, depending on their aspiration.
- Costs of pursuing generative AI vary widely, depending on the use case and the data required for software, cloud infrastructure, technical expertise, and risk mitigation. Companies must take into account risk issues, regardless of use case, and some will require more resources than others.
- While there is merit to getting started fast, building a basic business case first will help companies better navigate their generative AI journeys.



# FUTURE TODAY INSTITUTE

Amy Webb, SXSW 2023



LENSA AI Portrait of Amy Webb

"AI is a force multiplier on technological progress because it is an enabler of other technologies and powers the evolution of business, government and society

Leaders already see AI as necessary for growth in the current macroeconomic environment

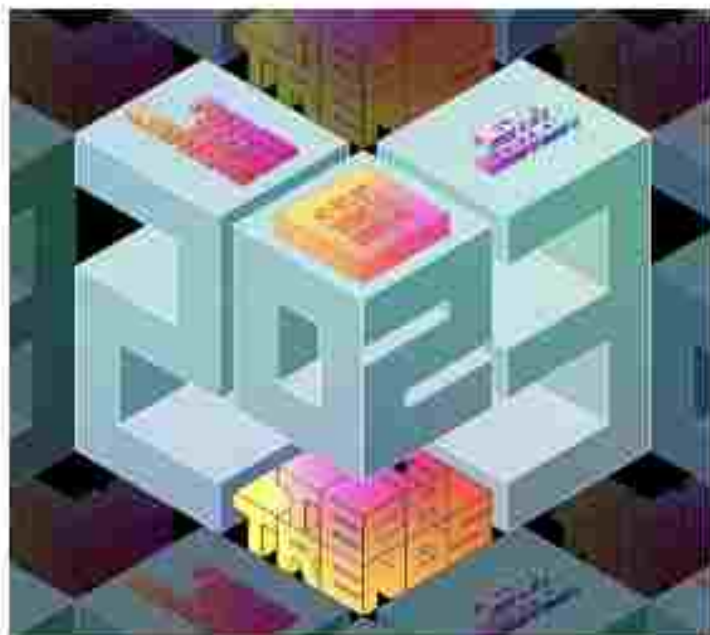
Companies will win by providing "a refined/value-added LLM product" to the end consumer and meeting the customer in desired distribution channels"

Amy Webb



# Future Today Institute

Amy Webb, SXSW 2023



# TRYING TO KEEP UP

Drinking from the AI Firehose

The logo for TLDR, with each letter in a different color: T (blue), L (green), D (red), R (purple).

Byte sized news for techie folks



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Top blogs and platforms for non Coders

andreesen.  
horowitz  
The AI Canon



[https://a15z.com/2023/05/25/ai-canon/?utm\\_source=tidra](https://a15z.com/2023/05/25/ai-canon/?utm_source=tidra)



Handwritten text in a cursive script, possibly a list or a set of instructions. The text is written in dark ink on a light-colored background. The words are difficult to decipher due to the cursive style and some fading.

Handwritten text in a cursive script, similar to the first block. It appears to be a continuation of the list or instructions. The handwriting is consistent with the first block.



next  
now

If interested in presentation of this or any other Next Now material, please contact:

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