The Next Frontier in AI:
Generative AI

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What is Generative AI?

Generative AI – a type of AI that learns to mimic human intelligence to create novel content

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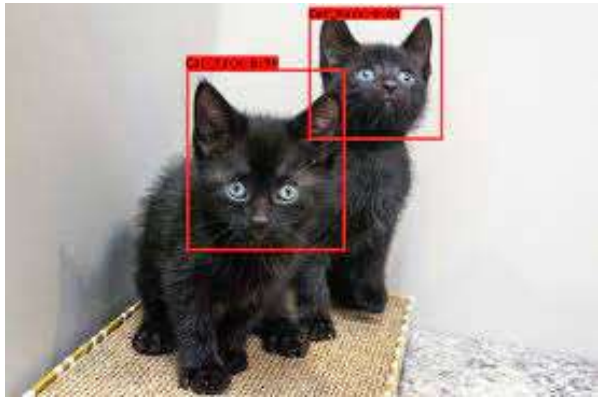
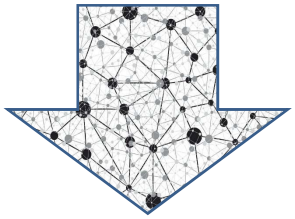
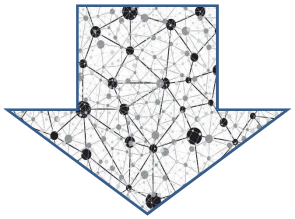
AI's Evolution: Discriminative vs Generative

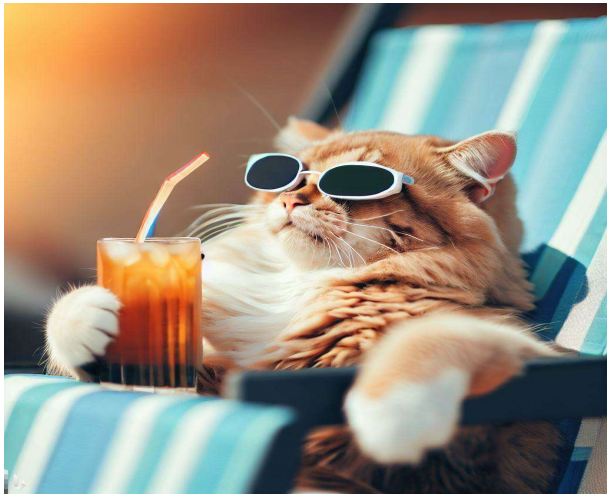




CAT

Create an image of a cat enjoying a cool drink on a deck chair with sunglasses





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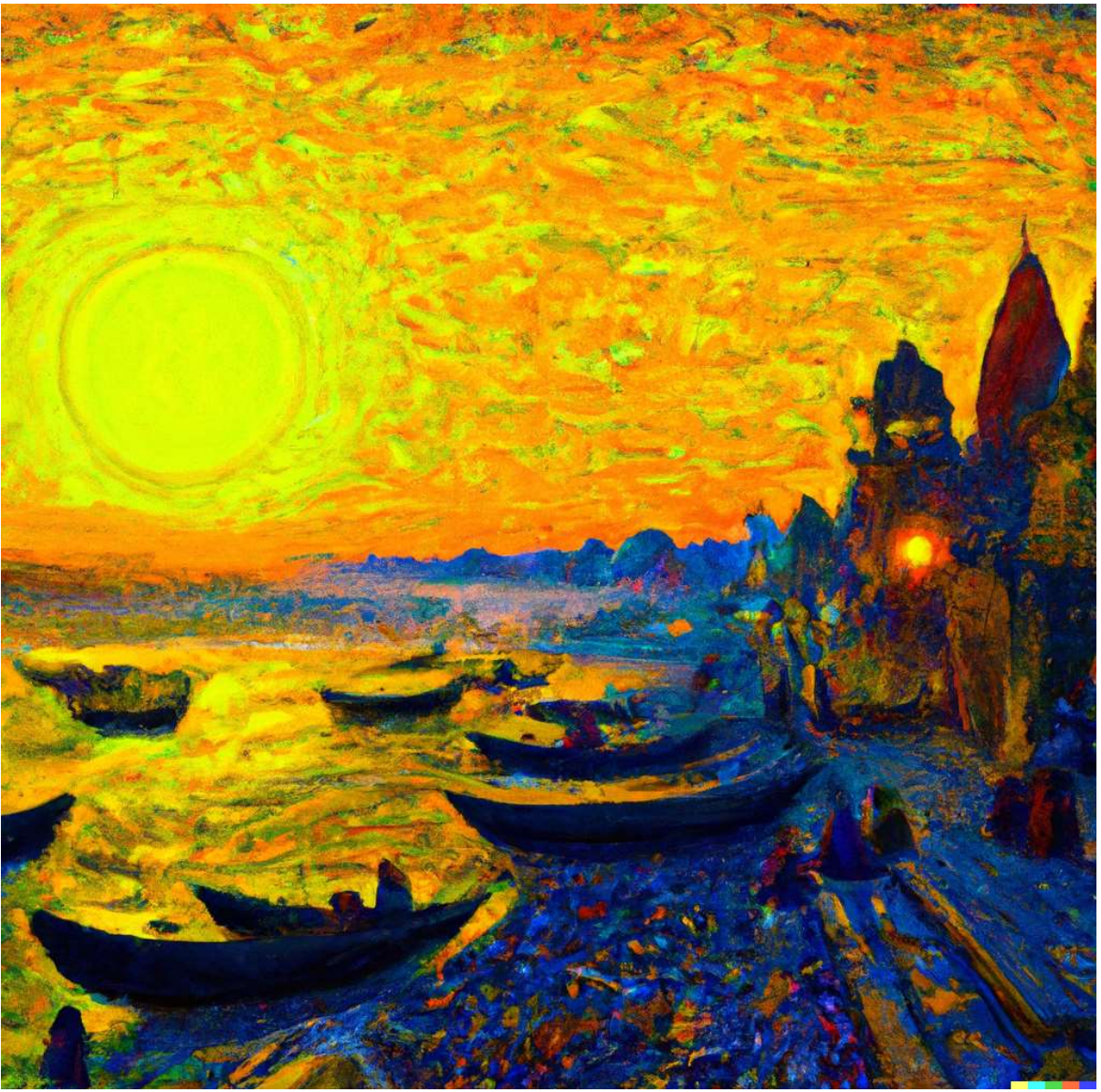

"Sunrise at the Varanasi Ghats in Van Gogh's style"

DALL·E

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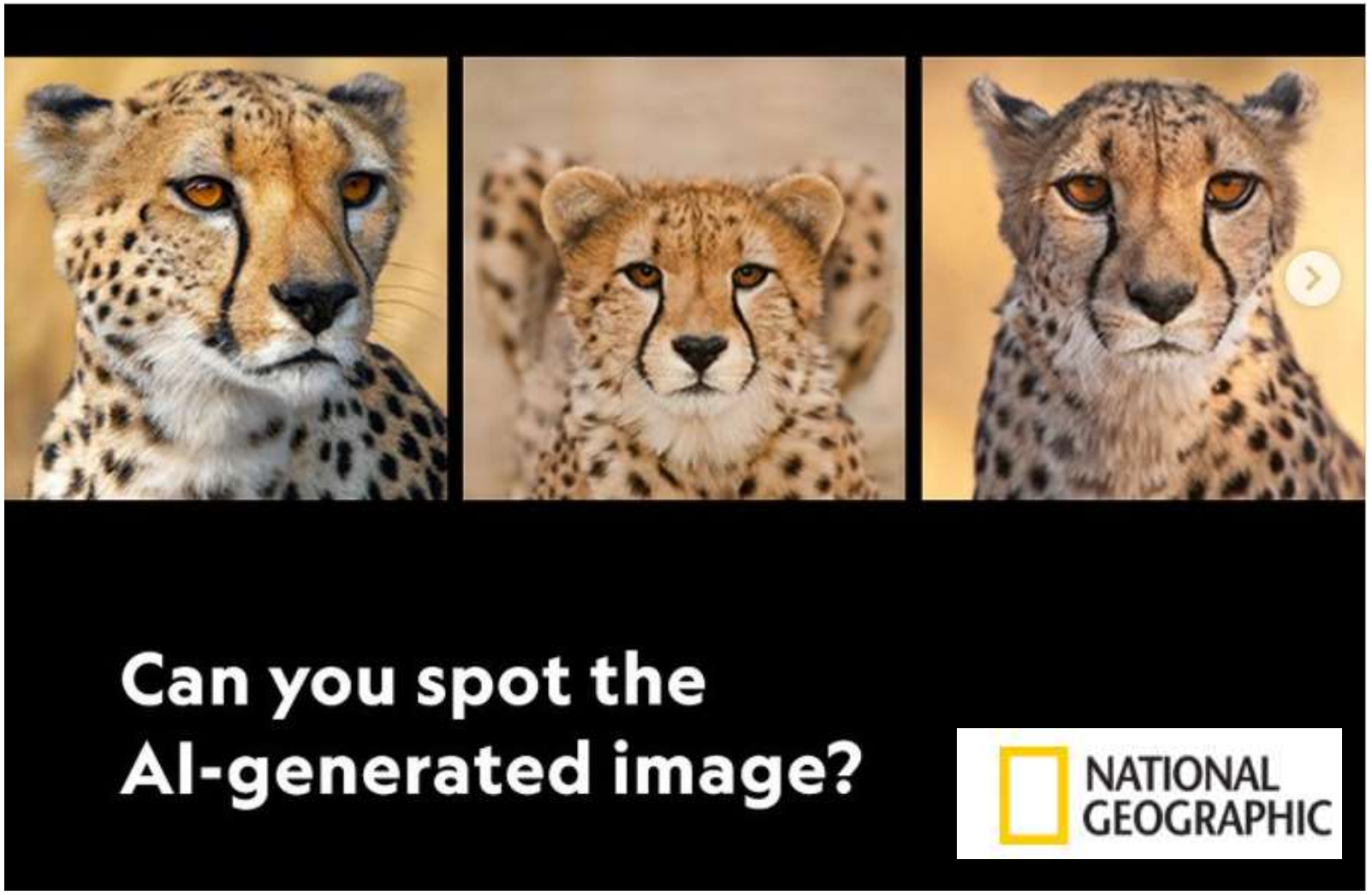

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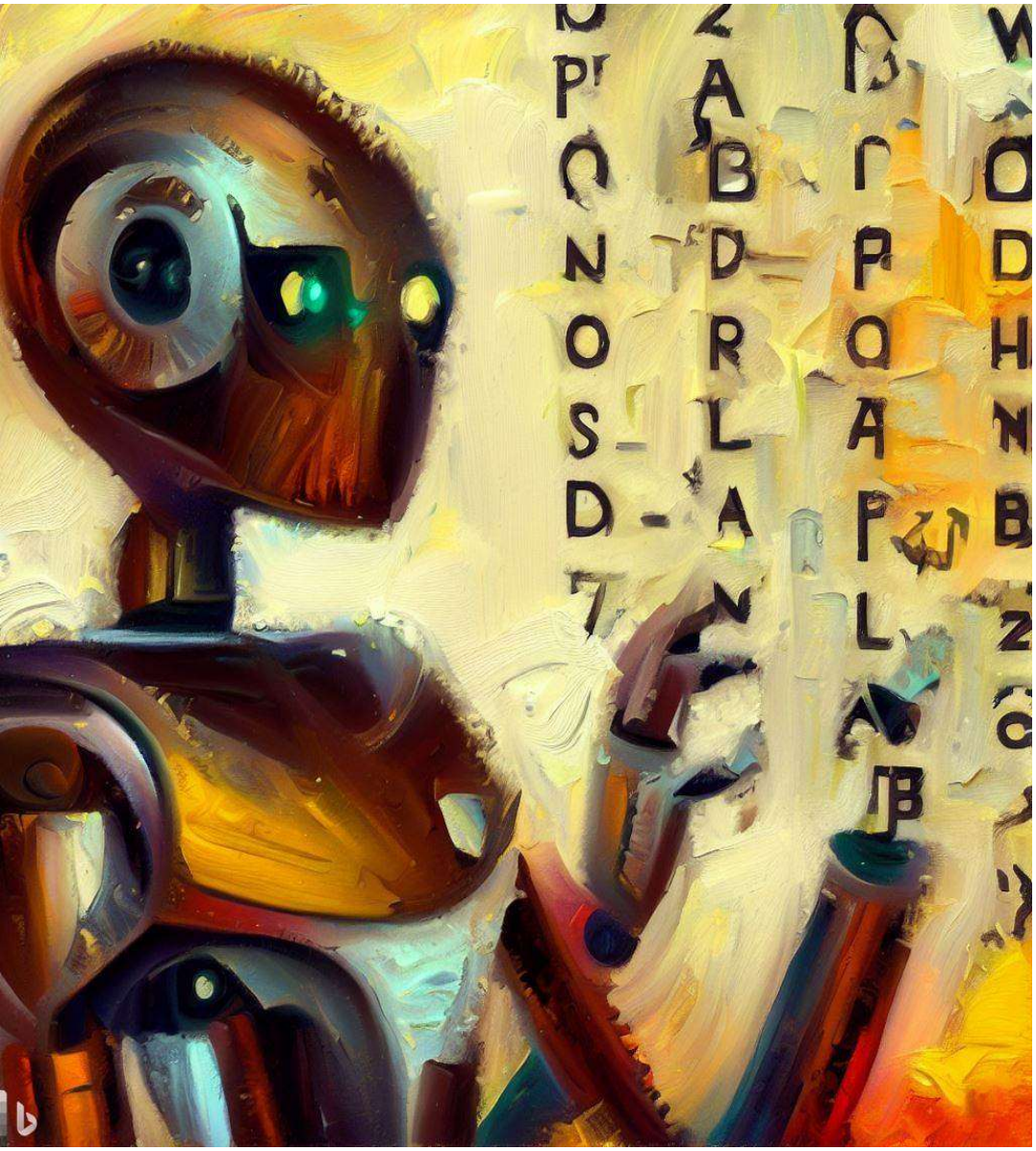

The Biggest Opportunity In Generative AI Is Language, Not Images

Language is humanity's single most important invention. More than anything else, it is what sets us apart from every other species on the planet. Almost nothing about modern civilization would be possible without language.

https://www.forbes.com/sites/robtoews/2022/11/06/the-biggest-opportunity-in-generative-ai-is-language-not-images/?sh=2f3c5d32789d

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It's getting better and better…

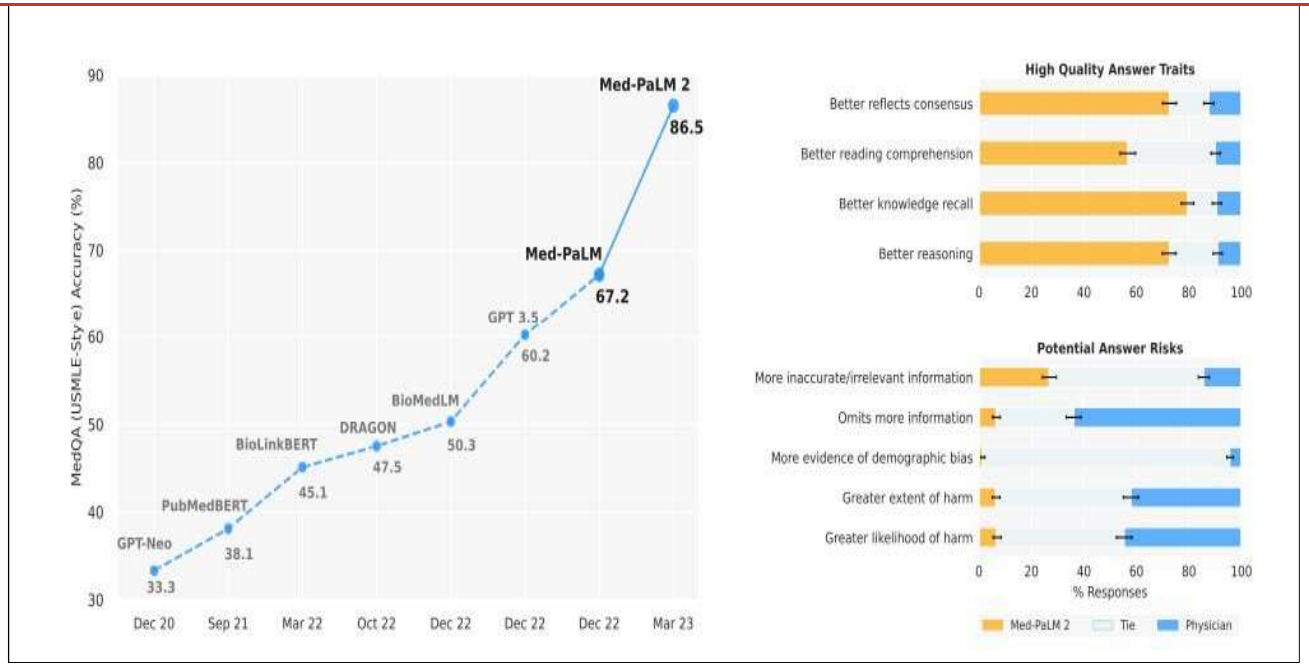
```
#!/usr/bin/env ts-node

import { fetch } from "fetch-h2";

// Determine whether the sentiment of text is positive
// Use a web service
async function isPositive(text: string): Promise<boolean> {
  const response = await fetch(`http://text-processing.com/
    method: "POST",
    body: `text=${text}`,
    headers: {
      "Content-Type": "application/x-www-form-urlencoded",
    },
  });
  const json = await response.json();
  return json.label === "pos";
}
```

Code assistant increases productivity by 55%

Chatbot passes US law and business exams



Google's new medical LLM, Med-PaLM 2, scored 86.5% on the medical exam MedQA . A panel of 15 human doctors preferred Med-PaLM 2's answers over real doctor answers across eight of nine axes across 1066 standardized questions.

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https://www.youtube.com/watch?v=QW-NFkVDfdA

AI's Strategic Inflection Point…

when AI moved from a tool for data scientists to a tool for 100s of millions of people… enabled by just the English language…

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Creating a Pivotal Moment for the world

"Breakthroughs in generative artificial intelligence have the potential to bring about sweeping changes to the global economy. As tools using advances in natural language processing work their way into businesses and society, they could drive a 7% (or almost $7 trillion) increase in global GDP and lift productivity growth by 1.5 percentage points over a 10-year period."

Goldman Sachs Research

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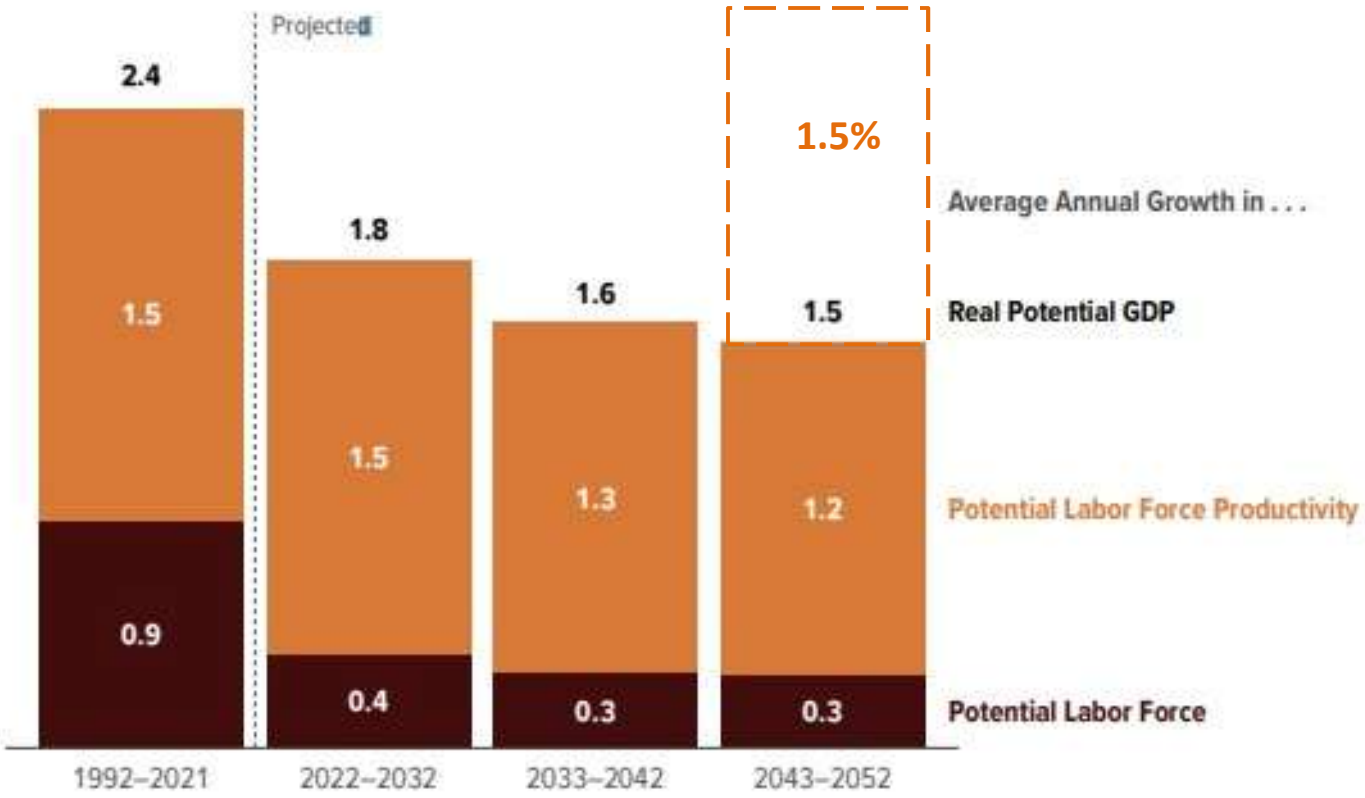
Leading to Reinvention of Major Processes across Sectors

Healthcare	Financials	Advertising & Digital Content	Retail & Freight	Energy & Industrials	Customer Service	Business Intelligence
Smart Implants (Ex: Hip & Knee)	AI Thematic Fund Offerings	Marketing Efficiency	3D Shopping & Product Try On	AI Tools for Pipelines	Customer Analytics	Developer Tools & Assisted Code
Medical Imaging	New Trade Pricing Tools	Enhanced Ad Targeting	Sidewalk Robots for Deliveries	Geological Models	Insurance Claims and Records	AI-Related Consulting
Pathology Detection	Generate Client Portfolio Reviews	Recommendation Engine	Supply Chain Efficiency	AI-Enabled Microgrid Tools	Transcribe and Summarize	Integrated Smart Home Interface
Personalized Medicine	Automated Trade Prices, Execution	Higher Ad Conversion	Inventory Management	Energy Usage Analytics	Client Onboarding	Automate Back Office Tasks
Identify Biomarkers	AI Portfolio Management	Ad Auction Dynamics	Demand Prediction	Energy Trading Enhancements		Fraud Prevention and Protection
New Drug Development	Increase Trading Velocity	Content Creation	Truck Routing Capabilities	Labor Scheduling		Cybersecurity Capabilities
Analysis of Genomic Data		Customized Travel Itineraries	Higher Fleet Utilization	Reservoir Optimization		Risk Assessment & Management
Physician Point of Service Tools		Video Game Development	Autonomous Fleet Networks	Leak Detection & Track Emissions		Accelerated Data Analysis
						Predictive Modeling

Source: Company Data, Morgan Stanley Research

Composition of the Growth of Real Potential GDP

Percent



Data source: Congressional Budget Office. See www.cbo.gov/publication/57971#data.

Growth in real potential GDP is projected to be slower over the next 30 years than it was over the past 30 years. That slowdown occurs mostly because the potential labor force is projected to grow more slowly than it has in the past. Within the 2022–2052 period, the growth in real potential GDP slows primarily because the growth of potential labor force productivity slows in those years.

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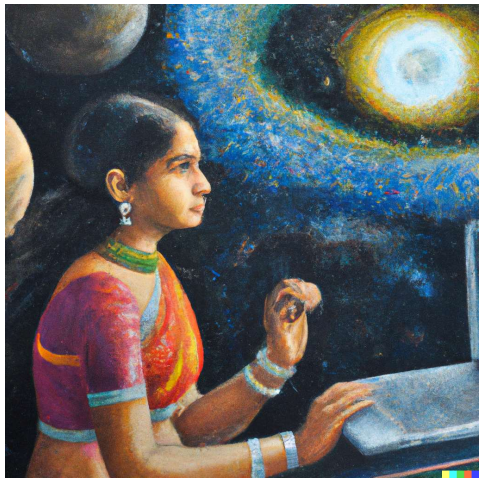
Source: GoldmanSachs

WARREN BUFFETT COMPARES AI TO THE ATOM BOMB
"BUT IS IT GOOD FOR THE NEXT 200 YEARS OF THE WORLD THAT THE ABILITY TO DO SO HAS BEEN UNLEASHED?"

Key Challenges and Limitations of Gen AI



Ethical Considerations

Misinformation, Privacy and Security

Hardware Requirements

Job Displacements

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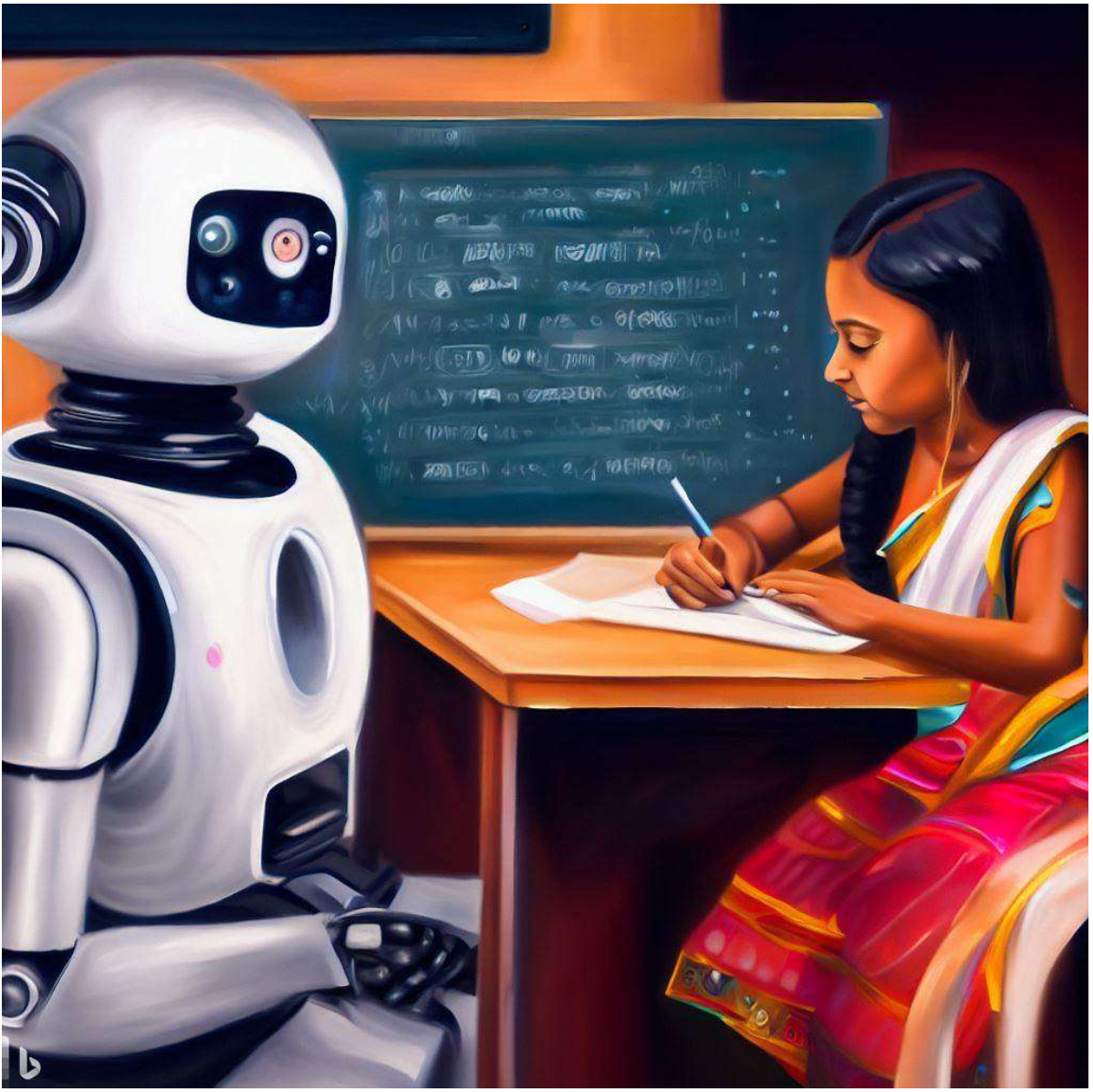

Our Opportunity:

Lead the world into the era of Augmented Intelligence

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From Risk led to Enablement led + Risk Mitigation

Shift from AI Risk led approach

- Regulating Technologies
- Focus on Compliance
- Introducing new laws

To an Innovation driven, risk mitigation approach

- Tech agnostic use case led regulation
- Leverage existing laws
- Strengthen regulatory capability
- Focus on effective enforcement

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We will NOT lose our jobs to AI.
People without AI Skills will lose their jobs to people with AI Skills.
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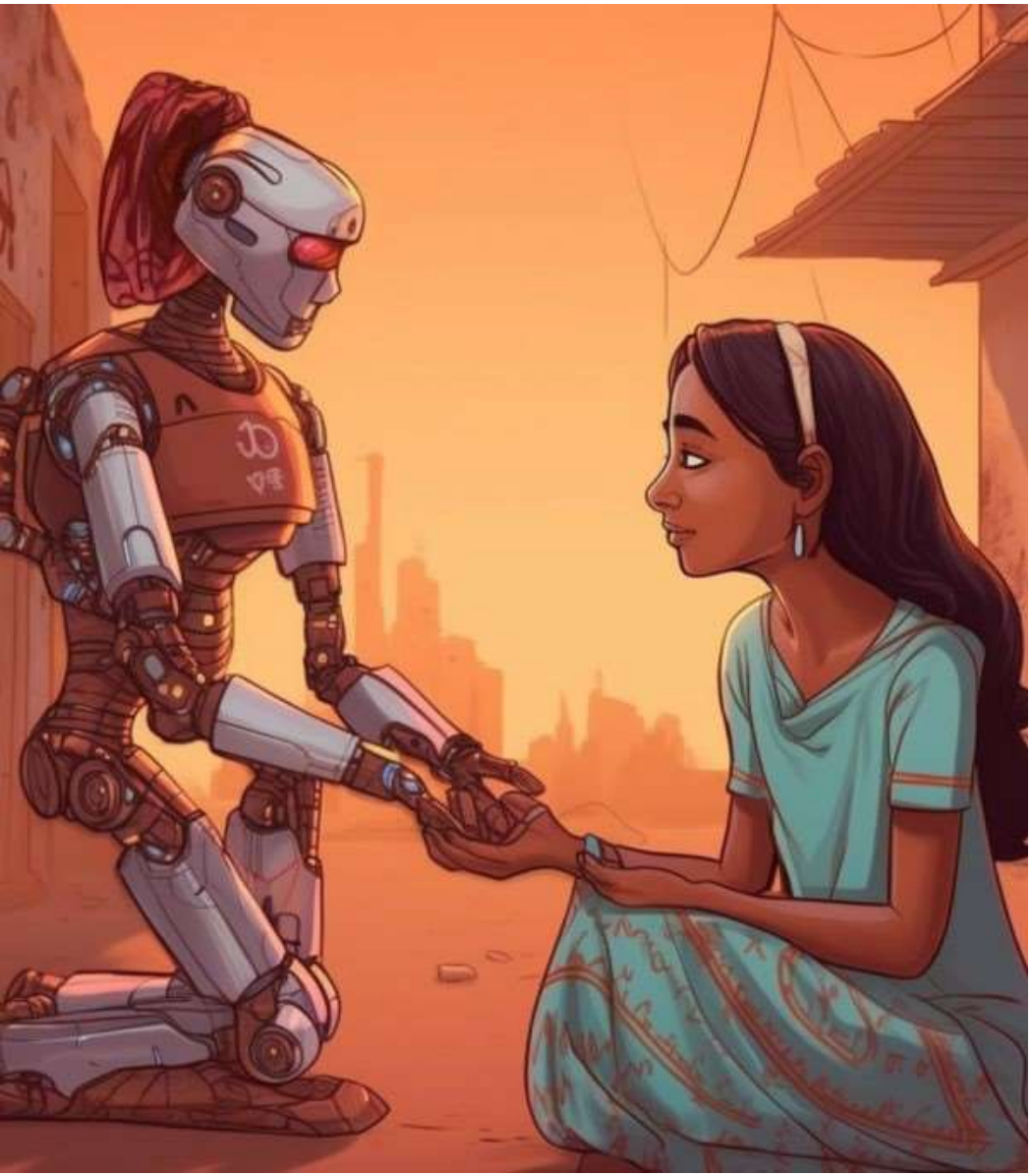

Instead of just worrying about what AI *could* do....

We MUST focus on what AI *should* do.

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