

# Weaving the Future: The Revolutionary Impact of Generative AI in the Textile Industry

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 | **OUTLOOK**<sup>®</sup> CONFERENCE

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An iceberg floating in clear blue water. The small tip above the surface is labeled 'ChatGPT', while the much larger, jagged mass below the surface is labeled 'Generative AI'. Sunlight rays penetrate the water from the left, illuminating the scene.

**ChatGPT**

**Generative AI**

# Historical Perspective on Computing



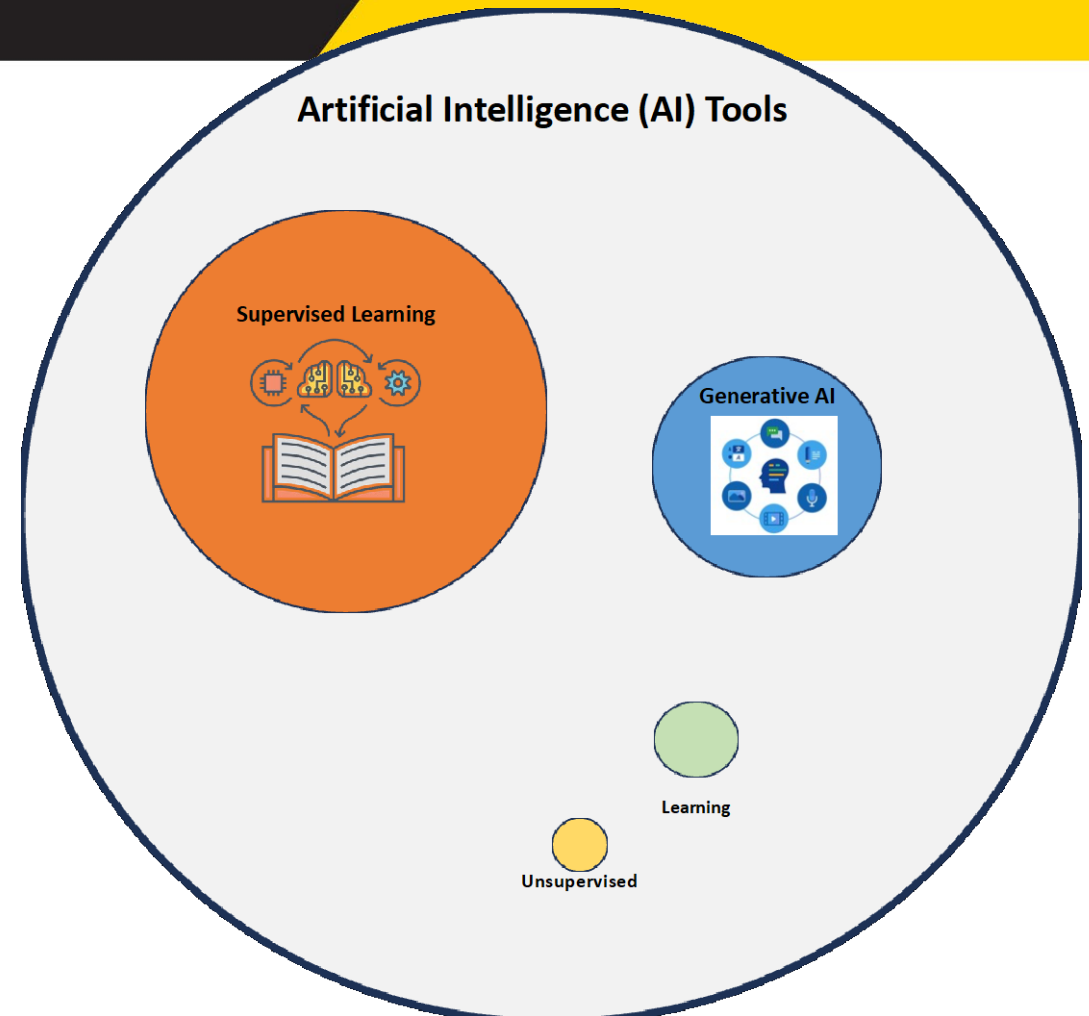
- Hyper-Literal Nature
  - 80 Years of Literal Interpretation
  - Lack of Reasoning Skills
  - Modeled After the Calculator

# Supervised Learning AI

- Image Classification
- Object Detection
- Text Identification (Names, DOB, etc.)

# Generative AI

- Creating (Text, Music, Video, Image)
- Reasoning Skills
- Vision Interpretation
- Enable Human-Computer Interaction



# General Purpose Technology



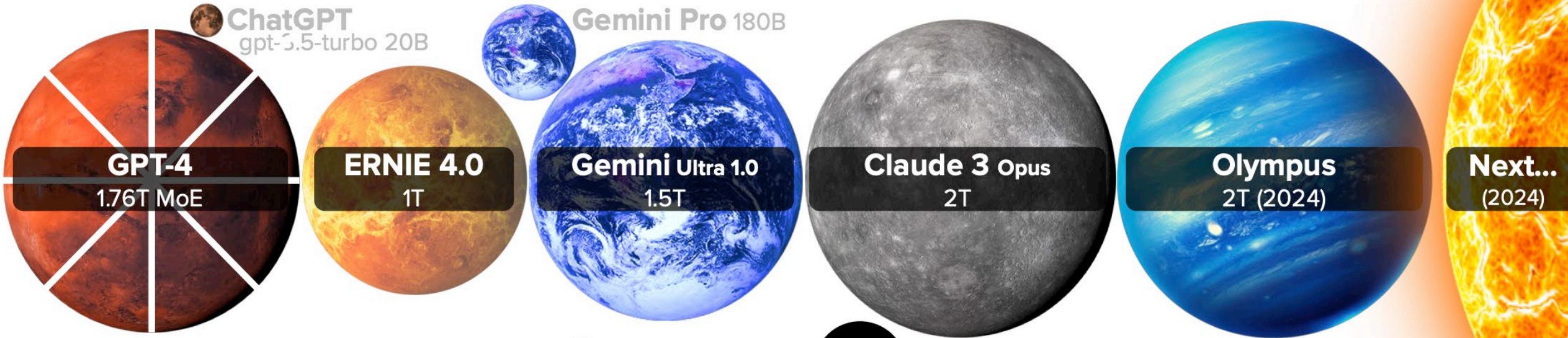
100 years ago, electricity transformed every industry



GenAI is bringing an equally big transformation



# LARGE LANGUAGE MODEL HIGHLIGHTS (MAR/2024)



● **Nano**

Mamba 2.8B  
phi-2 2.7B  
...

● **XS**

Pythia 12B  
Mistral 7B  
Zephyr 7.3B  
Gauss  
StripedHyena 7B  
Persimmon-8B  
DeciLM-7B  
SOLAR 10.7B  
Gemma 7B

● **30B Small**

Palmyra 20B  
C1.2  
Retro 48B  
MPT-30B  
Command-R 35B  
Yi-34B  
Mixtral 8x7B  
...

● **70B Medium**

Command 52B  
StableLM 65B  
Llama 1 65B  
Luminous Supreme  
Llama 2 70B  
Perplexity 70B Online  
Qwen-72B  
DeepSeek 67B

● **180B Large**

Yuan 2.0 102.6B  
InternLM 104B  
Jurassic-2  
Falcon 180B  
Claude 2.1  
Mistral-medium  
DBRX 132B MoE  
...

**Grok-1**  
314B

**PaLM 2**  
340B

**Inflection-2.5**

↔ Parameters

AI lab/group

Sizes linear to scale. Selected highlights only. All models are available. All models are Chinchilla-aligned (20:1 tokens:parameters) <https://liferchitect.ai/chinchilla/> All 300+ models: <https://liferchitect.ai/models-table/> Alan D. Thompson, 2023-2024.



# GENIUS VS AI (FEB/2024)



**Average human**



**Terence Tao**



**William James Sidis**



**GPT-4**



**Gemini 1.0 and 1.5**

	Average human	Terence Tao	William James Sidis	GPT-4	Gemini 1.0 and 1.5
<b>IQ percentile</b>	50 <sup>th</sup>	>99.9 <sup>th</sup>	>99.9 <sup>th</sup>	>99.9 <sup>th</sup>	>99.9 <sup>th</sup>
<b>Languages</b>	2	2	25+	90+	200+
<b>Books read</b>	700	700+	700+	4,000,000+	10,000,000+
<b>Working memory</b>	7 words	9+ words	9+ words	128,000 words	7,000,000 words
<b>Long-term memory</b>	74TB	74TB	74TB	40TB	80TB
<b>SAT score</b>	1050 (50 <sup>th</sup> )	~1460 (97 <sup>th</sup> )	-	1410 (94 <sup>th</sup> )	

Sources: Working memory extrapolated from Miller, 1956, and Cowan, 2000, <https://doi.org/10.1017/S0140525X01003922>. Long-term memory extrapolated from Stanford, 2010, <https://pubmed.ncbi.nlm.nih.gov/21092855/>. Alan D. Thompson. Sep/2023, Feb/2024. <https://life architect.ai/iq-testing-ai>



# Live Demonstration of Use Cases

Finance

Production

Human Resources

Supply Chain

Customer Service

Servicing

Sales



# Data Security & Privacy

- Commercial ChatBots (ChatGPT, Claude, Gemini, etc.)
- Commercial vs. Open Source Models
- Cloud Providers (AWS, Azure, Google)

How to begin?

Crawl -> Walk -> Run -> Fly  
> Fly

Crawl -> Walk -> Run -> Fly

> Fly

# Crawl: Lay the Foundation

- **Education and Understanding:** Begin by educating yourself and your team about what GenAI is and its potential benefits for your specific industry and business. Stay updated with the latest trends and advances in GenAI.
- **Identify Business Needs:** Evaluate your organization's needs, challenges, and areas where GenAI could provide significant value. This step involves understanding the problems you aim to solve with GenAI and aligning them with your business goals.

Crawl -> Walk -> Run -> Fly

> Fly

# Walk: Start Small and Experiment

- **Pilot Projects:** Implement GenAI in small, controlled projects to understand its impact and gather insights. Choose projects that can provide quick wins or valuable learning experiences.
- **Feedback and Iteration:** Collect feedback from users and stakeholders. Use this feedback to refine your approach and improve GenAI implementation strategies.

Crawl -> Walk -> Run -> Fly  
> Fly

# Run: Scale and Integrate

- **Integration and Change Management:** Integrate GenAI tools into existing workflows and systems. Prepare for organizational changes by ensuring that your team understands the role of GenAI and how it will impact their work.
- **Continuous Learning and Adaptation:** Encourage a culture of continuous learning and adaptation. Provide resources and training for employees to grow their understanding and usage of AI tools.

Crawl -> Walk -> Run -> Fly

> Fly

# Fly: Innovate and Transform

- **Innovative Applications:** Explore innovative applications of GenAI beyond the initial use cases. Look for opportunities to use GenAI in creating new products, services, or business models
- **Continuous Evolution:** Regularly review the performance of GenAI systems and update your strategy and implementation plans based on outcomes. Stay agile and ready to adapt as GenAI technology advances

# Q&A

- Open Discussion

# Speaker Contact Information



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