DIGITAL TIMELINE

1950 – Turing proposes the Turing Test for machine intelligence

1956 – Dartmouth workshop coins the term 'Artificial Intelligence'

1958 – Rosenblatt's Perceptron and McCarthy's Lisp lay AI foundations

1959 – 'Machine learning' term introduced (Arthur Samuel's self-learning program)

1965 – DENDRAL expert system helps chemists (first expert system)

1966 – ELIZA chatbot mimics human conversation; Shakey robot pioneers mobile AI

1973 – Lighthill Report leads to reduced funding (first AI winter begins)

1980 – Expert systems boom (Lisp machines); AI sees commercial success

1987 – Collapse of Lisp machines triggers the second 'AI winter'

1989 – LeCun's CNN reads handwritten digits, proving neural networks' practicality

1997 – IBM's Deep Blue defeats chess champion Garry Kasparov

2009 – ImageNet dataset released, fueling data-driven deep learning progress

2011 – IBM Watson wins Jeopardy!; Apple Siri brings AI assistants to phones

2012 – Deep neural network (AlexNet) wins ImageNet contest, igniting deep learning

2013 – DeepMind's DQN learns Atari games via deep reinforcement learning

2014 – Goodfellow invents Generative Adversarial Networks (GANs) for realistic images

2016 – AlphaGo beats Go champion Lee Sedol, a milestone in AI prowess

2017 – Transformers (Vaswani et al.) introduce new era of large language models

2018 – OpenAI releases GPT (Generative Pre-trained Transformer) model for language

2019 – OpenAI's GPT-2 shows unprecedented text generation (initially partly withheld)

2020 – OpenAI's GPT-3 (175B) sets new NLP benchmarks; DeepMind's AlphaFold solves protein folding

2021 – OpenAI's DALL·E generates images from text, advancing multimodal AI

2022 – OpenAI launches ChatGPT, bringing conversational AI to millions

2023 – GPT-4 debuts as a multimodal model; Google Bard and others join AI chatbot race

2024 – EU passes AI Act as first major AI regulation; generative AI adoption surges

2025 – Global AI investment soars; focus shifts toward artificial general intelligence (AGI)

Historical Context – Major Milestones in AI (1950s Onwards)

📘 **1950 – The Turing Test**
➡️ Alan Turing introduces a benchmark for machine intelligence, laying AI's philosophical foundation.

🎓 **1956 – The Birth of AI**
➡️ Dartmouth Conference officially launches AI as a field of study, coined by John McCarthy.

💬 **1960s – Early AI Programs**
➡️ Programs like *ELIZA* and *SHRDLU* showcase early attempts at language understanding.

⚙️ **1970s – Expert Systems Emerge**
➡️ Systems such as *MYCIN* demonstrate how AI can make specialized decisions using rules.

🧠 **1980s – Neural Network Revival**
➡️ Backpropagation brings neural networks back to life, enabling computers to "learn" from data.

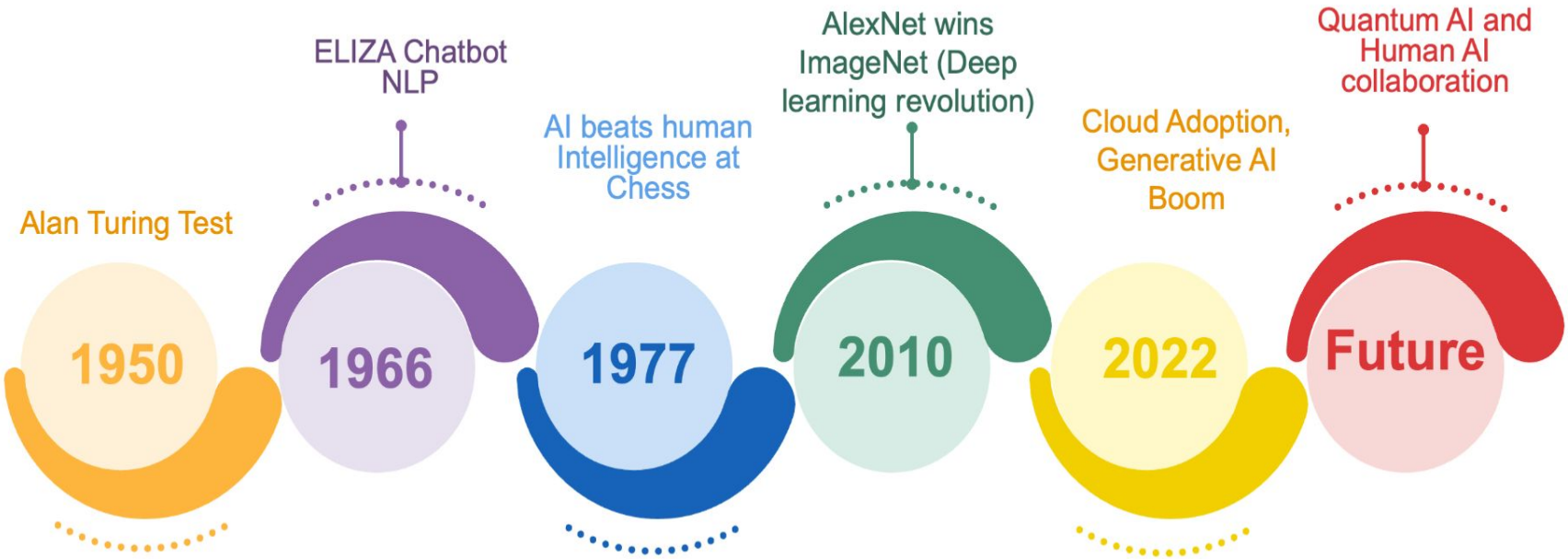
♟️ **1997 – IBM Deep Blue Triumph**
➡️ AI makes history by defeating world chess champion Garry Kasparov, proving its strategic power.

🌐 **2000s – AI in Daily Life**
➡️ AI becomes mainstream with smart assistants, recommendation engines, and online personalization.

🚀 **2010s – Deep Learning Revolution**
➡️ Advances in GPUs and big data fuel breakthroughs in vision, speech, and natural language.

🤖 **2020s – Generative AI Era**
➡️ AI models like ChatGPT transform creativity, automation, and human-computer interaction.

Key Milestones



AI Winters

It is a period when funding for AI is less, reduced interest. Happened after periods when the outlook was promising, and the field well funded.
Two major "winters" 1974–1980 and 1987–Early 1990s

First AI Winter

The initial optimism and ambitious predictions about AI's potential led to unrealistic expectations. The technology available during the time placed limitations on what was possible.
Lighthill Report published in 1973 by Sir James Lighthill which criticized failure to achieve "grandiose objectives" in AI dealt a heavy blow to AI research in UK and in the US.

Second AI Winter

The 1980s success of expert systems (specialized systems that try to duplicate expertise in a field, say an engineer) led to another increase in expectations about AI's capabilities. The expert systems were often limited to highly specific domains and required substantial manual input to build and updating of their knowledge bases with new data, and failed to operate outside the set rules.
The result was that many AI applications failed to live up to the hype, leading to disappointment among investors and the public.
There was a significant drop in investments, as the industry re-assessed the viability of AI technologies.

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Three Levels of AI Evolution

- **Artificial Narrow Intelligence (ANI)**
  - Known as Weak AI – built for one specific task,
  - Examples: Siri, Alexa, ChatGPT, Face Recognition
- **Artificial General Intelligence (AGI)**
  - Strong AI – learns, reasons, and adapts like a human
  - Still under research; no real AGI yet
- **Artificial Super Intelligence (ASI)**
  - Hypothetical AI smarter than humans in all fields
  - Could design better machines and solve complex problems

Influential Minds Who Shaped Artificial Intelligence

--4th CENTURY BC--
Aristotle

- Introduced early ideas of logic and reasoning
- His logical methods inspired rule-based systems in AI

--19th CENTURY--
Charles Babbage

- Designed the first mechanical computer- Analytical Engine
- Introduced programmable machines, which form the basis of AI computation

--20th CENTURY--
Alan Turing

- Introduced the Turing Test, which is a way to evaluate whether a machine can exhibit behavior indistinguishable from a human
- Developed universal computation concepts used in AI logic and algorithms

--20th CENTURY--
Geoffrey Hinton

- Reintroduced and popularized backpropagation, a method that allows neural networks to learn from errors
- Developed deep belief networks, an early step toward modern deep learning architectures

--20th CENTURY--
Yann LeCun

- Pioneer of CNNs — a core technology in image recognition
- His work on LeNet made machines capable of reading handwritten digits, inspiring modern computer vision

--21st CENTURY--
Demis Hassabis & Andrew Ng

- Led AlphaGo, the AI that defeated a world chess champion, demonstrating deep reinforcement learning of A.I
- Co-founder of Google Brain and creator of widely used online AI courses, advancing both deep learning research and global AI education

The next AI pioneer could be sitting in this room — keep exploring, stay curious and keep pushing boundaries

FUTURE OF AI TRANSFORMATION

1. Intelligent Domain Automation

- Cybersecurity threat detection, personalized education, healthcare diagnostics, enhanced virtual assistants, and climate solutions= delivering real-world value across industries.

2. Enterprise Copliors & Autonomous Agents

- AI shirts from passive tools to goat-driven agents handling finance, legal operations, customer support, and analytics independently with minimal human supervision

Technical Evolution (Infrastructure & Capabilities)

3. From "Bigger Models" to."Smarter Systems'

- Foundation models evolve into domain-tuned, adaptive plafforms integrated into enterprise stacks with governance, monitoring, and lifecycle tooling for industrialized adoption

4. Agentic Intelligence with Transparency

- Multl-agent collaboration powered by neurosymbolic reasoning and causal Al enables traceable decisions in IoT, vehicles, and wearables

Operational Transformation (How AI Deploys)

6. MLOps to LLMOps Evolution

- Continuous evaluation, cost optimization, and guardrails become standard, Unified routing of data, models, prompts, and agents streamlines deployment across clouds and reduces vendor tock-in

7. Trusted, Auditable AI Systems

- Explamability and policy enforcement In regulated industries, buiit-in monitoring. red-teaming, and lineage tracking manage tisk and compliance

8. Innovation & Resource Efficiency

- Efficient Inference at Scale
- Compression, distillation, and sparse architectures reduce computational cost and energy consumption

10. Responsible & Ethical Deployment

- Success requires balancing innovation with data. privacy, algorithmic fairness, and responsible governance

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