

Knowledge; Artificial Intelligence?

Is it really?

AI and Intelligence

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Order

- Types of knowledge
- Intelligence
- Living things
- Human intelligence
- Artificial intelligence
- Applications
- Turing test
- Consequences

Types of Knowledge

- Explicit
- Tacit
- Declarative
- Procedural
- A priori
- A posteriori
- Specific types depending on context

Knowledge as JTB

- **Truth:** The belief must be true.
- **Justification:** The belief must be justified, meaning that there is good reason to believe it.
- **Belief:** The person must believe the proposition

Sources of Knowledge

- Perception
- Reasoning
- Intuition
- Faith
- Authority
- Instinct
- Experience
- Testimony
- Introspection
- Inference

Intelligence

- The ability to learn, understand, and make judgments or have opinions that are based on reason
- Intelligence can be defined as a general mental ability for reasoning, problem solving, and learning.
- Because of its general nature, intelligence integrates cognitive functions such as perception, attention, memory, language, or planning.

Intelligence

- Not a single thing
- A mechanism to solve problems
- Manifests itself in a huge variety of behaviours
- A flexible set of skills
- The ability to gather information
- Navigate and react to the external world appropriately

Intelligence

- No intelligence without complexity
- Strategy
- Encoding
- Inference

Living things

- Keep track of the state of their own bodies
- Monitoring hunger and fatigue etc.
- Respond appropriately

Intelligence Tools

- Information
- Knowledge
- Memory
- Learning
- Social
- Creativity
- Culture

Human Intelligence

- Sitting next to clever people
- Learned every thing and got an A
- Know: not much but can problem solve

Human Intelligence

- Galton (1860)
- Binet and Simone IQ
- Spearman G- factor
- Raven matrices
- Cattell culture fair test
- Gardner 8 Multiple intelligences

Human Intelligence

- How we perceive cleverness/intelligence
- Musicians Financiers Mathematicians Doctors
Lawyers Architects
- Give status and ascribe intelligence to this
group

Artificial Intelligence

3 Types of Artificial Intelligence

Artificial Narrow Intelligence (ANI)



Stage-1

Machine Learning

- Specialises in one area and solves one problem



Siri



Alexa



Cortana

Artificial General Intelligence (AGI)



Stage-2

Machine Intelligence

- Refers to a computer that is as smart as a human across the board



Stage-3

Machine Consciousness

- An intellect that is much smarter than the best human brains in practically every field

Narrow or Weak AI

- Perform specific tasks only
- Excel at their designated functions
- Lack general intelligence

Strong AI or AGI

- Possess human-level intelligence across a wide range of tasks
- Understand
- Reason
- Learn
- Apply knowledge to solve complex problems

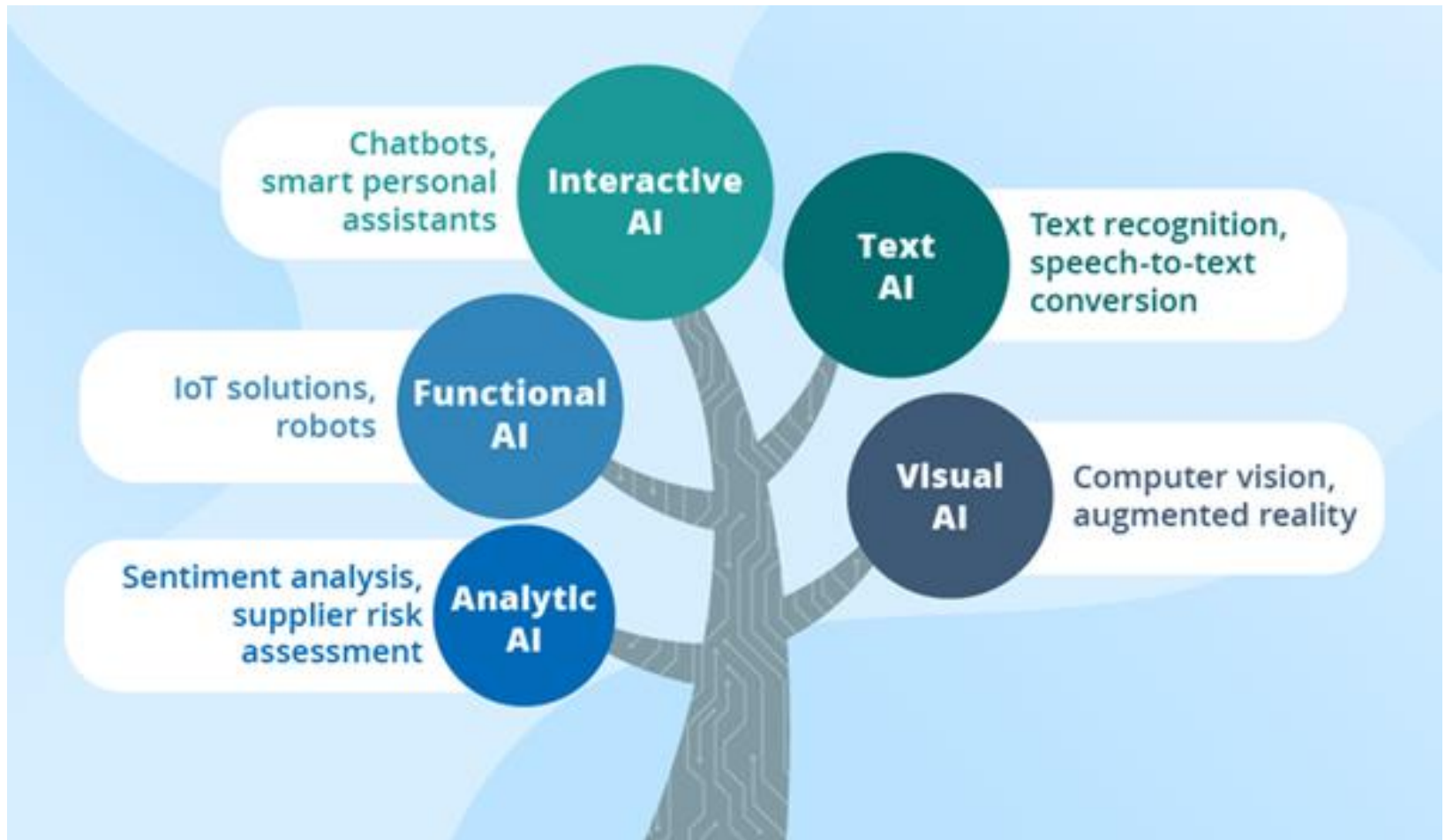
Artificial Super Intelligence

- Is self aware
- Understands humans and their emotions
- Sentient
- Conscious
- Understands itself
- Has thoughts feelings and emotions

How AI works

- Large amount of data is selected and fed into system
- Algorithms are used iteratively to allow the AI to learn
- Discover patterns and generate insights from the data they are exposed to
- The system is optimised for a particular use
- Eg object recognition, language use, etc.

Applications



Applications of Artificial Intelligence

- Natural Language Processing (NLP)
- Image and Video Analysis
- Robotics and Automation
- Recommendation Systems
- Financial Services

Applications

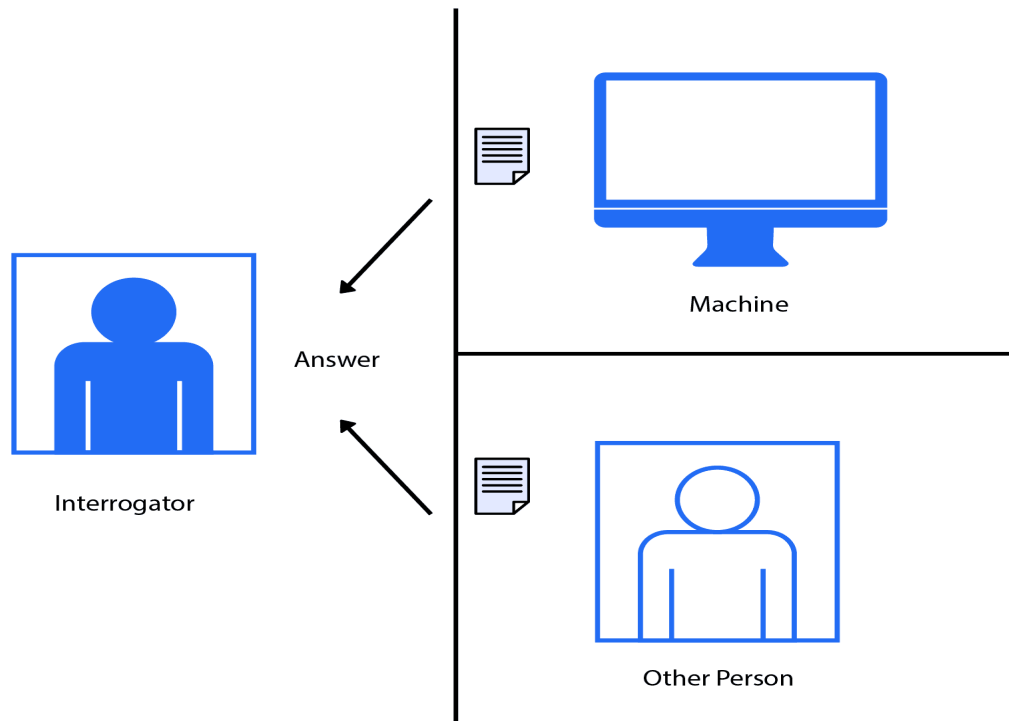
- Virtual Assistants and Chatbots
- Gaming
- Smart Homes and IoT
- Cybersecurity

Know and Use

- ChatGPT Gemini Pi Claude
- Google Maps
- Smart Assistants
- Snapchat Filters
- Self-Driving Cars
- Wearables

Turing Test

Turing Test



Turing Test

- Can a computer think like a human?
- Yes if, under specific conditions, it can mimic human responses
- Considered to have been passed
- There are many other tests for AI

Intelligent Humans

- People who we consider intelligent
- Indicators of intelligence
- Any academic discipline History English Literature etc.
- Mathematicians Scientists
- Lawyers Doctors Financiers
- Artists Musicians

AI is intelligent

- AI as the simulation human intelligence in machines
- In many of these arenas the AI can perform at least as well as the human
- This suggests that the *AI is intelligent*

AI is intelligent

- It is a different type of intelligence from animal intelligence which is a fit to the environment
- The AI intelligence is a fit to the environment to which it has been developed for and emerged from

Consequences

- What is essence of:
- Intelligence
- Consciousness
- Mind
- Experience
- Can a machine can possess theseis
- Are these solely the domain of organic beings

Consequences

- Practical implications
- Design, interact with, and integrate AI systems
- Ethics
- Responsibility and Decision-Making
- The Moral Status of AI
- Enhancement

A Call for Engagement

- Crucial endeavour for the future
- AI technologies are developed and integrated into society
- Enhance human
 - well-being
 - uphold ethical standards
 - respect the complexities of human existence

End