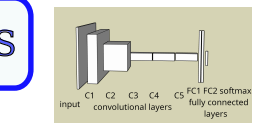




HISTORICAL MILESTONES

- ★ 1950 Turing test
- ★ 2020 ChatGPT 3
- ★ 2022 DALL-E 2
- ★ 2024 Sora



2012 Alexnet

- CNN - Convolutional Neural Network
- RNN - Recurrent Neural Network
- GAN - Generative Adversarial Network
- Generator, Discriminator, Transformers
- Attention Mechanisms
- Encoder-Decoder Architectures

DEEP LEARNING

TERMINOLOGY

- ▶ Generative AI, ▶ LLM, Prompt
- ▶ Natural Language Processing
- ▶ Speech Recognition
- AGI, Singularity, ASI
- Hallucinations, Context Size
- Agents, AIA, Emerging Abilities
- GPU, Tensors, CUDA
- Jailbreak, Prompt Injection, Pr. Hacking

PREDICTIONS

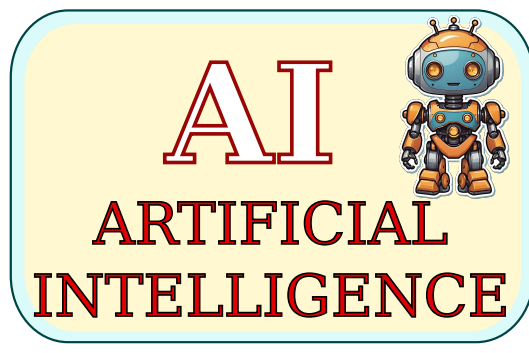
- Singularity in 2024-25
- Employment crisis 2025-26
 - programmers
 - finance
 - teaching
 - medicine

FUNDAMENTALS

- Machine Learning: -without explicit programming-
 - ▶ deep learning (complex neural networks)
 - Supervised and Unsupervised Learning
- Genetic Algorithms
- Search Algorithms
- Continuous Learning
 - retraining and reinforcement learning
- big data
 - Data Mining · Clustering
 - Data Engineer - builds data infrastructure
 - Data Scientist - analyzes patterns and trends
- Cybernetics -control and communication systems-
- ▶ Computer Vision -seeing and understanding it-

ALREADY AVAILABLE FUNCTIONALITIES

- Finance: · Fraud detection
 - risk analysis
 - investment management
- Healthcare: · Diagnostic assistance
 - surgery assistance
- Science: · drug development
 - algorithms AlfaDev
 - new materials GNoME
 - protein structure discovery
- Entertainment: · Recommendations
 - more realistic games · generating music
- Education: · Personalized learning
 - student evaluation
 - virtual tutoring
- Transportation: · Autonomous vehicles
 - traffic management · route planning
 - waste management
- Manufacturing: · Automation
 - quality control
 - product. process optimization
- Agriculture: · Crop monitoring
 - climate prediction
 - resource management
- Others: · Customer service
 - machine translation
 - marketing and publicity



LEARNING

- languages · Deepai
- summaries
- questions & answers
- training
- self-evaluation
- writing improvement

TEACHING

- Preparing materials
- Searching for information
- Summarizing topics
- Question and answer
- Exams and tests
- Evaluation
- Preparing Learning S.
- Fraud detection ??
- AI Plagiarism Checker
- plagiarism detector
- Smodin.io

LEARNING SCENARIOS

- How to generate ... ?
- What precautions to take?
- What values do we need?
- How to program with AI?
- Which IA tools to use for what?

ARTS

- generación de:
- image · SDXD
 - video · Canva
 - sound / voice · Narakeet
 - writing · udio
 - songs · Suno AI

RESEARCH

- AI powered searches
 - Gemini · Perplexity
 - Copilot
- Assess consensus
 - Consensus
- Scientific literature
- Update papers
- Find resources
 - ChatPDF
 - Resoomer
- Identify target areas

AI's PROGRAMMING

- Function libraries
- Programming languages
- Free courses (without lock-in) in universities on YouTube
- ...

ACCESSIBLE + FREE

- Equal opportunity
- Educational independence
- +diversity -clientelism

VALUES

- Artificial intelligence
- Ethics: 2 approaches principles values
 - Auditability/Transparency, Justice
 - Privacy Security Well-being
 - Ethical Responsibility
 - Equality Democracy Sustainability
 - Asimov's Laws of Robotics Alignment common good
 - Control/Autonomy, Non-maleficence...
 - Exploration and advancement in science & tech.
- Users
- Critical Thinking Responsibility
 - Honesty Discretion

FREE SOFTWARE

- Open standards
- OpenSource
 - access to training data
- A safeguard against:
 - monopolies
 - vendor lock in
 - the free drug tactic
 - clientelism
 - corruption
 - impunity
- Existing free software:
 - Hadoop Spark
 - pandas Scikit-learn