Artificial general intelligence

Intelligent agent

Recursive self-improvement

Planning

Computer vision

General game playing

Knowledge representation

Natural language processing

Robotics

AI safety

Machine learning

Symbolic

Deep learning

Bayesian networks

Evolutionary algorithms

Hybrid intelligent systems

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Generative AI Art Audio Music

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The following is a list of current and past, non-classified notable artificial intelligence projects.

Specialized projects

Brain-inspired

Blue Brain Project , an attempt to create a synthetic brain by reverse-engineering the mammalian brain down to the molecular level.

Google Brain , a deep learning project part of Google X attempting to have intelligence similar or equal to human-level.

Human Brain Project , ten-year scientific research project, based on exascale supercomputers.

Cognitive architectures

4CAPS , developed at Carnegie Mellon University under Marcel A. Just

ACT-R , developed at Carnegie Mellon University under John R. Anderson .

AIXI , Universal Artificial Intelligence developed by Marcus Hutter at IDSIA and ANU .

CALO , a DARPA-funded, 25-institution effort to integrate many artificial intelligence approaches (natural language processing, speech recognition , machine vision , probabilistic logic , planning , reasoning , many forms of machine learning) into an AI assistant that learns to help manage your office environment.

CHREST , developed under Fernand Gobet at Brunel University and Peter C. Lane at the University of Hertfordshire .

CLARION , developed under Ron Sun at Rensselaer Polytechnic Institute and University of Missouri.

CoJACK , an ACT-R inspired extension to the JACK multi-agent system that adds a cognitive architecture to the agents for eliciting more realistic (human-like) behaviors in virtual environments.

Copycat , by Douglas Hofstadter and Melanie Mitchell at the Indiana University .

DUAL , developed at the New Bulgarian University under Boicho Kokinov .

FORR developed by Susan L. Epstein at The City University of New York .

IDA and LIDA , implementing Global Workspace Theory , developed under Stan Franklin at the University of Memphis .

OpenCog Prime, developed using the OpenCog Framework.

Procedural Reasoning System (PRS), developed by Michael Georgeff and Amy L. Lansky at SRI International .

Psi-Theory developed under Dietrich Dörner at the Otto-Friedrich University in Bamberg , Germany .

Soar , developed under Allen Newell and John Laird at Carnegie Mellon University and the University of Michigan .

Society of Mind and its successor The Emotion Machine proposed by Marvin Minsky .

Subsumption architectures , developed e.g. by Rodney Brooks (though it could be argued whether they are cognitive).

Games

AlphaGo , software developed by Google that plays the Chinese board game Go.

Chinook , a computer program that plays English draughts ; the first to win the world champion title in the competition against humans.

Deep Blue , a chess-playing computer developed by IBM which beat Garry Kasparov in 1997.

Halite , an artificial intelligence programming competition created by Two Sigma in 2016.

Libratus , a poker AI that beat world-class poker players in 2017, intended to be generalisable to other applications.

The Matchbox Educable Noughts and Crosses Engine (sometimes called the Machine Educable Noughts and Crosses Engine or MENACE) was a mechanical computer made from 304 matchboxes designed and built by artificial intelligence researcher Donald Michie in 1961.

Quick, Draw! , an online game developed by Google that challenges players to draw a picture of an object or idea and then uses a neural network to guess what the drawing is.

The Samuel Checkers-playing Program (1959) was among the world's first successful self-learning programs, and as such a very early demonstration of the fundamental concept of artificial intelligence (AI).

Stockfish AI , an open source chess engine currently ranked the highest in many computer chess rankings .

TD-Gammon , a program that learned to play world-class backgammon partly by playing against itself (temporal difference learning with neural networks).

Internet activism

Serenata de Amor , project for the analysis of public expenditures and detect discrepancies.

Knowledge and reasoning

Alice (Microsoft) , a project from Microsoft Research Lab aimed at improving decision-making in Economics

Braina , an intelligent personal assistant application with a voice interface for Windows OS .

Cyc , an attempt to assemble an ontology and database of everyday knowledge, enabling human-like reasoning .

Eurisko , a language by Douglas Lenat for solving problems which consists of heuristics , including some for how to use and change its heuristics.

Google Now , an intelligent personal assistant with a voice interface in Google 's Android and Apple Inc. 's iOS , as well as Google Chrome web browser on personal computers.

Holmes a new AI created by Wipro .

Microsoft Cortana , an intelligent personal assistant with a voice interface in Microsoft 's various Windows 10 editions .

Mycin , an early medical expert system.

Open Mind Common Sense , a project based at the MIT Media Lab to build a large common sense knowledge base from online contributions.

Siri , an intelligent personal assistant and knowledge navigator with a voice-interface in Apple Inc. 's iOS and macOS .

SNePS , simultaneously a logic -based, frame -based, and network -based knowledge representation, reasoning, and acting system.

Viv (software) , a new AI by the creators of Siri .

Wolfram Alpha , an online service that answers queries by computing the answer from structured data.

MindsDB , is an AI automation platform for building AI/ ML powered features and applications.

Motion and manipulation

AIBO , the robot pet for the home, grew out of Sony's Computer Science Laboratory (CSL).

Cog , a robot developed by MIT to study theories of cognitive science and artificial intelligence, now discontinued.

Music

Melomics , a bioinspired technology for music composition and synthesization of music, where computers develop their own style, rather than mimic musicians.

Natural language processing

AIML , an XML dialect for creating natural language software agents.

Apache Lucene , a high-performance, full-featured text search engine library written entirely in Java.

Apache OpenNLP , a machine learning based toolkit for the processing of natural language text. It supports the most common NLP tasks, such as tokenization, sentence segmentation, part-of-speech tagging, named entity extraction, chunking and parsing.

Artificial Linguistic Internet Computer Entity (A.L.I.C.E.), a natural language processing chatterbot .

ChatGPT , a chatbot built on top of OpenAI's GPT-3.5 and GPT-4 family of large language models .

Claude , a family of large language models developed by Anthropic and launched in 2023. Claude LLMs achieved high coding scores in several recognized LLM benchmarks. [1] [2]

Cleverbot , successor to Jabberwacky, now with 170m lines of conversation, Deep Context, fuzziness and parallel processing. Cleverbot learns from around 2 million user interactions per month.

ELIZA , a famous 1966 computer program by Joseph Weizenbaum , which parodied person-centered therapy .

FreeHAL , a self-learning conversation simulator (chatterbot) which uses semantic nets to organize its knowledge to imitate a very close human behavior within conversations.

Gemini , a family of multimodal large language model developed by Google's DeepMind . Drives the Gemini chatbot , formerly known as Bard.

GigaChat , a chatbot by Russian Sberbank .

GPT-3 , a 2020 language model developed by OpenAI that can produce text difficult to distinguish from that written by a human.

Jabberwacky , a chatbot by Rollo Carpenter , aiming to simulate natural human chat.

LaMDA , a family of conversational neural language models developed by Google .

LLaMA , a 2023 language model family developed by Meta that includes 7, 13, 33 and 65 billion parameter models. [3]

Mycroft , a free and open-source intelligent personal assistant that uses a natural language user interface.

PARRY , another early chatterbot, written in 1972 by Kenneth Colby, attempting to simulate a paranoid schizophrenic.

SHRDLU , an early natural language processing computer program developed by Terry Winograd at MIT from 1968 to 1970.

SYSTRAN , a machine translation technology by the company of the same name, used by Yahoo! , AltaVista and Google , among others.

DBRX , 136 billion parameter open sourced large language model developed by Mosaic ML and Databricks .

Speech recognition

CMU Sphinx , a group of speech recognition systems developed at Carnegie Mellon University.

DeepSpeech , an open-source Speech-To-Text engine based on Baidu's deep speech research paper.

Whisper , an open-source speech recognition system developed at OpenAI.

Speech synthesis

15.ai , a real-time artificial intelligence text-to-speech tool developed by an anonymous researcher from MIT .

Amazon Polly , a speech synthesis software by Amazon.

Festival Speech Synthesis System , a general multi-lingual speech synthesis system developed at the Centre for Speech Technology Research (CSTR) at the University of Edinburgh.

WaveNet , a deep neural network for generating raw audio.

Video

HeyGen is a video creation platform that generates digital avatars that recite and translate text inputs into varying languages.

Synthesia is a video creation and editing platform, with AI-generated avatars that resemble real human beings.

Other

1 the Road , the first novel marketed by an AI.

AlphaFold is a deep learning based system developed by DeepMind for prediction of protein structure .

Otter.ai is a speech-to-text synthesis and summary platform, which allows users to record online meetings as text. It additionally creates live captions during meetings.

Synthetic Environment for Analysis and Simulations (SEAS), a model of the real world used by Homeland security and the United States Department of Defense that uses simulation and AI to predict and evaluate future events and courses of action.

Multipurpose projects

Software libraries

Apache Mahout , a library of scalable machine learning algorithms.

Deeplearning4j , an open-source, distributed deep learning framework written for the JVM.

Keras , a high level open-source software library for machine learning (works on top of other libraries).

Microsoft Cognitive Toolkit (previously known as CNTK), an open source toolkit for building artificial neural networks .

OpenNN , a comprehensive C++ library implementing neural networks.

PyTorch , an open-source Tensor and Dynamic neural network in Python.

TensorFlow , an open-source software library for machine learning.

Theano , a Python library and optimizing compiler for manipulating and evaluating mathematical expressions, especially matrix-valued ones.

GUI frameworks

Neural Designer , a commercial deep learning tool for predictive analytics .

Neuroph , a Java neural network framework.

OpenCog , a GPL-licensed framework for artificial intelligence written in C++, Python and Scheme.

PolyAnalyst : A commercial tool for data mining, text mining , and knowledge management .

RapidMiner , an environment for machine learning and data mining , now developed commercially.

Weka , a free implementation of many machine learning algorithms in Java.

Cloud services

Data Applied , a web based data mining environment.

Watson , a pilot service by IBM to uncover and share data-driven insights, and to spur cognitive applications.

See also

Comparison of cognitive architectures

Comparison of deep-learning software

List of artificial intelligence journals

Lists of open-source artificial intelligence software

References

External links

AI projects on GitHub

AI projects on SourceForge

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History timeline

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Projects

Parameter Hyperparameter

Hyperparameter

Loss functions

Regression Bias–variance tradeoff Double descent Overfitting

Bias–variance tradeoff

Double descent

Overfitting

Clustering

Gradient descent SGD Quasi-Newton method Conjugate gradient method

SGD

Quasi-Newton method

Conjugate gradient method

Backpropagation

Attention

Convolution

Normalization Batchnorm

Batchnorm

Activation Softmax Sigmoid Rectifier

Softmax

Sigmoid

Rectifier

Gating

Weight initialization

Regularization

Datasets Augmentation

Augmentation

Prompt engineering

Reinforcement learning Q-learning SARSA Imitation Policy gradient

Q-learning

SARSA

Imitation

Policy gradient

Diffusion

Latent diffusion model

Autoregression

Adversary

RAG

Uncanny valley

RLHF

Self-supervised learning

Reflection

Recursive self-improvement

Hallucination

Word embedding

Vibe coding

Machine learning In-context learning

In-context learning

Artificial neural network Deep learning

Deep learning

Language model Large language model NMT

Large language model

NMT

Reasoning language model

Model Context Protocol

Intelligent agent

Artificial human companion

Humanity's Last Exam

Artificial general intelligence (AGI)

AlexNet

WaveNet

Human image synthesis

HWR

OCR

Computer vision

Speech synthesis 15.ai ElevenLabs

15.ai

ElevenLabs

Speech recognition Whisper

Whisper

Facial recognition

AlphaFold

Text-to-image models Aurora DALL-E Firefly Flux Ideogram Imagen Midjourney Recraft Stable Diffusion

Aurora

DALL-E

Firefly

Flux

Ideogram

Imagen

Midjourney

Recraft

Stable Diffusion

Text-to-video models Dream Machine Runway Gen Hailuo AI Kling Sora Veo

Dream Machine

Runway Gen

Hailuo AI

Kling

Sora

Veo

Music generation Riffusion Suno AI Udio

Riffusion

Suno AI

Udio

Word2vec

Seq2seq

GloVe

BERT

T5

Llama

Chinchilla AI

PaLM

GPT 1 2 3 J ChatGPT 4 4o o1 o3 4.5 4.1 o4-mini 5

1

2

3

J

ChatGPT

4

4o

o1

o3

4.5

4.1

o4-mini

5

Claude

Gemini Gemini (language model) Gemma

Gemini (language model)

Gemma

Grok

LaMDA

BLOOM

DBRX

Project Debater

IBM Watson

IBM Watsonx

Granite

PanGu-Σ

DeepSeek

Qwen

AlphaGo

AlphaZero

OpenAI Five

Self-driving car

MuZero

Action selection AutoGPT

AutoGPT

Robot control

Alan Turing

Warren Sturgis McCulloch

Walter Pitts

John von Neumann

Claude Shannon

Shun'ichi Amari

Kunihiko Fukushima

Takeo Kanade

Marvin Minsky

John McCarthy

Nathaniel Rochester

Allen Newell

Cliff Shaw

Herbert A. Simon

Oliver Selfridge

Frank Rosenblatt

Bernard Widrow

Joseph Weizenbaum

Seymour Papert

Seppo Linnainmaa

Paul Werbos

Geoffrey Hinton

John Hopfield

Jürgen Schmidhuber

Yann LeCun

Yoshua Bengio

Lotfi A. Zadeh

Stephen Grossberg

Alex Graves

James Goodnight

Andrew Ng

Fei-Fei Li

Alex Krizhevsky

Ilya Sutskever

Oriol Vinyals

Quoc V. Le

Ian Goodfellow

Demis Hassabis

David Silver

Andrej Karpathy

Ashish Vaswani

Noam Shazeer

Aidan Gomez

John Schulman

Mustafa Suleyman

Jan Leike

Daniel Kokotajlo

François Chollet

Neural Turing machine

Differentiable neural computer

Transformer Vision transformer (ViT)

Vision transformer (ViT)

Recurrent neural network (RNN)

Long short-term memory (LSTM)

Gated recurrent unit (GRU)

Echo state network

Multilayer perceptron (MLP)

Convolutional neural network (CNN)

Residual neural network (RNN)

Highway network

Mamba

Autoencoder

Variational autoencoder (VAE)

Generative adversarial network (GAN)

Graph neural network (GNN)

Category