History of Artificial Intelligence

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The History of AI

Years	Description	
1950–1956	The Birth of AI	AI的诞生
1956–1974	The Golden Years	黄金之年
1974–1980	The First AI Winter	第一个AI之冬
1980–1987	The Boom of AI	AI的繁荣期
1987–1993	The Second AI Winter	第二个AI之冬
1993–Present	The Breakthrough	突破

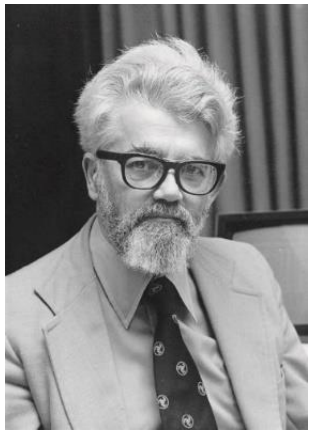
1950–1956, The Birth of AI

- 1950, Alan Turing proposes the Turing Test as a measure of machine intelligence.

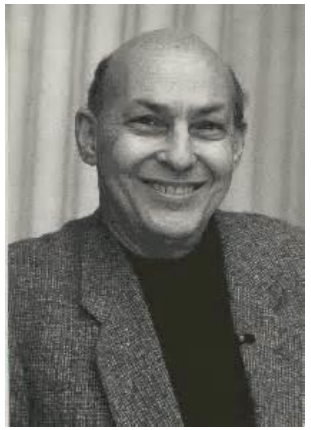
  1950年，艾伦·图灵提出了图灵测试，将其作为机器智能的度量。

- 1956, the field of Artificial Intelligence research was founded at a conference on Dartmouth College.

  1956年，在美国达特茅斯学院的会议上，人工智能研究领域正式诞生。



John McCarthy
约翰·麦卡锡



Marvin Minsky
马文·明斯基

Allen Newell
艾伦·纽厄尔

Herbert Simon
赫伯特·西蒙

1956–1974, The Golden Years

- 1958, Herbert Simon and Allen Newell had a demonstration the first AI program, Logic Theorist (LT).

  1958年赫伯特·西蒙和艾伦·纽厄尔演示了第一个AI程序，名称为逻辑理论家(LT)。

- 1958, John McCarthy (MIT) invented Lisp programming language.

  1958年约翰·麦卡锡发明了著名的Lisp编程语言。

- 1960s, M. Masterman and colleagues at University of Cambridge design semantic nets for machine translation.

  1960年代，M·马斯特曼与剑桥大学的同事们设计了语义网络，用于机器翻译。

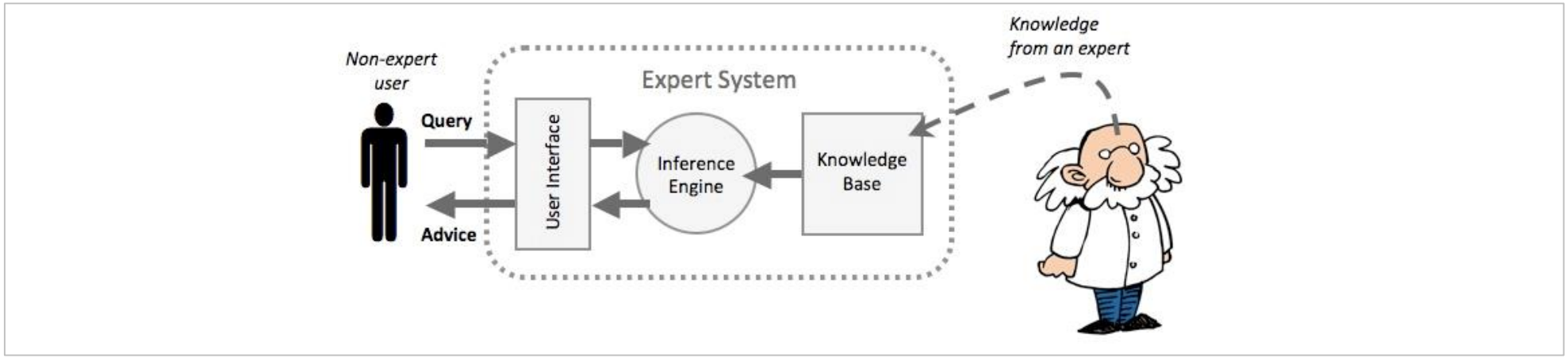
- 1963, Leonard Uhr and Charles Vossler published “A Pattern Recognition Program That Generates, Evaluates, and Adjusts Its Own Operators”, which described one of the first machine learning programs.

  1963年伦纳德·武赫和查尔斯·瓦斯勒发表了关于模式识别的论文，描述了第一个机器学习程序。

1956–1974, The Golden Years

- 1965, E. Feigenbaum initiated Dendral, a software to deduce the molecular structure of organic compounds. It was the first expert systems.

  1965年，E·费根鲍姆开创了Dendral，一个推断有机化合物分子结构的软件。这是首套专家系统。



- 1974, T. Shortliffe demonstrated MYCIN program, a very practical rule-based approach to medical diagnoses.

  1974年，T·肖特列夫演示了MYCIN程序，一个非常实用的基于规则的医学诊断方法。

1974–1980, The First AI Winter

- 1966, the failure of machine translation.
  1966年，机器翻译失败了。
- 1970, the abandonment of connectionism.
  1970年，连接主义遭到遗弃。
- 1971–1975, DARPA's frustration with the Speech Understanding Research program at Carnegie Mellon University.
  1971年至75年，美国DARPA对卡内基梅隆大学的语音理解研究项目感到沮丧。
- 1973, the large decrease in AI research in the United Kingdom, in response to the Lighthill report "Artificial Intelligence: A General Survey".
  1973年，受莱特希尔的“人工智能：综合调查”报告的影响，英国大幅度缩减AI的研究。
- 1973–1974, DARPA's cutbacks to academic AI research in general.
  1973-74，美国DARPA削减了一般性AI学术研究经费。

1980–1987, AI Boom

- 1980, First National Conference of the American Association for Artificial Intelligence (AAAI) held at Stanford.

  1980年，美国人工智能学会（AAAI）在斯坦福大学召开了第一届全国大会。

- 1982, Japan started Fifth Generation Computer System (FGCS) project for knowledge processing.

  1982年，日本启动了第五代计算机系统（FGCS）项目，用于知识处理。

The Generations of Computer

Generation	Years	Description	
1st	Mid-1940s	Thermionic vacuum tubes	真空管
2nd	1956	Transistors	晶体管
3rd	1964	Integrated circuits	集成电路
4th	1972	Microprocessors	微处理器

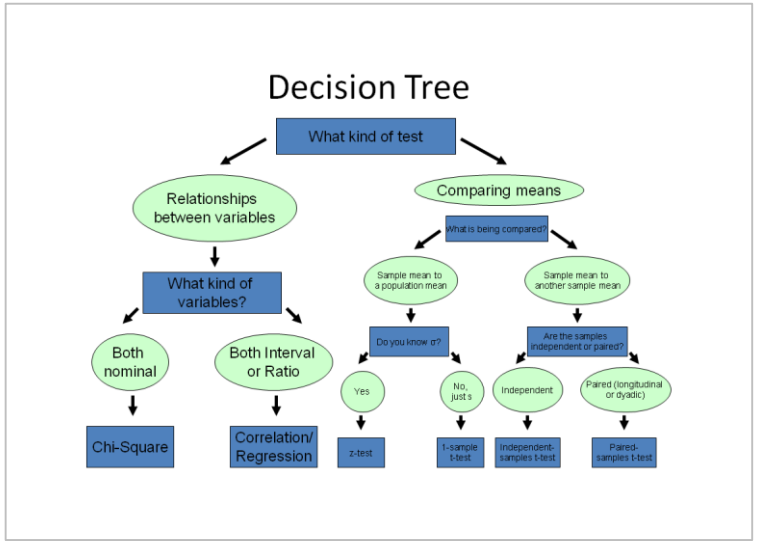
1980–1987, AI Boom

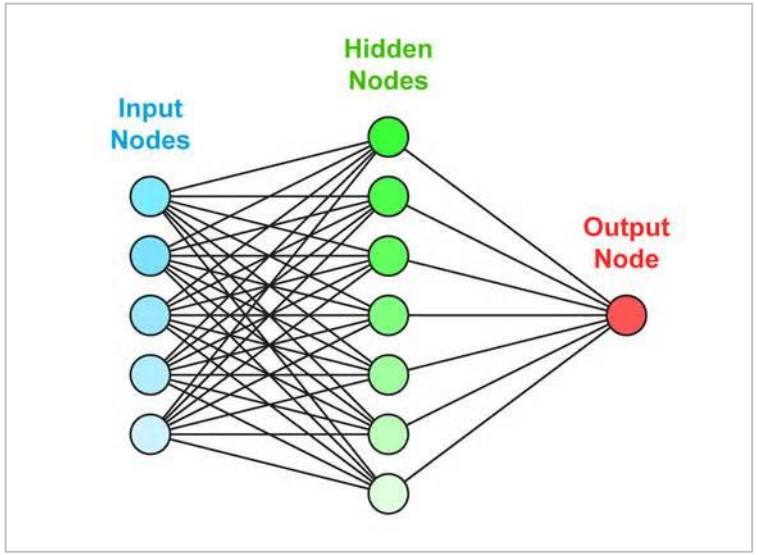
- In mid-1980s, the machine learning came, when the decision tree model was invented and distributed as software. The model can be viewed by a human and is easy to explain.

  1980年代中期，机器学习出现了，当时发明了决策树模型并且以软件形式推出。该模型具有可视化、易说明的特点。

- Also in mid-1980s, multi-layer Artificial Neural Networks (ANN) invented. With enough hidden layers, a ANN can express any function, thus overcoming the limitation of perceptron.

  1980年代中期，还发明了多层人工神经元网络（ANN）。具有足够多的隐藏层，一个ANN可以表达任意的功能，因此突破了感知的局限性。





1987–1993, The Second AI Winter

- 1987, the collapse of the Lisp machine market.

  1987年，Lisp机的市场崩溃。

- 1988, the cancellation of new spending on AI by the United States government's Strategic Computing Initiative.

  1988年，美国政府的战略计算促进会取消了新的AI经费。

- 1993, expert systems slowly reaching the bottom.

  1993年，专家系统缓慢滑向低谷。

- 1990s, the quiet disappearance of the fifth-generation computer project's original goals.

  1990年代，日本第五代计算机项目未能达到其初始目标，悄然退场。

1993–Present, Breakthrough

- In 1997, Deep Blue became the first computer chess-playing system to beat a reigning world chess champion, Garry Kasparov.

  1997年，深蓝战胜了卫冕国际象棋冠军加里·卡斯帕罗夫，成为第一台计算机国际象棋系统。

- In 2005, a Stanford's Stanley, an autonomous robotic vehicle, won the DARPA Grand Challenge.

  2005年，斯坦福的自主机器人车辆Stanley，赢得了DARPA无人驾驶汽车挑战赛。

- In 2006, the term "deep learning" gained traction after a publication by Geoffrey Hinton and Ruslan Salakhutdinov.

  2006年，在杰弗里·辛顿和鲁斯兰· 萨拉赫丁诺夫在科学杂志上发表了有关"深度学习"的论文之后，该术语成了热门。

Deep Blue

1993–Present, Breakthrough

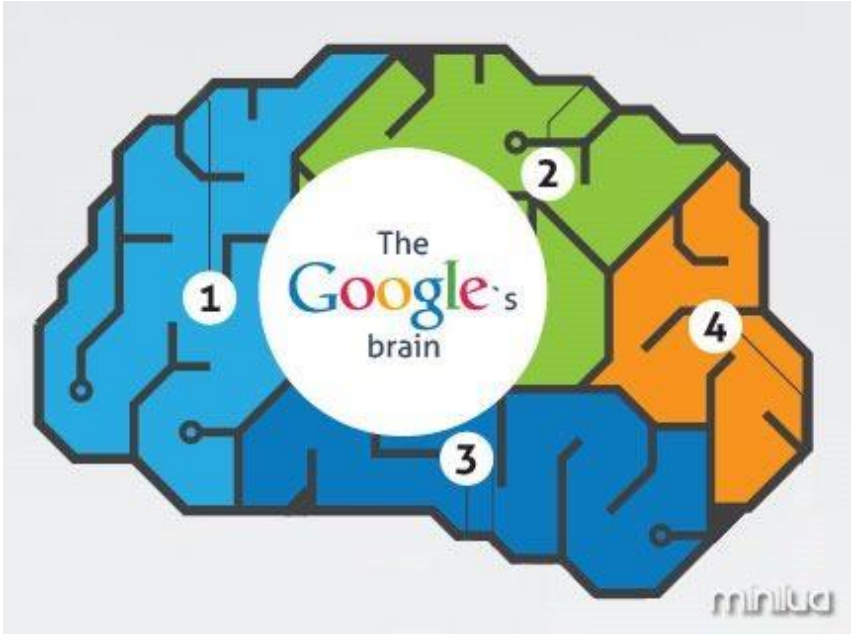
- Watson, the computer was specifically developed by IBM to answer questions on the quiz show Jeopardy!
  沃森，是IBM专门开发的在智力竞赛Jeopardy!回答问题的计算机。
  - In 2011, Watson competed on Jeopardy! against former winners Brad Rutter and Ken Jennings.
    2011年，沃森在Jeopardy!上战胜了上届冠军布拉德·路特和肯恩·詹宁斯。
  - Watson received the first prize of $1 million.
    沃森获得了1百万美元大奖。

Watson on quiz show Jeopardy!

1993–Present, Breakthrough

- In 2011, Google started Deep Learning project, Google Brain, as one of the Google X projects.
  2011，谷歌启动了深度学习项目，谷歌大脑，作为Google X项目之一。

  - Google brain is a cluster of 16,000 computers dedicated to mimicking some aspects of human brain activity.
    谷歌大脑是由1万6千台计算机连成的一个集群，致力于模仿人类大脑活动的某些方面。
  - It had successfully recognized a cat based on 10 million digital images.
    通过1千万张数字图片的学习，已成功地学会识别一只猫。



1993–Present, Breakthrough

- In 2012, Siri was introduced by Apple as an integral part of iOS since iOS 5, running from iPhone 4S.

  2012年，苹果公司引进了Siri，从iPhone 4S上运行的iOS5开始，已作为iOS的一个组成部分。

  - Siri is an intelligent personal assistant and knowledge navigator.

    Siri是一种智能个人助理和知识导航软件。

  - Use a natural language user interface to answer questions, make recommendations, and perform actions.

    使用自然语言用户接口来回答问题、做出建议和执行动作。

  - Available in: English, French, German, Japanese, Chinese, Korean, Italian, Spanish.

    支持英语、法语、德语、日语、中文、韩文、意大利语、西班牙语。

1993–Present, Breakthrough

- In 2012, Rick Rashid, Microsoft's Chief Research Officer, demonstrated a real-time English-to-Chinese universal translator that keeps your voice and accent.

  2012年, 瑞克·拉希德，微软首席研究官，演示了一款实时的英语-中文通用翻译系统，可以保持你的声音和口音。

  - Not only is the translation very accurate, but the software also preserves the user's accent and intonation.

    该软件不仅翻译非常准确，而且能够保持讲者的口音和语调。

1993–Present, Breakthrough

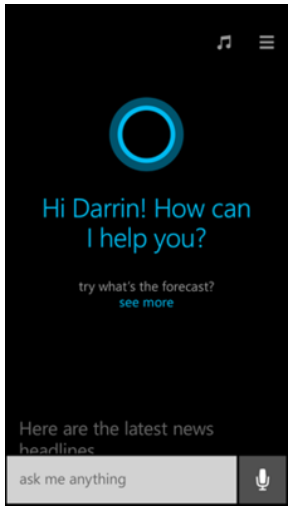
- Apr. 2014, Microsoft demonstrated "Cortana", an intelligent personal assistant on Windows Phone.

  2014年4月，微软演示了“Cortana”，一款运行在Windows Phone上的智能个人助理。

- Jun. 2014, Microsoft China released chatbot "Xiaoice (小冰)" which allowed WeChat users to have conversations with it.

  2014年6月，微软中国推出了聊天机器人小冰，可让微信用户与她交谈。

- 2015年9月8日，百度在2015百度世界大会上推出了一款机器人助理—度秘，可以为用户提供秘书化搜索服务。



Cortana

小冰

度秘

1993–Present, Breakthrough

- Jun. 2014, chatbot Eugene Goostman, at a contest marking the 60th anniversary of Turing's death, 33% of the event's judges thought that Goostman was human, so that the event's organizer considered it to have passed Turing's test.

  2014年6月，聊天机器人尤金·古斯特曼，在纪念图灵逝世60周年的一个比赛上，被该活动33%的评委认为古斯特曼是人类，因此组织者认为它已经通过了图灵测试。

  - Eugene Goostman is developed in Saint Petersburg in 2001 by a group of three programmers.

    尤金·古斯特曼是由三个程序员小组于2001年在圣·彼得堡开发的。

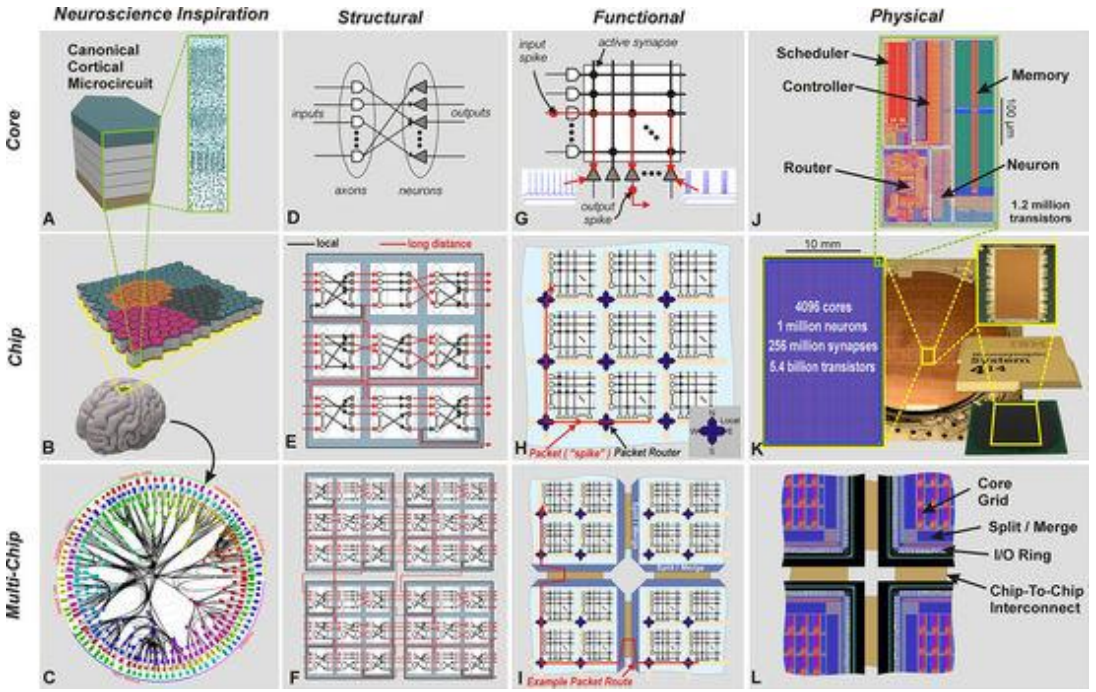
1993–Present, Breakthrough

- Aug. 2014, IBM announced "TrueNorth" chip to work like human brain.

  2014年8月，IBM发表了类人脑工作的TrueNorth芯片。

  - TrueNorth is a neuromorphic CMOS chip, consists of 4096 hardware cores, each one simulating 256 programmable silicon "neurons" for a total of just over a million neurons.

    TrueNorth是一款神经形态的CMOS芯片，由4096个硬件核组成，每个仿真256个可编程的硅神经元，总计刚好超过百万个神经元。

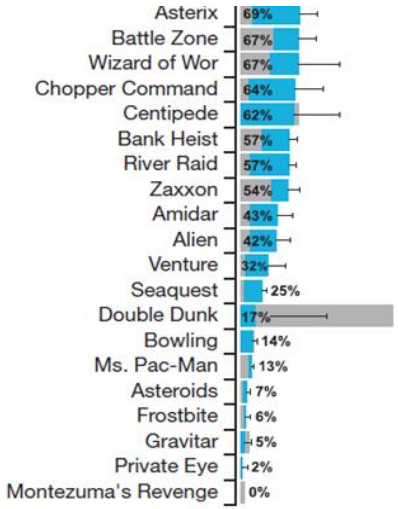


1993–Present, Breakthrough

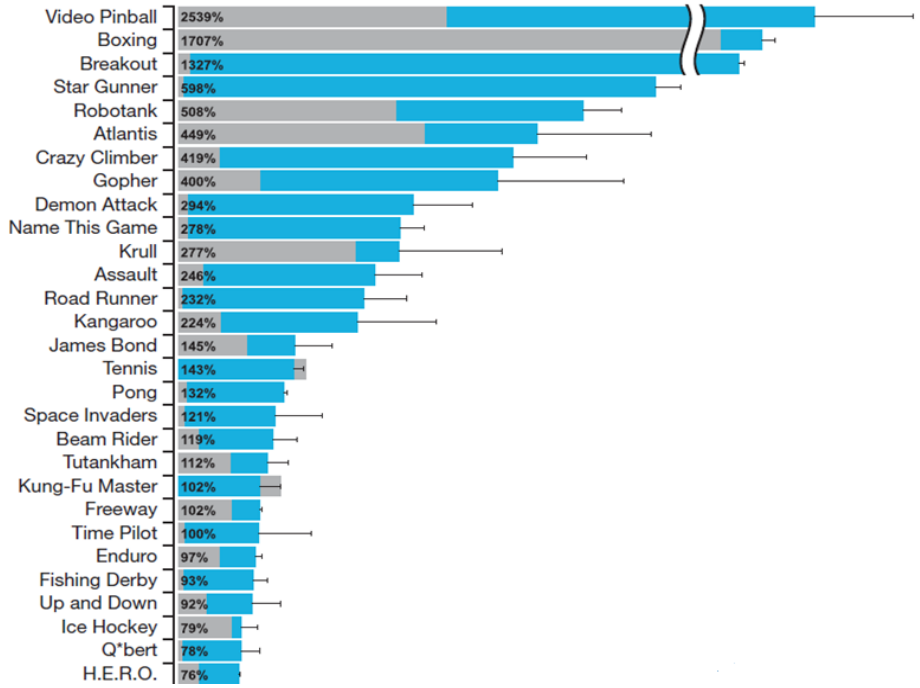
- Feb. 2015, Google DeepMind published Deep Q-Network, the human-level control through deep reinforcement learning.

  2015年2月，谷歌DeepMind公司在Nature杂志上发表了Deep Q-Network，通过深度强化学习达到人类水平的操控。

Below human-level (20/49 ≈ 40.82%)



At human-level or above (29/49 ≈ 59.18%)



Tested on classic Atari video games (late-1970s and early-1980s)

在经典（1970年代后期至1980年代初）的Atari视频游戏机上进行的测试

1993–Present, Breakthrough

- Dec. 2015, Google DeepMind's program AlphaGo beat Fan Hui, the European Go champion, five times out of five in tournament conditions.

  2015年12月，谷歌DeepMind公司的程序AlphaGo打败了欧洲围棋冠军樊麾，成绩5战5胜。

- Jan. 27 2016, the announcement of the news was delayed until this day, to coincide with the publication of a paper in the journal Nature describing the algorithms used.

  这个消息直到2016年1月27日才宣布，目的是与描述所用算法的论文在《自然》杂志发表的时间同步。

- Deep-learning software defeats human professional for first time.

  深度学习软件第一次击败了人类职业棋手。

1993–Present, Breakthrough

- Mar. 9-15 2016, AlphaGo played South Korean professional Go player Lee Sedol, ranked 9-dan, in Seoul, South Korea. AlphaGo won all but the fourth game.

  2016年3月8日至15日，AlphaGo在韩国首尔对垒韩国九段职业棋手李世乭。AlphaGo以5战4胜赢得了比赛。

Source: http://www.goratings.org/history/

Go Ratings

Rating of Go players, using the WHR algorithm, and data kindly provided by go4go.net. Updated daily.

16th May 2016
New version of Crazy Stone for your PC employing Deep Learning technology !

Statistics

Games	55905
Players	1747
Most Recent Game	2016-07-25

Rating List

For older ratings, check the History page. There is also a History of top ladies.

Rank	Name	♂♀	Flag	Elo
1	Google DeepMind AlphaGo			3608
2	Ke Jie	♂		3608
3	Park Junghwan	♂		3593
4	Lee Sedol	♂		3550
5	Iyama Yuta	♂		3536
6	Mi Yuting	♂		3528
7	Shi Yue	♂		3509
8	Kim Jiseok	♂		3504
9	Lian Xiao	♂		3504
10	Tuo Jiaxi	♂		3501
11	Chen Yaoye	♂		3496
12	Zhou Ruiyang	♂		3493
13	Park Yeonghun	♂		3492
14	Li Qincheng	♂		3487
15	Huang Yunsong	♂		3475
16	Gu Li	♂		3470
17	Shin Jinseo	♂		3469
18	Tan Xiao	♂		3465
19	Lee Donghoon	♂		3460
20	Gu Zihao	♂		3456

1993–Present, Breakthrough

- 2016年4月9日，《我是歌手》第四季总决赛落下帷幕，李玟夺得总冠军。据报道，在决赛结果宣布之前阿里云小Ai就预测到了李玟夺冠。
- 小Ai是阿里云研发的人工智能程序，主要基于神经网络、社会计算、情绪感知等原理工作，善于洞察本质和实时预测，并能理解人类情感，可以通过强大的计算和机器学习能力不断自我进化。

1993–Present, Breakthrough

- Jan. 19 2016, the Information Technology and Innovation Foundation (ITIF) in Washington DC announced its annual Luddite Award.

  2016年1月19日，位于华盛顿特区的信息技术与创新基金会（ITIF），公布了年度卢德奖。

- ITIF gave the Luddite Award to "a loose coalition of scientists and luminaries who stirred fear and hysteria in 2015 by raising alarms that artificial intelligence (AI) could spell doom for humanity".

  ITIF将该卢德奖颁发给"一个科学家和名人组成的松散联盟，他们在2015年警告人工智能（AI）将会导致人类的末日，激起恐惧和歇斯底里"。

- The winners — if that is the correct word — included Elon Musk, and Stephen Hawking.

  获奖者——如果这个词没用错的话——包括埃隆·马斯克、和史蒂芬·霍金。

Source: https://itif.org/publications/2016/01/19/

Thank you for your attention!