

ARTIFICIAL INTELLIGENCE TECHNOLOGIES

Current Development & Industrial Applications

人工智能发展现状及其产业应用

Artificial Intelligence – 4 Rises in the History

Artificial Intelligence: An artificial program or system that can perceive, recognise, make decisions, and execute tasks just like human beings.

人工智能：能够和人一样进行感知、认知、决策、执行的人工程序或系统

1956 Dartmouth Conference:
The Founding Fathers of AI



The concept of Artificial Intelligence (AI) was formed during the Dartmouth Conference in 1956, USA.
1956年美国达特茅斯会议 “人工智能” 概念诞生

The 1st Rise 1970 第一次黄金期

Logic Theorist
第一款人工智能软件

Perceptron
第一款神经网络软件

First Cooling Period
1980
第一次AI冬天

The 2nd Rise 1990 第二次黄金期

第五代计算机兴起
Hopfield网络&BP算法

第五代计算机失败,
DARPA削减投入

Second Cooling Period
2000
第二次AI冬天

The 3rd Rise 2006 第三次浪潮

DNN
在语音识别上的成功

CNN
在图像识别上的成功

Deep Learning(Hinton 2006)



2016 AlphaGo
Surpass human players in the game of Go.
下围棋胜过人类



2019 SQuAD 2.0
Surpass human players in reading comprehension ability
阅读理解超过人类

Transformer
在自然语言处理获得成功

Attention
在机器翻译上获得成功

AI for Science
形成热潮

GPT, Bert
开启NLP的预训练新范式

The 4th Rise 2022 第四次浪潮

2022 ChatGPT
智慧涌现



Artificial Intelligence – 3 Development Stages



Computational Intelligence

运算智能

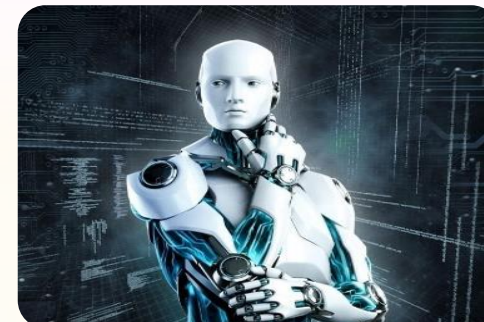
Ability to compute and store the data



Preceptive Intelligence

感知智能

Ability to listen, speak, look, and recognise



Cognitive Intelligence

认知智能

Ability to understand, think, and with its own intelligence.

Artificial Intelligence – Cognitive Intelligence

Large Language Models present completely new opportunities for addressing fundamental human needs

The Seven Key Dimensions of AI

Text
Generation

Language
Understanding

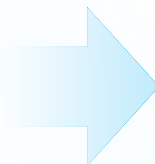
Knowledge
Q&A

Logical
Reasoning

Mathematical
Ability

Coding Ability

Multi-Model Ability



Transforming Information Distribution & Access



Enabling Expert-Level Virtual Assistants



Revolutionizing Content Creation



Disrupting Traditional Hand-Coding Methods



Accomplishing Tasks Through Natural Interaction



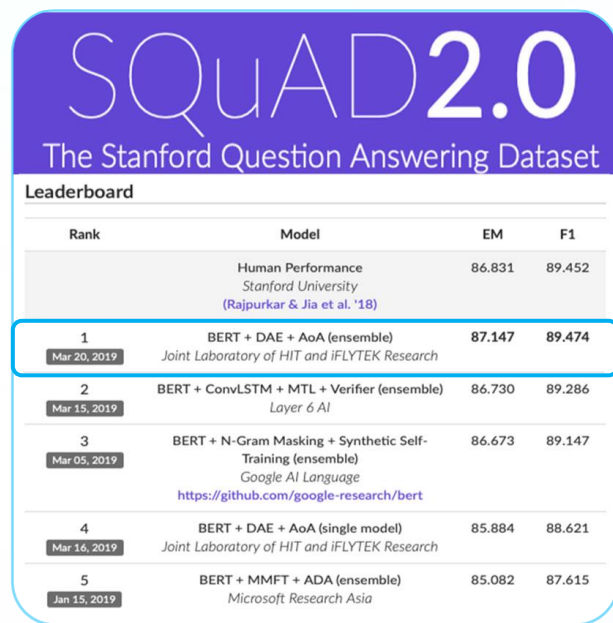
Serving as an Accelerator for Scientific Research



Its emergence is considered a milestone "no less significant than the birth of the PC and the Internet"

Artificial Intelligence – Cognitive Intelligence

In 2019, natural language understanding technology won first place in the internationally authoritative SQuAD competition.



SQuAD2.0
The Stanford Question Answering Dataset

Leaderboard

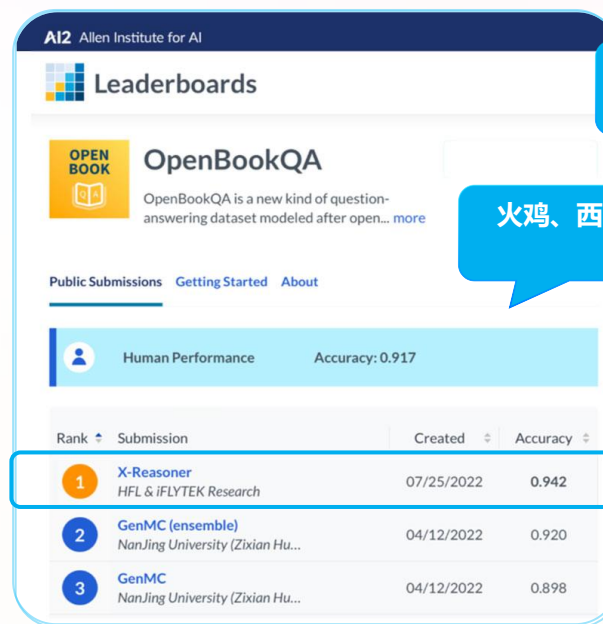
Rank	Model	EM	F1
	Human Performance Stanford University (Rajpurkar & Jia et al. '18)	86.831	89.452
1	BERT + DAE + AoA (ensemble) Joint Laboratory of HIT and iFLYTEK Research	87.147	89.474
2	BERT + ConvLSTM + MTL + Verifier (ensemble) Layer 6 AI	86.730	89.286
3	BERT + N-Gram Masking + Synthetic Self-Training (ensemble) Google AI Language https://github.com/google-research/bert	86.673	89.147
4	BERT + DAE + AoA (single model) Joint Laboratory of HIT and iFLYTEK Research	85.884	88.621
5	BERT + MMFT + ADA (ensemble) Microsoft Research Asia	85.082	87.615

Event Organiser: Stanford University

Milestone
Knowledge Reasoning

Milestone
Natural Language Understanding

In 2022, knowledge reasoning technology won first place in scientific knowledge reasoning at the OpenBookQA competition.



AI2 Allen Institute for AI

Leaderboards

OpenBookQA
OpenBookQA is a new kind of question-answering dataset modeled after open... more

Public Submissions Getting Started About

Human Performance Accuracy: 0.917

Rank	Submission	Created	Accuracy
1	X-Reasoner HFL & iFLYTEK Research	07/25/2022	0.942
2	GenMC (ensemble) NanJing University (Zixian Hu...)	04/12/2022	0.920
3	GenMC NanJing University (Zixian Hu...)	04/12/2022	0.898

Event Organiser: Allen Institute for Artificial Intelligence

地球自转会引起什么？

火鸡、西红柿、奶牛、鸡，哪个来源于植物？

土壤的主要成分什么？

牛仔裤、钢勺、棉花糖、帽子
哪一个传热最快？

Artificial Intelligence in Academic Research

Cooperation with the Chinese Academy of Sciences

For A Large Language Model For Scientific Literature To Enable An Efficient Academic Research

与中科院合作开发科学文献大语言模型，提高学术研究效率

iFLYTEK



中国科学院文献情报中心
NATIONAL SCIENCE LIBRARY, CHINESE ACADEMY OF SCIENCES

- Base capability: SPARK large model
- Key technologies: pre-training, supervised fine-tuning, reinforcement learning

- CAS internal data sources: institute journals, dissertations, preprints
- Collaborative data resources: renowned domestic and international databases

Currently serves **1,363** universities and nearly **40,000** researchers

现已为1,363所院校、超过40,000名研究者提供服务

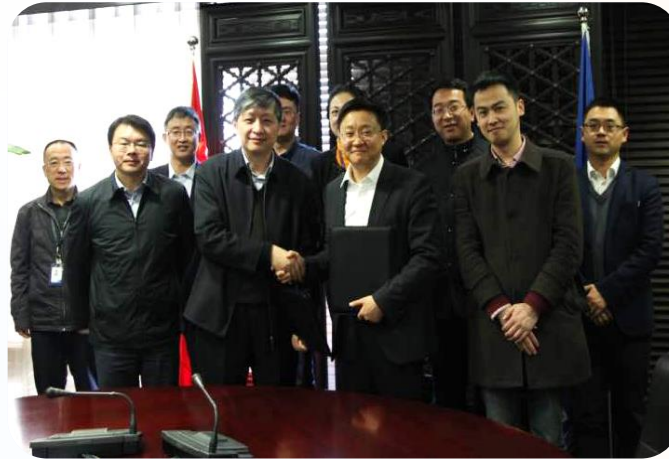
Artificial Intelligence in Education

Cooperation With China's Official Authorities

The Smart Education Platform Promotes The Widespread Application Of Digital Resources In Less Developed Regions



Jointly build the **Innovation Centre for Quality Monitoring of Basic Education** with **China Ministry of Education**



Launched a joint laboratory with **China Ministry of Education's Examination Authority**



Strategic partnership with the **China Central Institute for Educational Technology** to develop innovative education models

Artificial Intelligence in Education

Cooperation With China's Academy of Education Sciences

Addressing the shortage of professional teachers in subjects such as language, information technology, and science across regions, urban and rural areas, and between schools.

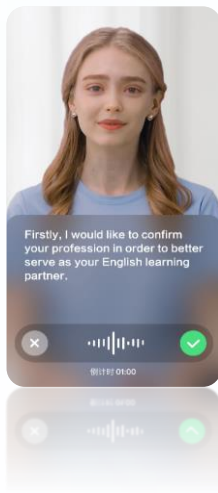
AI Science Teacher

Science Knowledge Q&A



AI English Teacher

One-on-One Oral Communication



AI Art Teacher

Creative Painting Inspiration



AI Mental Companion

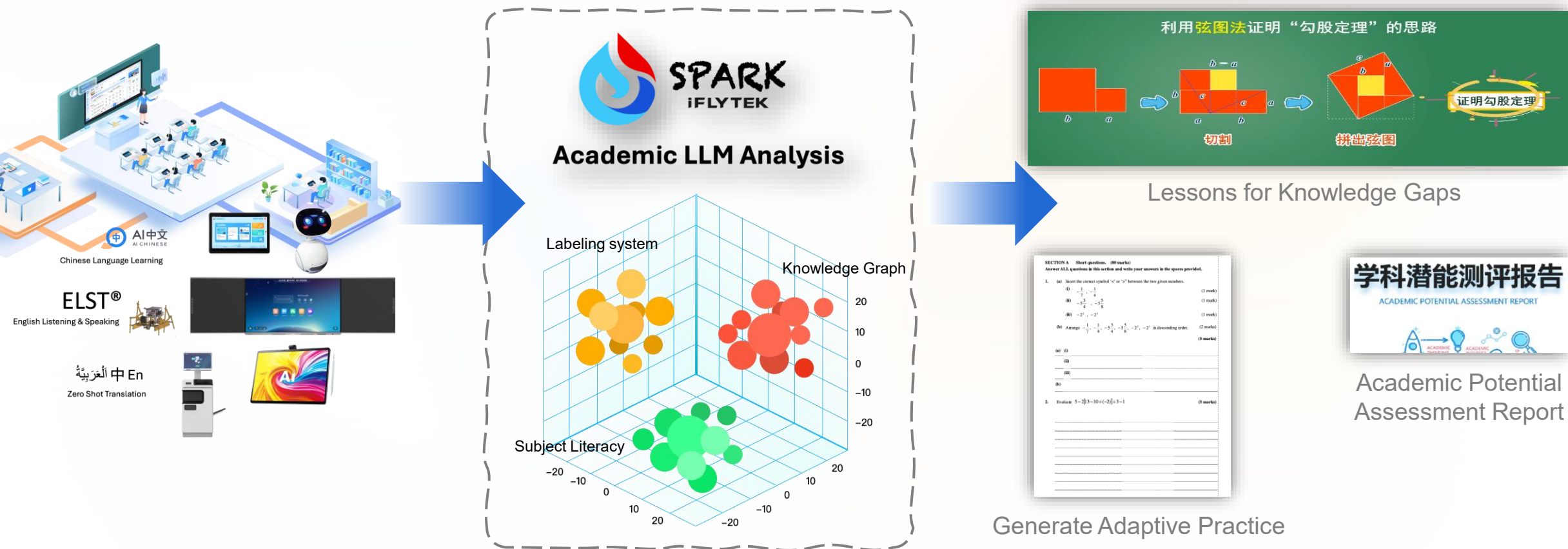
Virtual Psychologist



Artificial Intelligence in Education

Personalised Learning Approach

Building Technology Roadmap for Large-Scale Personalised Education, Systematically Constructing a Student-Centred, Innovative Teaching and Learning System



Artificial Intelligence in Education

iFLYTEK SPARK Smartboard

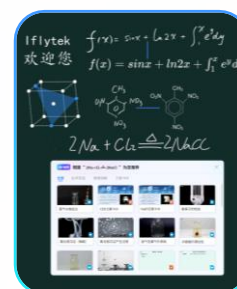
Learn with AI, Grow with you

讯飞星火智慧黑板 – AI作伴，携手成长



Multi-modal Understanding

多模态理解



Natural Interaction

自然交互



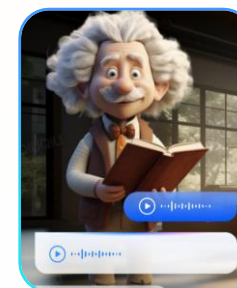
Magic Search

智慧圈选



Digital Avatar

数字人老师



Smart Recording And Sharing

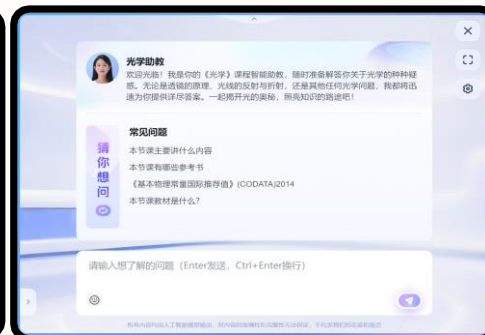
智能录课



Artificial Intelligence in Education

Course Development

Tools for Teachers, Resource Reorganisation, and Digital Course Support



Knowledge Graph

Intelligent Generation

Intelligent Question
Setting

Intelligent Q&A

Guided Learning

Artificial Intelligence in Education

Technologies for Language learning

Widely Recognised by Global Language Learners

Chinese Language Learning Platform

Covering 192 countries with over 180 Million users registered



Global English Teaching

In preparation for the World Expo, Osaka launched a global tender for the introduction of artificial intelligence English teaching in public schools.

iFLYTEK won the bid with its significant technological advantages.



Artificial Intelligence in Consumer Products

AI Assistant for Everyone

Enhancing workforce productivity



Smart Translator

翻译机

- Face-to-Face Translation
- 60 Languages
- 98% Accuracy
- Camera Translation
- Offline Translation
- Free Global Traffic



Smart Recorder Pro

录音笔
(专业版)

- Online Transcription
- Long-Distance Recording
- Noise Reduction
- 8 Languages
- Video Shooting
- Large Touch Screen



Smart Recorder

录音笔

- Offline Transcription
- Long-Distance Recording
- Noise Reduction
- 5 Languages
- Data Security
- Touch Screen



Smart Dictionary Pen

词典笔

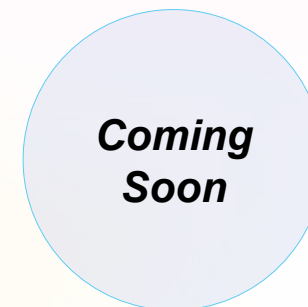
- Scan and Look up Words
- Multilingual Translation
- Unlimited Books
- Phonics
- Offline Use
- Voice Translation



AI Note Air 2

办公本

- AI Empowerment
- Recording&Transcription
- Voice-to-Text
- Paper-like Writing
- Handwriting to Text
- Schedule Management



AI Transbuds

翻译耳机

- Simultaneous Interpretation
- AI Empowerment
- All Scenarios Translation
- Noise Reduction
- Audio Quality Enhancement
- Expert-Level Accuracy

Artificial Intelligence in Healthcare

AI Medical Assistant

A system to analyse patients' clinical presentations and medical information using a knowledge base and AI diagnostic engine



National Medical Licensing Exam

Perfect score: 600 | Passing mark: 360

In 2017, it became the **world's first AI to pass**, scoring **456** (outperforming **96.3%** of human test-takers).

Key Performance

- Deployed across **600+ regions** in 30 provinces of China
- **820 million** assisted diagnoses
- **1.48 million** diagnostic corrections aided
- **73.73 million** irrational prescriptions flagged

Data by Jul 15th 2024

Artificial Intelligence in Finance

Corporate Solutions for Financial Sector

iFLYTEK has served 200 financial institutions, delivered over 2,000 projects, and indirectly served 500 million users



Artificial Intelligence in Vehicle

Intelligent Voice Interaction Contributes To the Vehicle Industry



1st

China's automotive
voice interaction market

57 Million

Deployed in vehicles

10 Billion

Annual Interactions

Responsibility with AI

社会责任

In partnership with the China Disabled Persons' Federation, iFLYTEK has launched the **Hearing AI Voice initiative**. This program offers lifelong free speech-to-text services through **DeepTing App**. To date, more than **100 million minutes** of barrier-free communication have been made available to the hearing-impaired community, promoting digital inclusion.

科大讯飞与中国残疾人联合会合作，启动“听见AI的声音”项目。该项目通过“讯飞听见”提供终身免费的语音转文字服务。迄今为止，为听障群体提供了超过1亿分钟的无障碍交流，促进了社会包容性。



Responsibility with AI

社会责任

20

Provinces | 省份

1,000+

Schools | 学校

In 2017, we launched the **AI Welfare Program**, reaching over 1,000 schools in 20 provinces, including Xinjiang Uyghur Autonomous Region, Xizang Autonomous Region, Guangxi Zhuang Autonomous Region, etc.

2017年，我们启动了人工智能教育公益项目，覆盖新疆维吾尔自治区、西藏自治区、广西壮族自治区等20个省的1000多所学校。

Our goal is to plant three seeds in children's hearts:

我们的目标是在孩子们的心中播下三颗种子：

1. The seed of technology, sharing the vision that technology can bring a better life | 相信科技带来美好生活
2. The seed of striving, understanding that knowledge can change their destiny | 知识可以改变自己的命运
3. The seed of happiness, ensuring they study and grow joyfully | 快乐地学习和成长



AI 点燃每个生命的独特光芒

AI Illuminates the Unique Spark Within Every Human

助力培养站在人工智能翅膀上的新人类

Empowering a New Humanity: Soaring on the Wings of AI