9. Huawei Open AI Platform for Smart Devices

9.1 AI Industry Ecosystem and Huawei HiAI Platform

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Setembro/2020

1. **AI Industry Ecosystem**
2. Huawei HiAI Platform
3. Developing Apps Based on Huawei HiAI Platform

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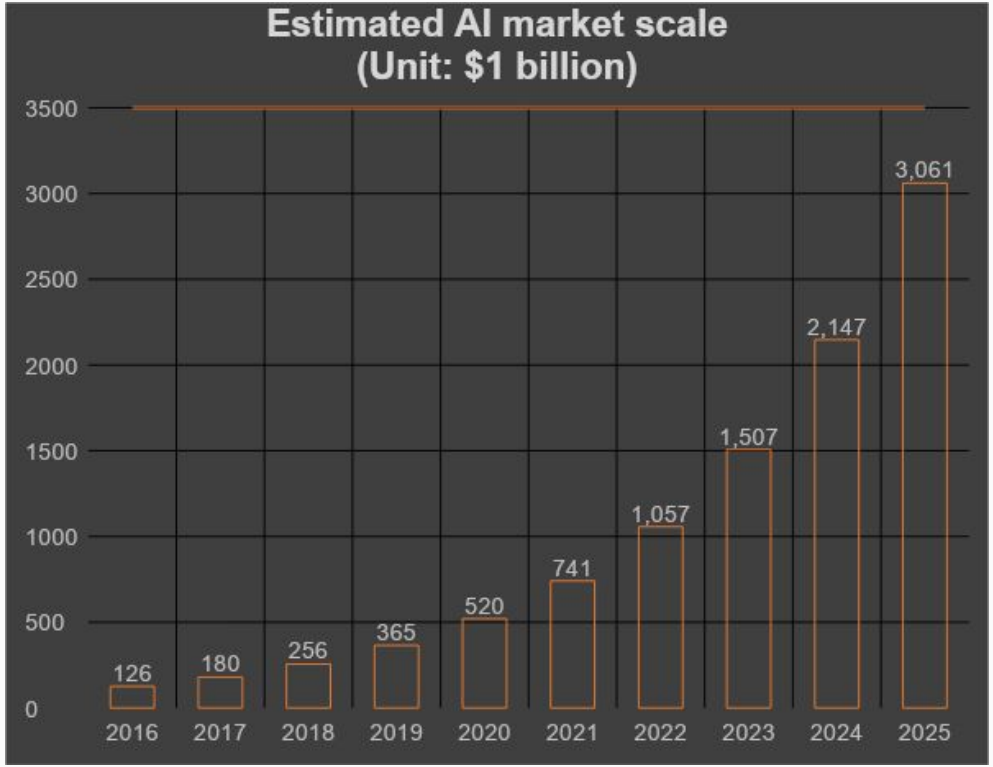
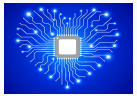
Huge Opportunities: Foreseeable AI Ubiquity in a $3 Trillion Market



Involved industries: automobile, finance, consumer goods and retail, medical care, education, manufacturing, communications, energy, tourism, culture and entertainment, transportation, logistics, real estate, and environmental protection

Computing power breakthrough



Algorithm breakthrough

Data breakthrough

Data source: Forrester, Transparency Market Research, Chinese Association for Artificial Intelligence, and Roland Berger

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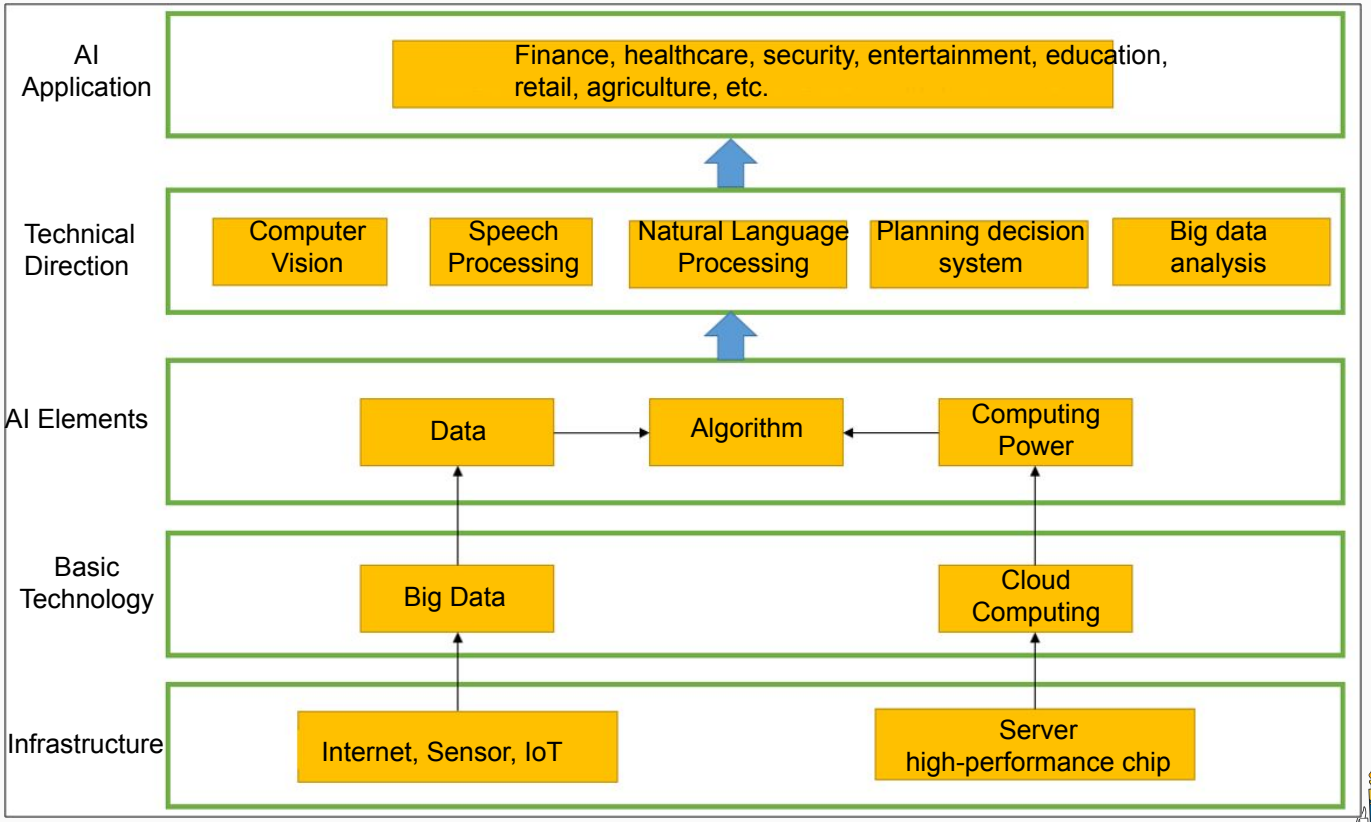
Architecture of the AI Application Platform



Challenges in AI Capability Development and Application

High thresholds

Demanding requirements

6 months: ML & DL
2 months: Statistics
4 months: Linear algebra
3 months: Calculus

15 months

Low efficiency

Long training cycles

Data collection and cleansing
Model training and optimization
Customized experience improvement

3–8 months

Diverse requests

Fragmented experience

The entire training cycle must be repeated for each scenario.
Lack of inheritability or transferability

N-fold workload

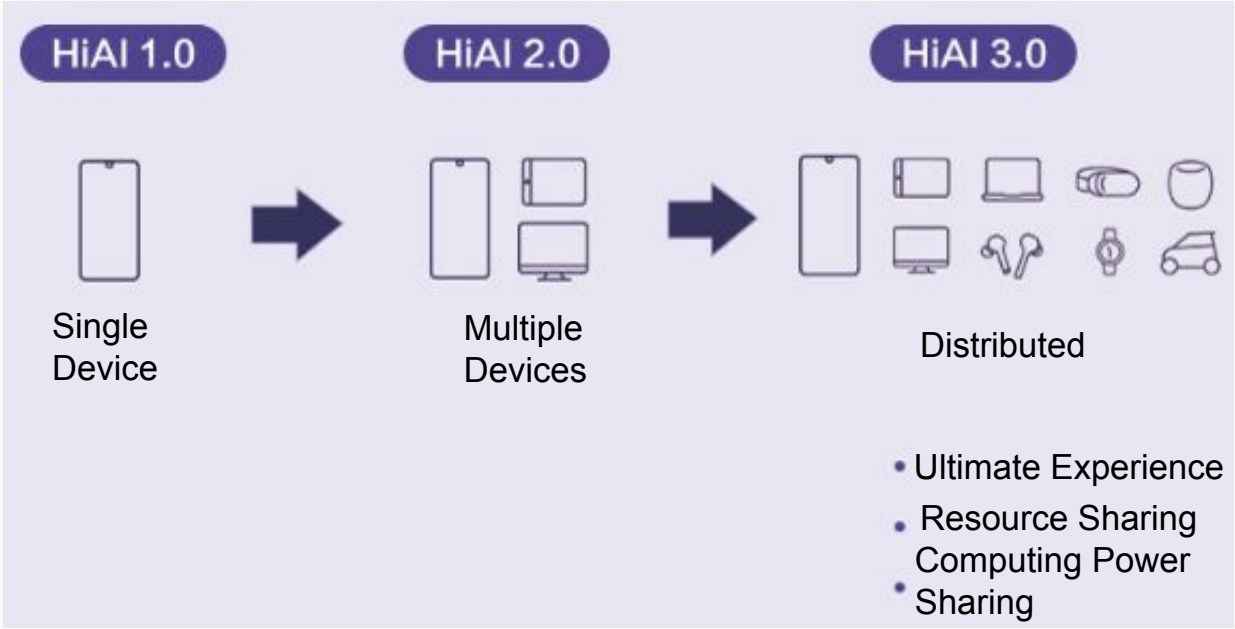
Slow iteration

Limited capability enhancement

Difficulties in model upgrade
Difficulties in valid data acquisition

1. AI Industry Ecosystem
2. **Huawei HiAI Platform**
3. Developing Apps Based on Huawei HiAI Platform

HiAI 3.0 — Enabling Ultimate Experience in All-Scenario Smart Life

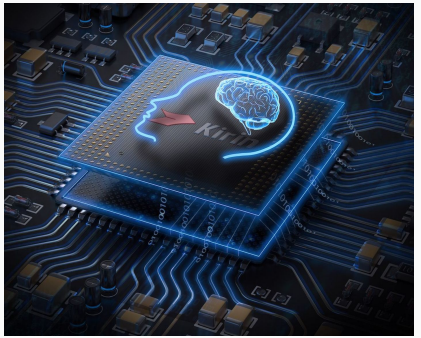


- 4000+ partners
- Over 96 million daily active users
- Over 600 billion monthly calls

Huawei HiAI 3.0: Enabling Distributed All Scenarios by AI

Cloud 1000+ atomized services

Device 40+ application programming interfaces (APIs)



Chip 300+ operators

Huawei HiAI Service

Service capability openness for mutual benefits
Push services based on user requirements in an active manner.

Huawei HiAI Engine

AI capability openness for simplicity
Integrate multiple AI capabilities into apps simply, making apps smarter and more powerful.

Huawei HiAI Foundation

Chip capability openness for high efficiency
Quickly convert and migrate existing models to obtain optimal performance based on heterogeneous scheduling and network process unit (NPU) acceleration.

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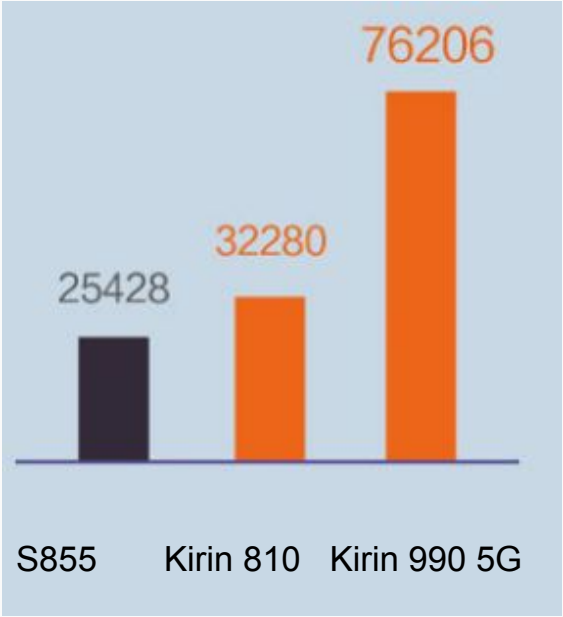
HiAI Foundation APIs

- HiAI Foundation APIs constitute an AI computing library of a mobile computing platform, enabling developers to efficiently compile AI apps that can run on mobile devices.
  - Leveraging high performance and high precision of Kirin chips, better device-end AI performance will be delivered by more powerful computing power.
  - Support the largest number of operators (300+) in the industry and more frameworks, greatly improving flexibility and compatibility.
  - The Honghu, Kirin, and AI camera chips enable AI capabilities for more devices.



AI running score data

HiAI Engine

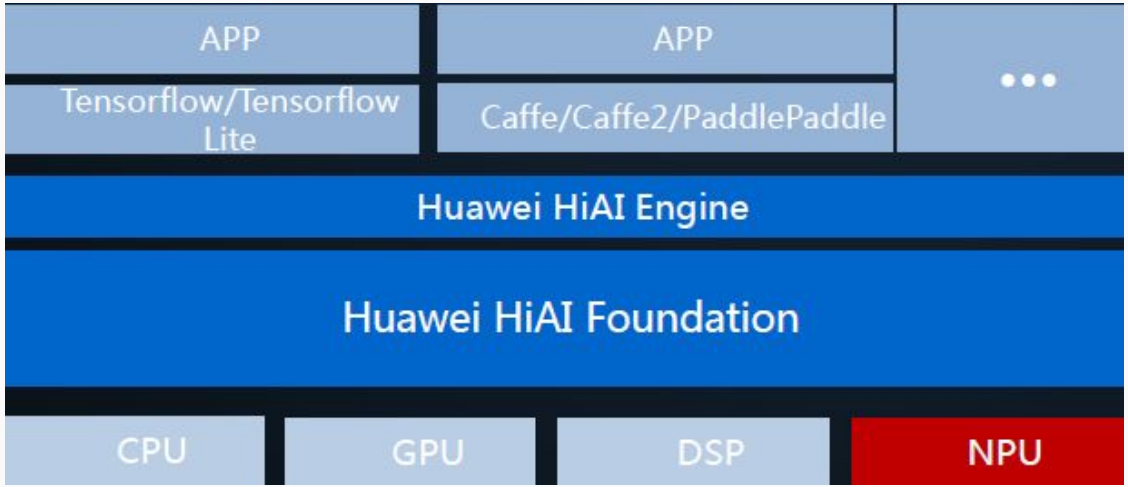
- HiAI Engine opens app capabilities and integrates multiple AI capabilities into apps, making apps smarter and more powerful.
  - Provide handwriting recognition and dynamic gesture recognition capabilities, with 40+ underlying APIs.
  - Computer vision and speech recognition will develop toward a distributed mode, assisting developers in delivering more all-scenario smart life experience.

Distributed AI helps sports healthy and safe driving

HiAI Service

- HiAI Service enables developers to reuse services on multiple devices, such as mobile phones, tablets, and large screens, with only one service access, efficiently implementing distribution.

Architecture of the HiAI Mobile Computing Platform



Supports diverse mainstream front-end frameworks.

Provides various upper-layer function service APIs to ensure efficient running on mobile devices.

Allows flexible scheduling of heterogeneous resources, meeting developers' demand to accelerate neural network model computing and operator computing

Tool chain

Comprehensive documents

Different types of APIs

Source codes enabling quick st

What can apps benefit from Huawei HiAI?

Real time

Ready-to-use

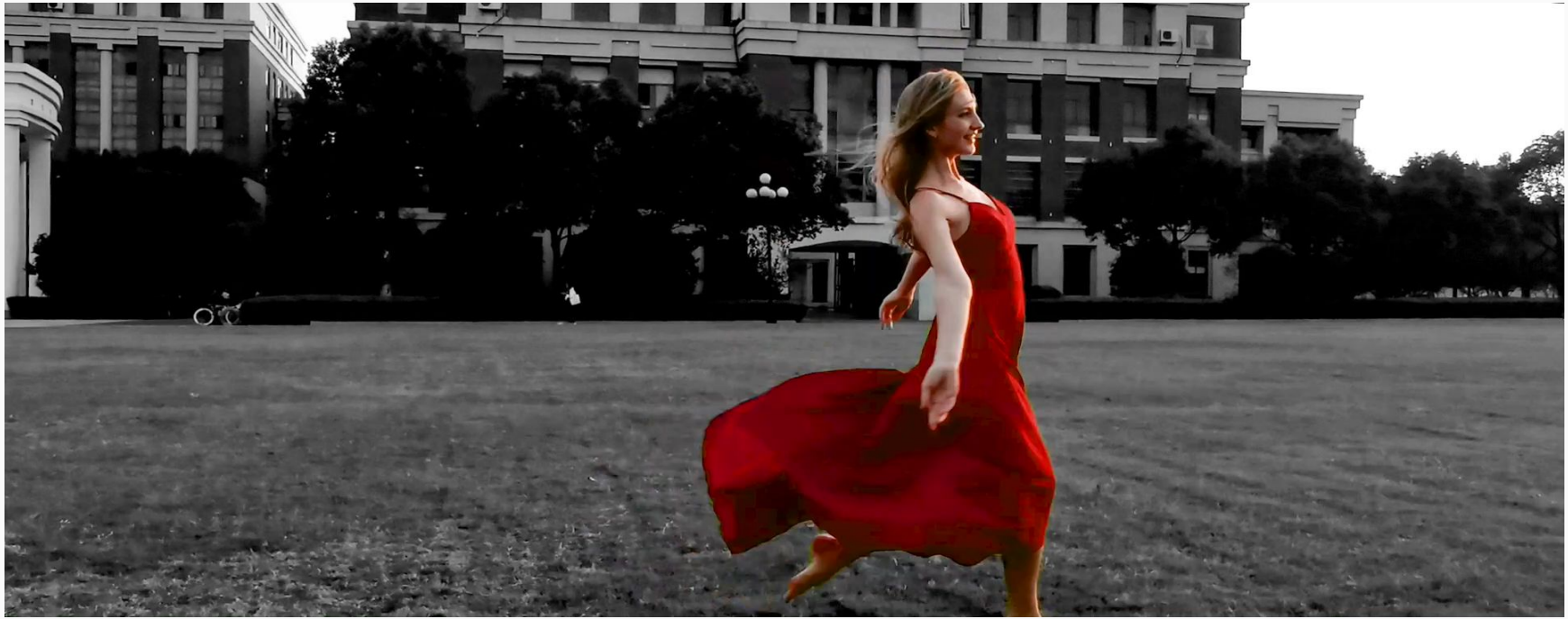
Stability

Security

Lower cost

Huawei HiAI + Ctrip Help You Take Poetic Photos

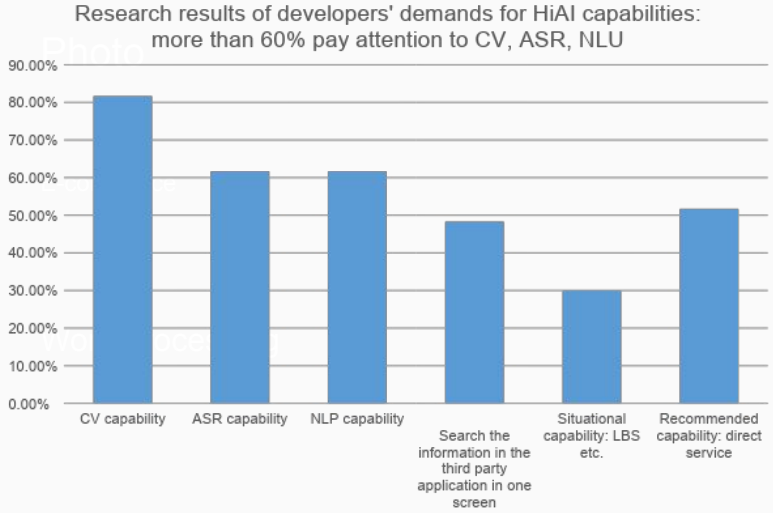
Real-time NPU AI Image Segmentation



NPU+AI Human Image Matting for Flexible Switchover in Multiple Scenarios

- https://www.bilibili.com/video/av66898567/

AI Capability Provider, Accelerating Application Development



Short video and live streaming	Social media	Augmented reality (AR)	Photo taking and retouching	Shopping	Translation and text processing
Facial recognition Gesture recognition Portrait segmentation Posture recognition Video style Voice control Intelligent depth of field control Image scene recognition	Photo categorization Image recognition Image super-resolution (SR) Sensitive data recognition	Contextual awareness Voice control Depth estimation Light estimation	Beautification Image enhancement Aesthetics scoring Album generation Photographing by voice Photographing by gesture	QR code scan Direct service delivery and recommendation ID card recognition Bank card recognition Product identification	Translate by taking a photo Optical character recognition (OCR) Word splitting Named entity recognition Text emotion recognition Intelligent text reply Text and image SR
Computer vision (CV), automatic speech recognition (ASR)	CV, natural language understanding (NLU)	ASR, CV	CV	CV	NLU, CV, ASR

Comprehensive Tools for Developers