

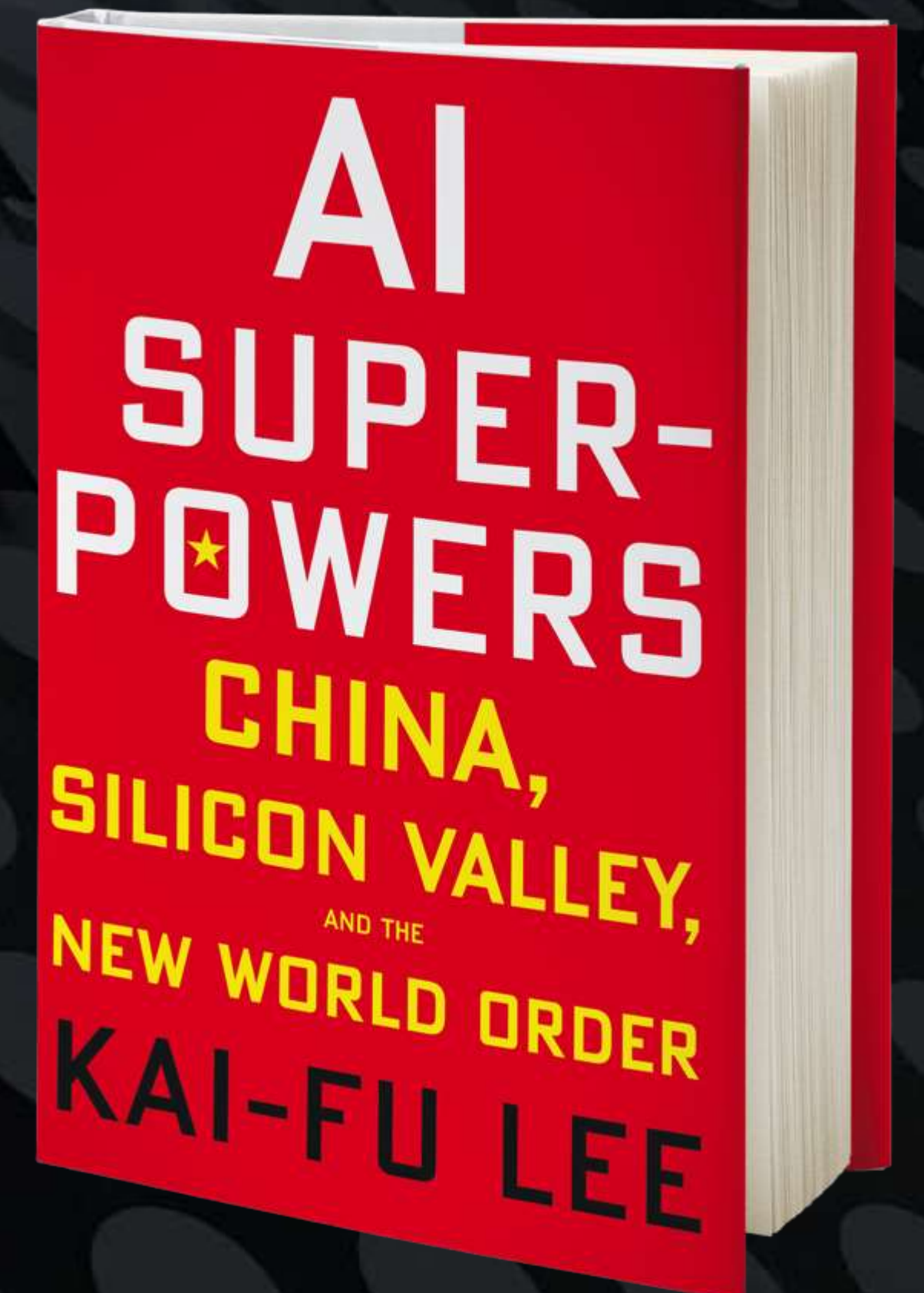
# The Era of AI:

## *The Rise of China & The Future of Work*

**Dr. Kai-Fu Lee**

Chairman & CEO, Sinovation Ventures

[www.aisuperpowers.com](http://www.aisuperpowers.com)





# Deep Learning



“Say something about AI”



It's a great thing to build a better world with Artificial Intelligence

人工智能正在改变世界



# Four waves of Artificial Intelligence Applications

## Wave 4: Autonomous AI

2015



## Wave 3: Perception AI (digitized physical world)

2011



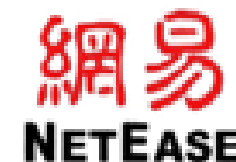
## Wave 2: Business AI

2004



## Wave 1: Internet AI

1998





# Five Premises of AI

Massive data

1

Accurate,  
objective tagging

2

Single  
domain

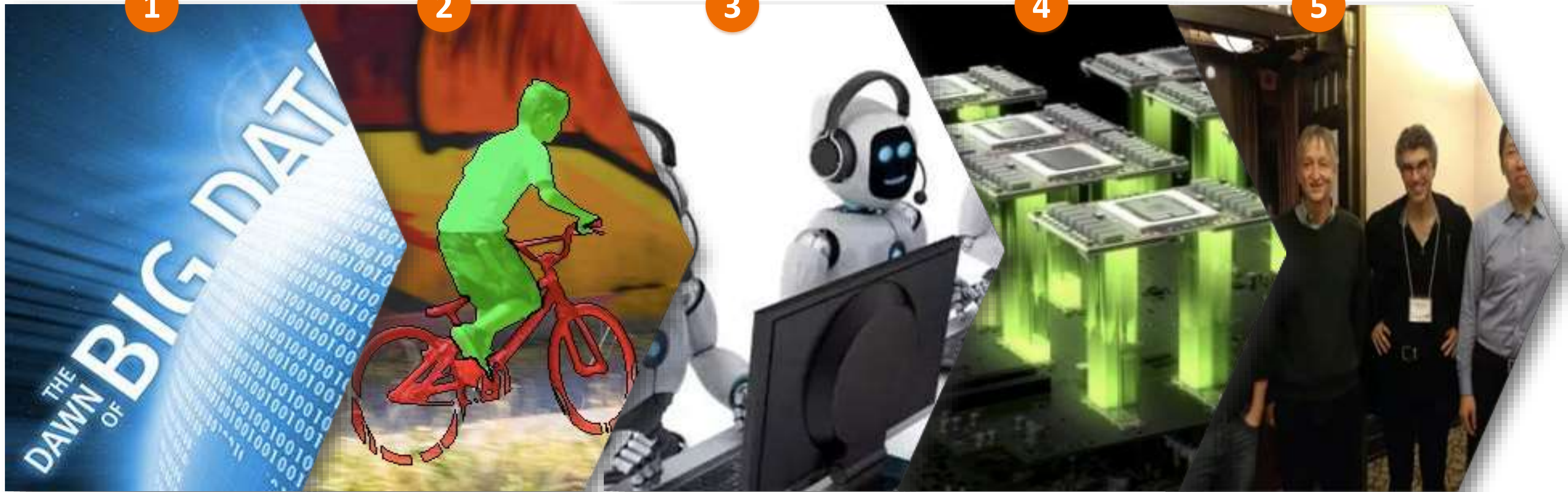
3

Computation  
power

4

AI Experts

5

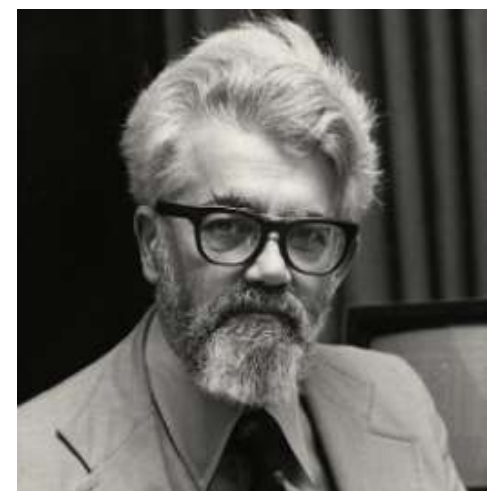
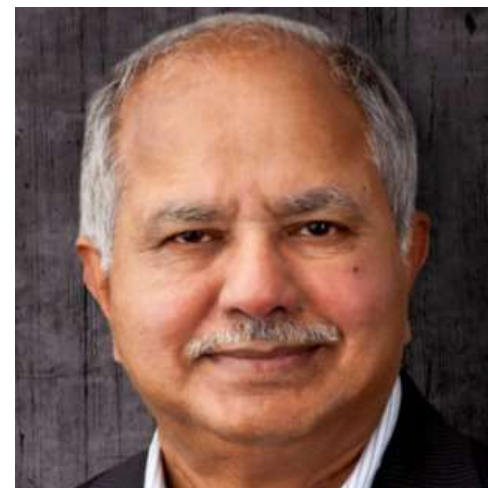


SINOVAION  
VENTURES

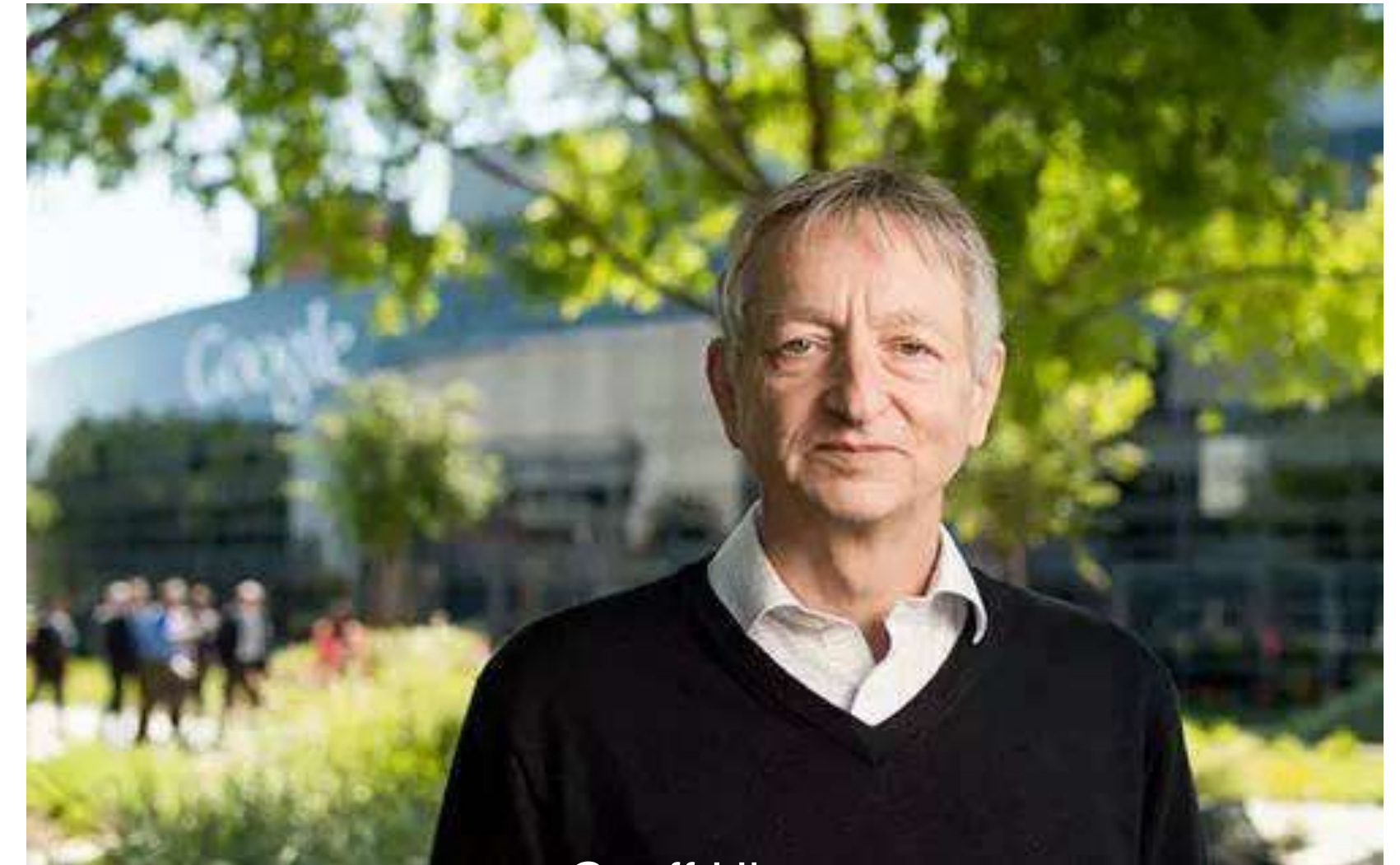


# US Leads in AI Science & Top Scientists

## Turing Award Recipients in AI



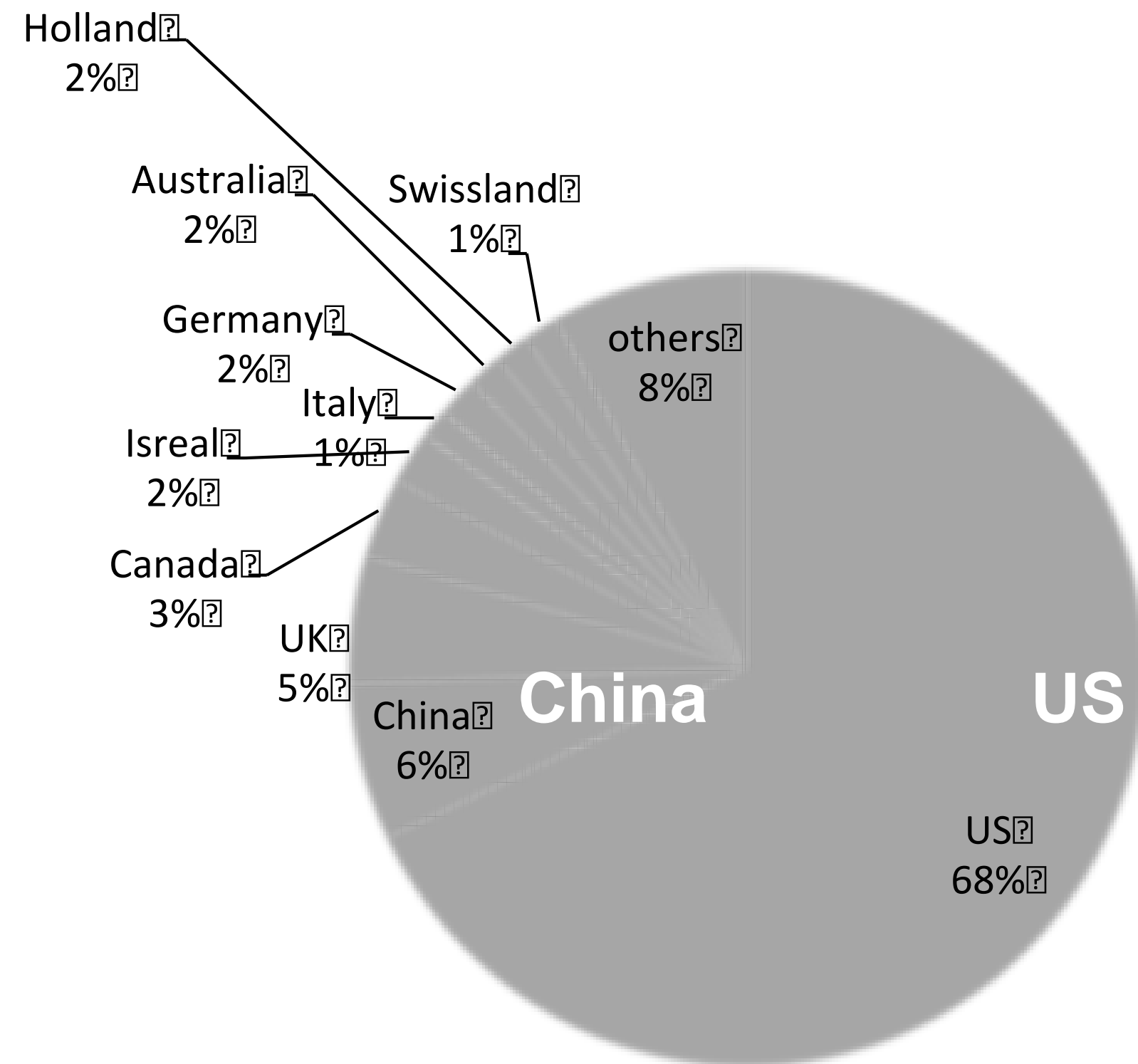
## Deep Learning Inventors





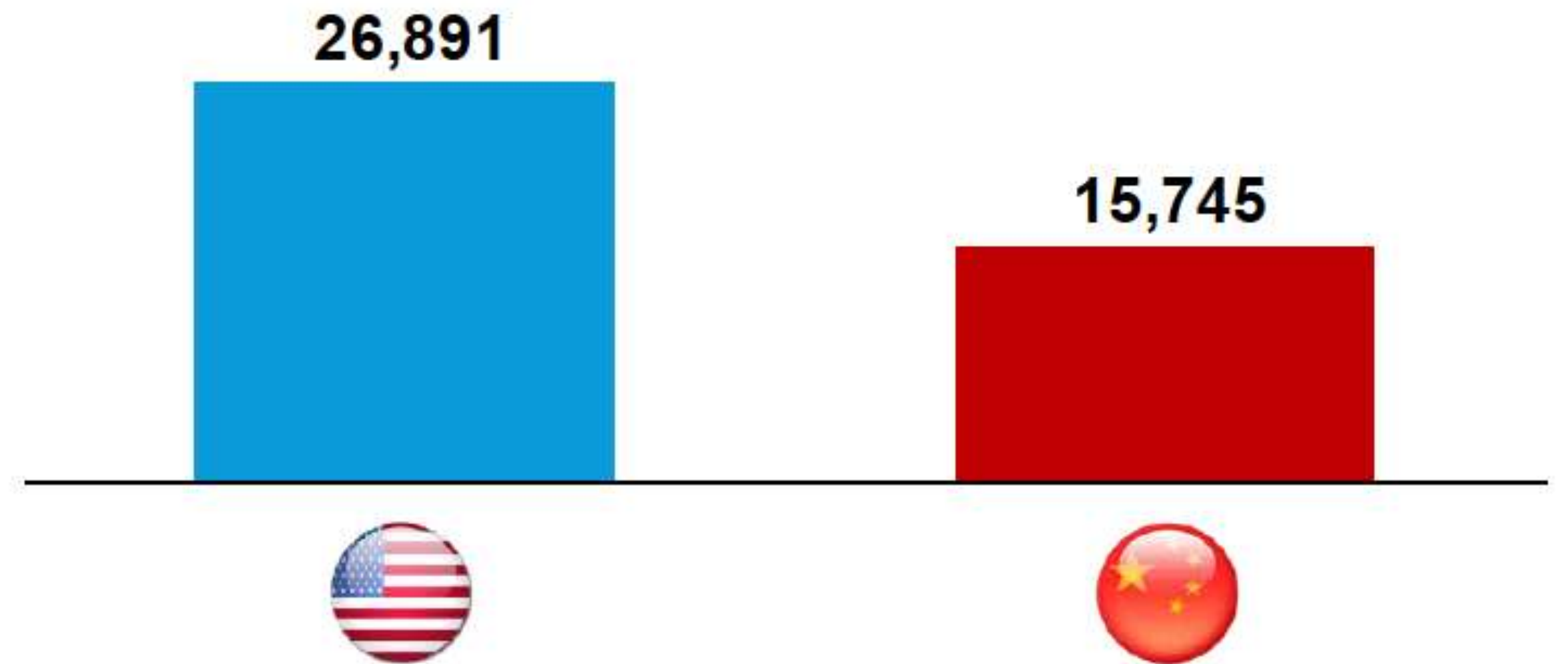
# US leads China by far in top-1000 researchers & patents

## World's Leading 1000 AI Experts by Country (H-Index $\geq$ 60)



Source: AMiner 2017 AI and Autonomous Driving Research

## Number of AI / ML Patents



# So how can China have a chance?

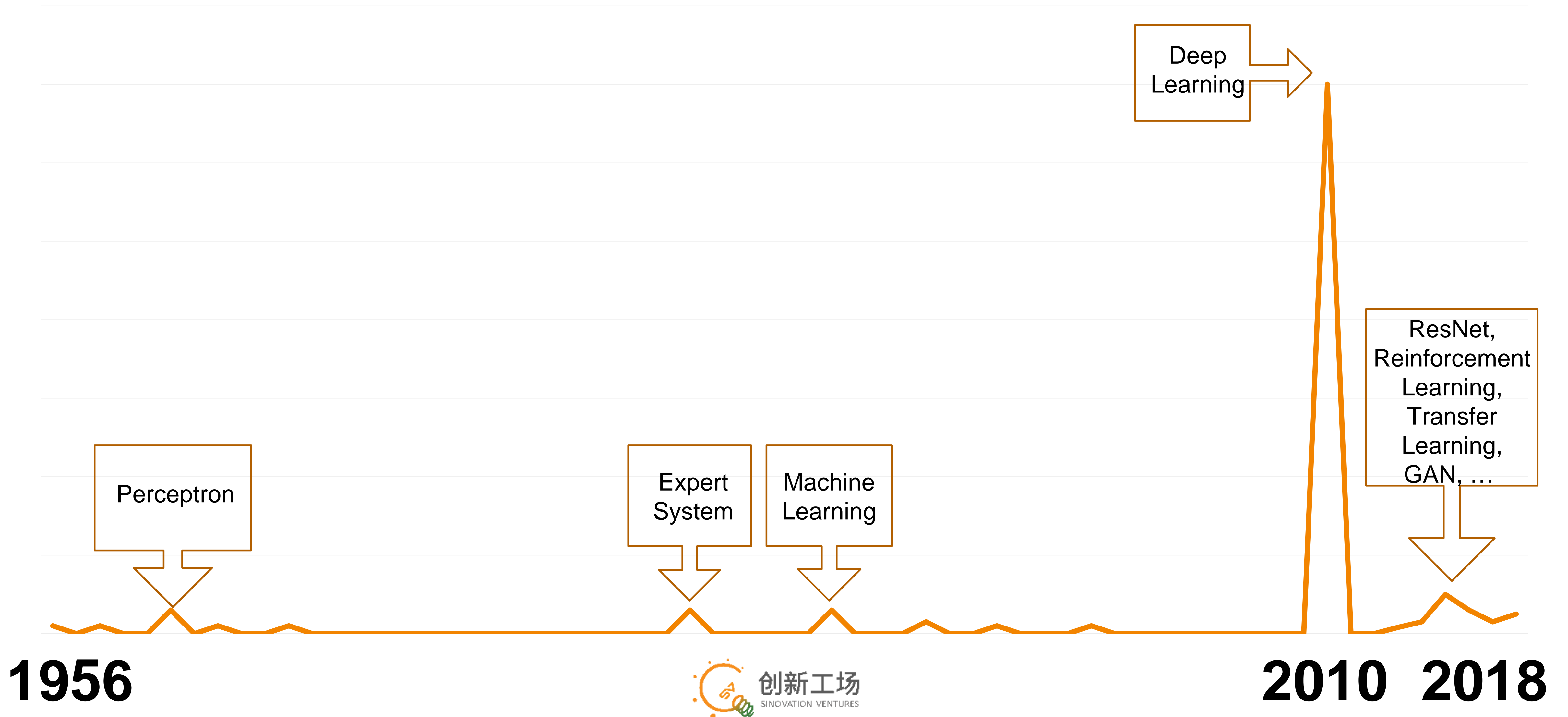
1 Only few AI breakthroughs + they're easy to apply

2 AI entering era of implementation

3 AI platforms + openness further lowers entry barrier

# Observation 1: Only few AI breakthroughs:

## Deep learning is the *biggest* breakthrough that is now easy-to-apply





# Observation 2: AI is entering the Era of Implementation





## Observation 3: AI platforms + openness lower AI entry barrier



arXiv.org

kaggle





# For most applications, super AI experts not needed

Massive data

1

Accurate,  
objective tagging

2

Single  
domain

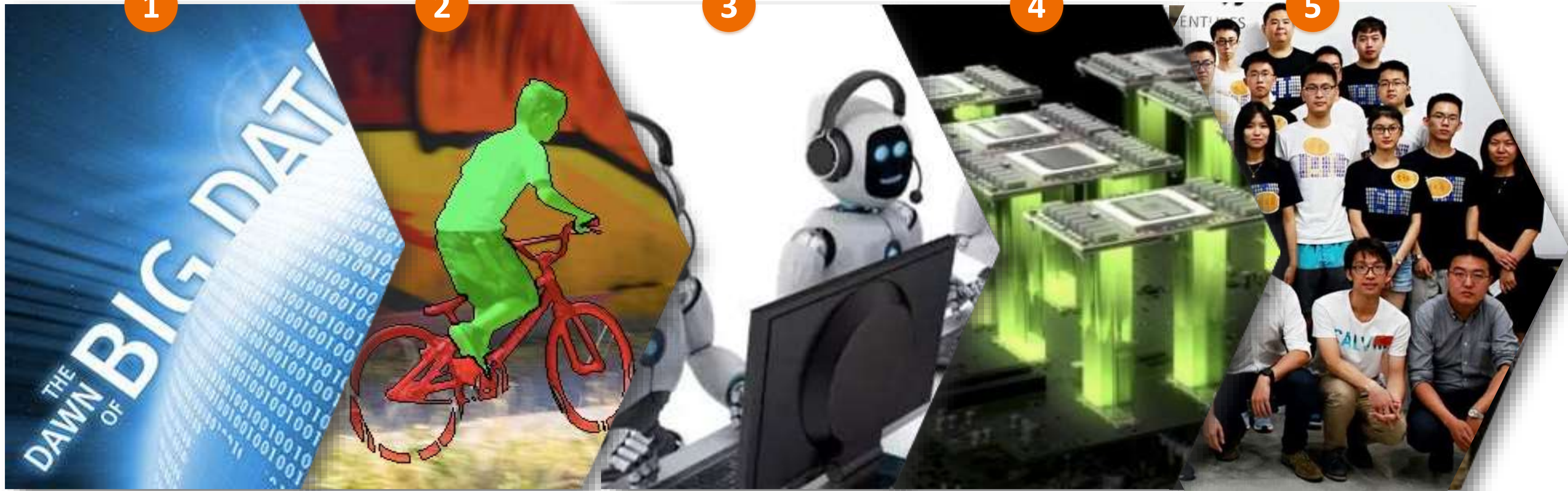
3

Computation  
power

4

Young  
AI Engineers

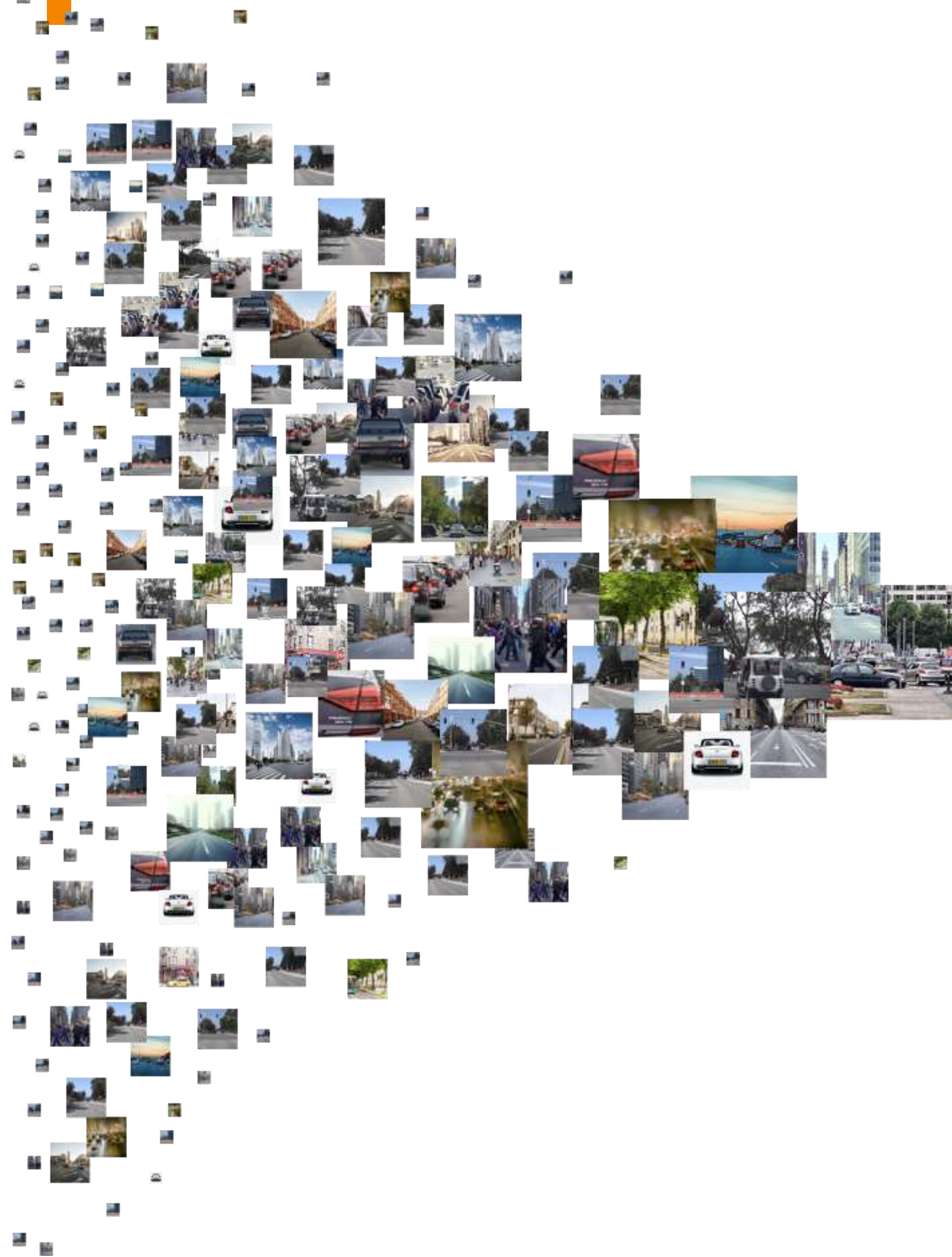
5



SINOVAION  
VENTURES



# Deep Learning: Autonomous Driving (Student Project)





# How China leapfrogs in AI implementation

1

Only few AI breakthroughs + they're well understood

2

AI entering era of implementation

3

AI platforms + openness further lowers entry barrier

1

Massive Young Chinese AI engineers

2

China has become innovative

3

Chinese founders are fast & tenacious

4

China has more AI funding & unicorns

5

China has more data

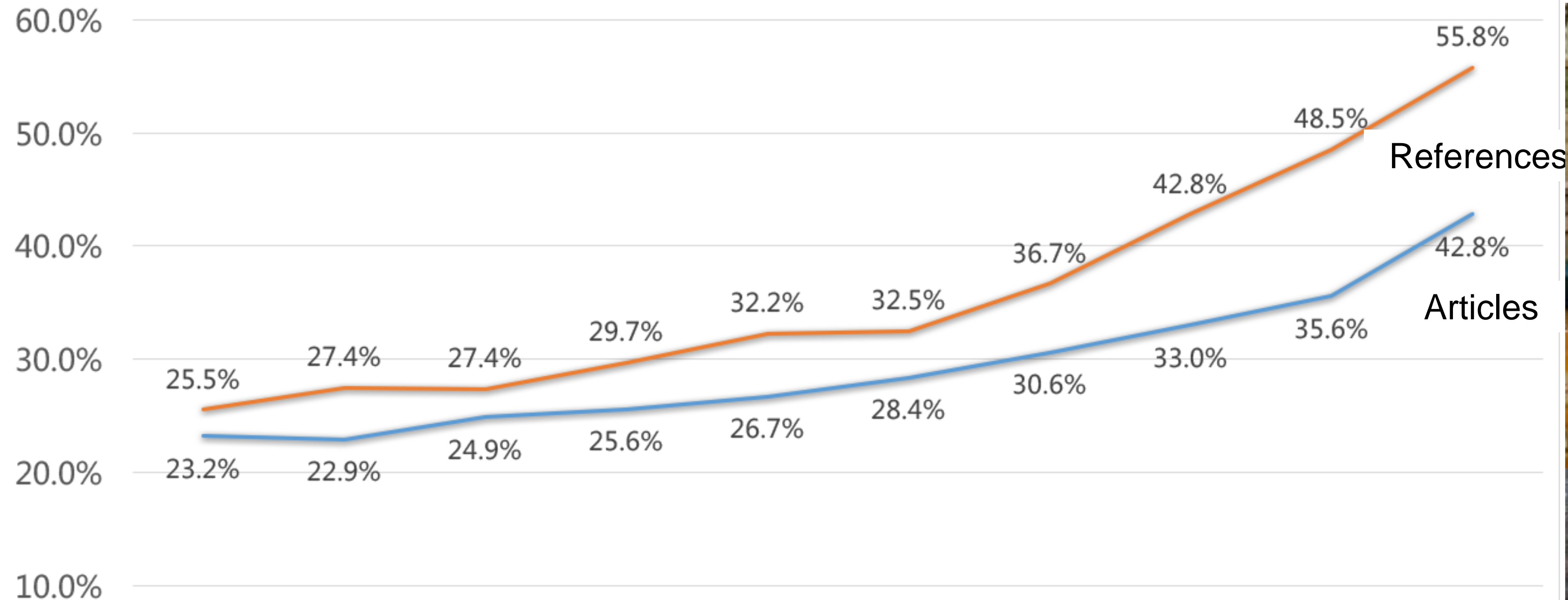
6

Chinese techno-utilitarian policies



# Reason 1: Massive number of young Chinese AI engineers

## Chinese contributions to AI journals and conferences



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
— 文章总数%	23.2%	22.9%	24.9%	25.6%	26.7%	28.4%	30.6%	33.0%	35.6%	42.8%
— 引用总数%	25.5%	27.4%	27.4%	29.7%	32.2%	32.5%	36.7%	42.8%	48.5%	55.8%





# Reason 2: Chinese product innovation has caught up with US

Copied from  
U.S.

Baidu 百度

网易  
NETEASE

sina 新浪

搜 狐  
SOHU.com

Inspired by  
U.S., then  
leapfrogged



知乎



meitu

淘宝网



Chinese  
innovations



mobike



Entering the era of:  
Copy-from-China



SINOVIATION  
VENTURES







# Reason 3: Tough market begets tough entrepreneurs

**Gladiator-like  
Entrepreneurs moving at  
lightening speed**



**Strong fund raising capability  
+ impregnable bus. model**



**Work ethic driven by  
hunger for success**

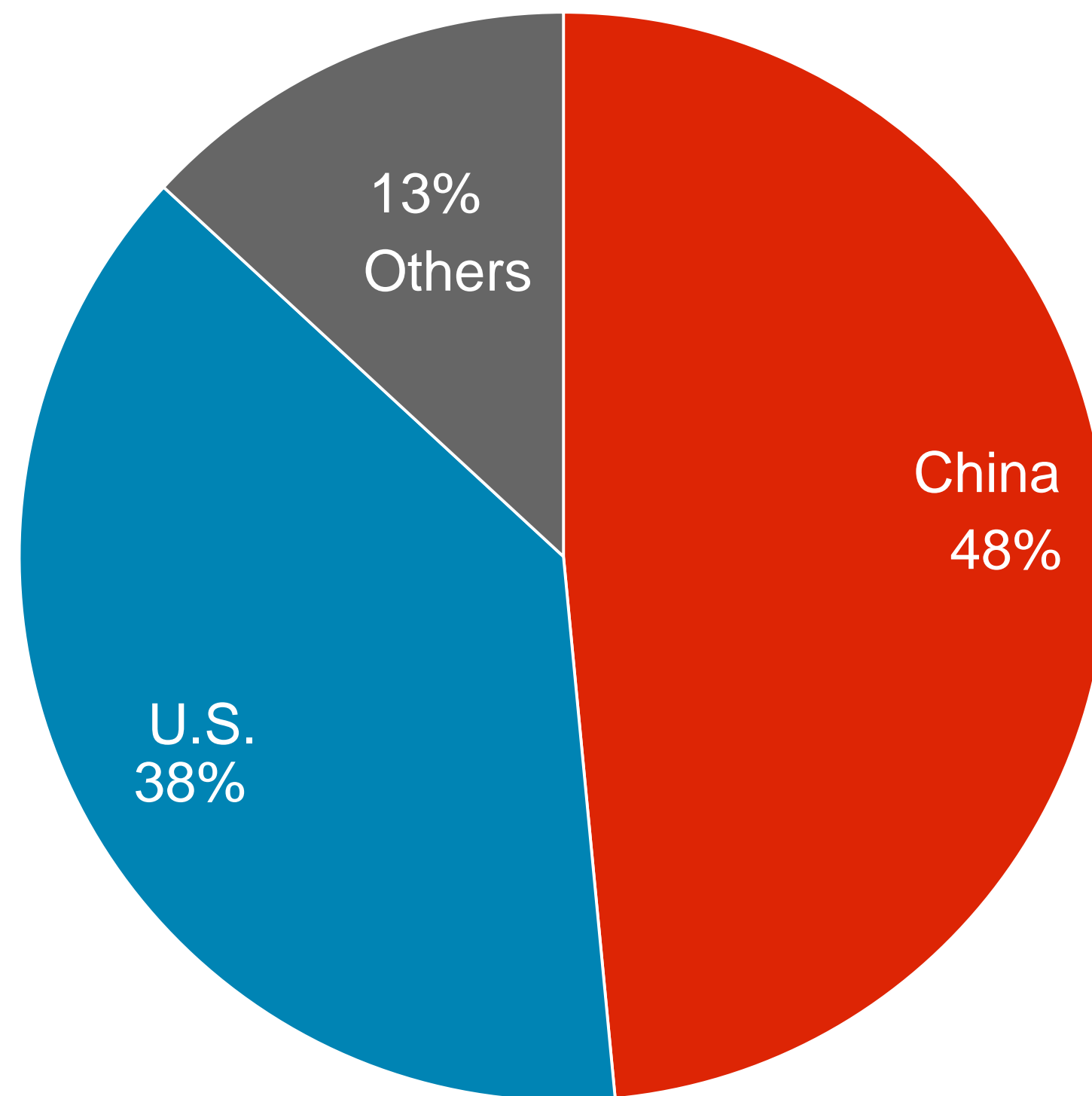


**Fast iterations towards business goals, while adding data = the key to AI implementation**

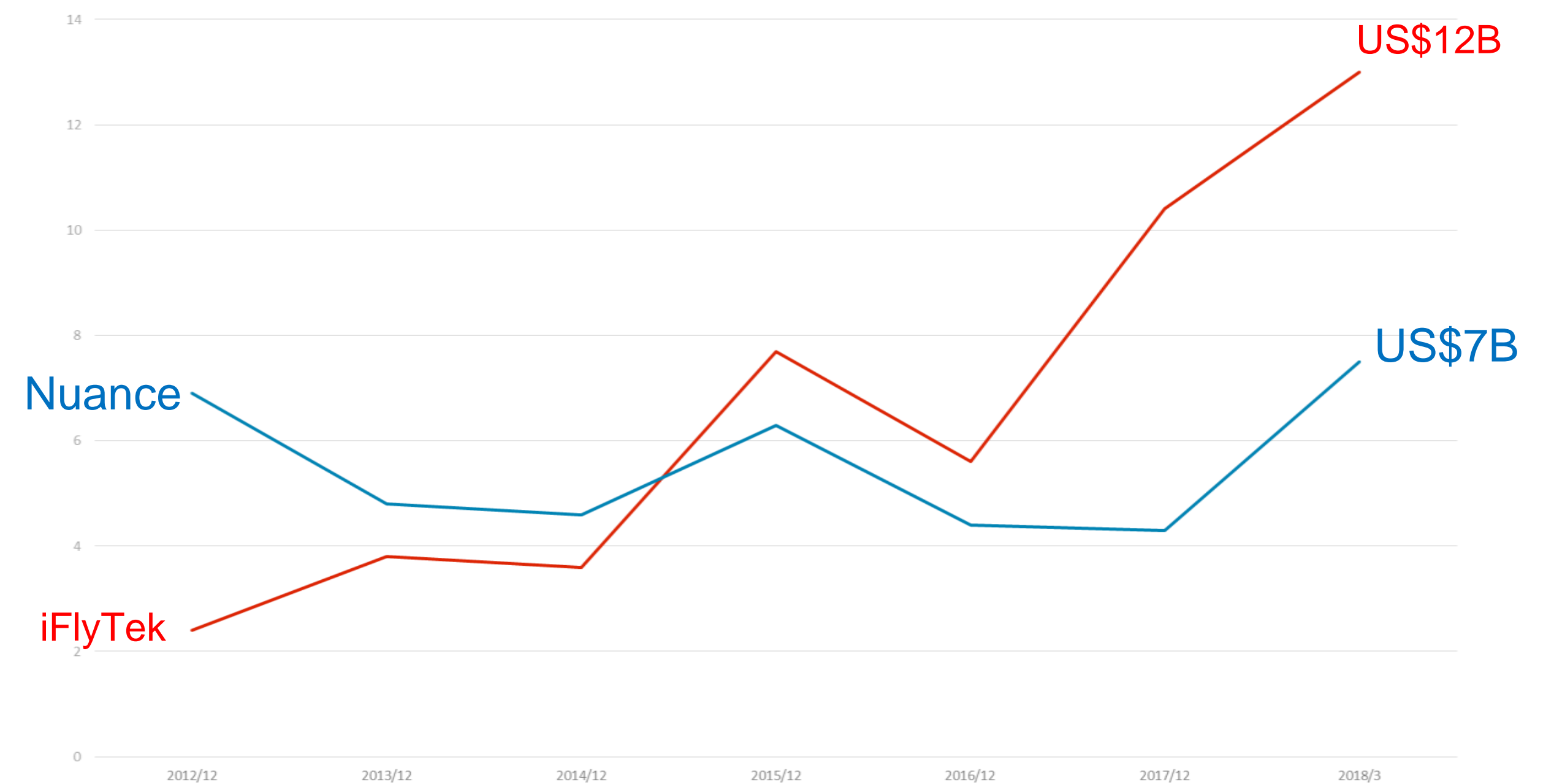


# Reason 4: China's AI capital leads the world

2017 world-wide AI investments



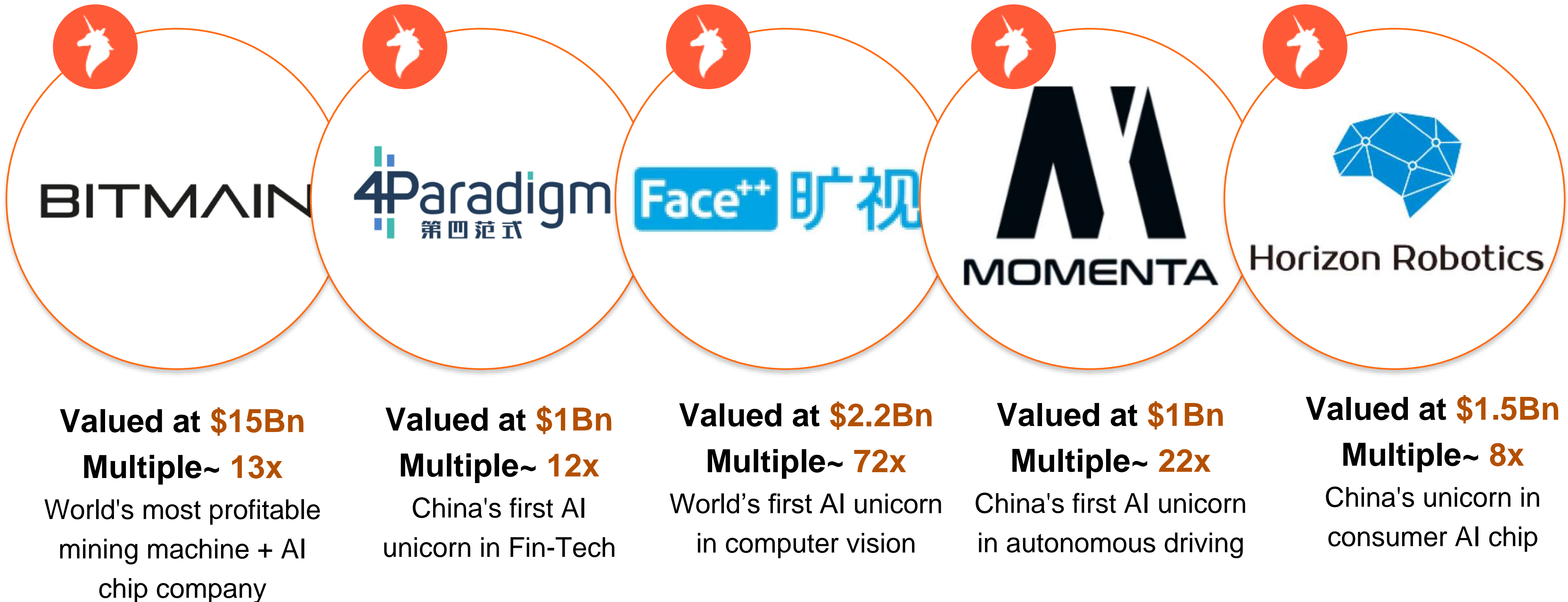
China-US Top Voice Recognition Company Valuation (in USD billions)



Source: CB Insights 2017 Global Artificial Intelligence Investment



# Sinovation Ventures' s AI unicorns, total valuation \$21B

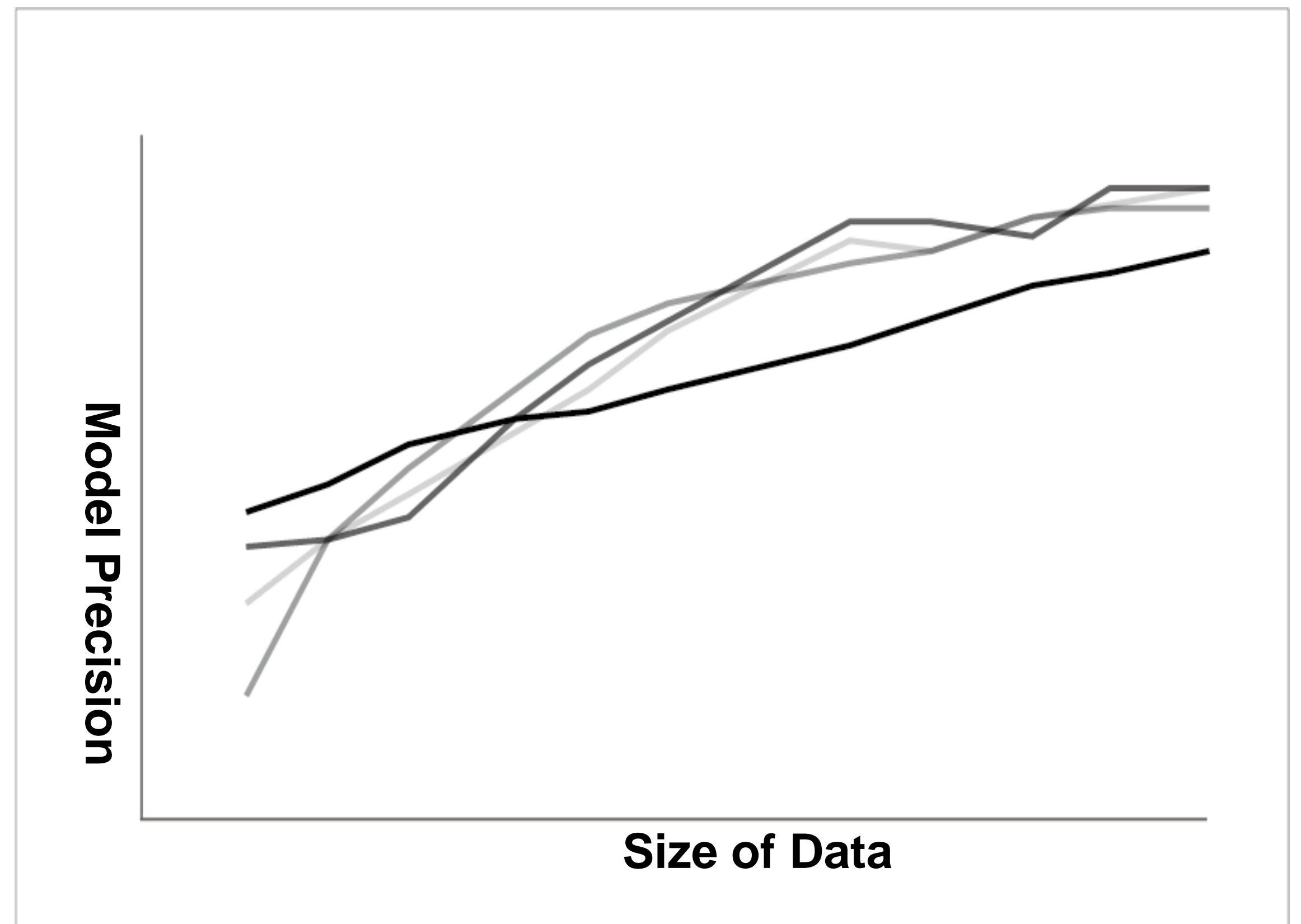
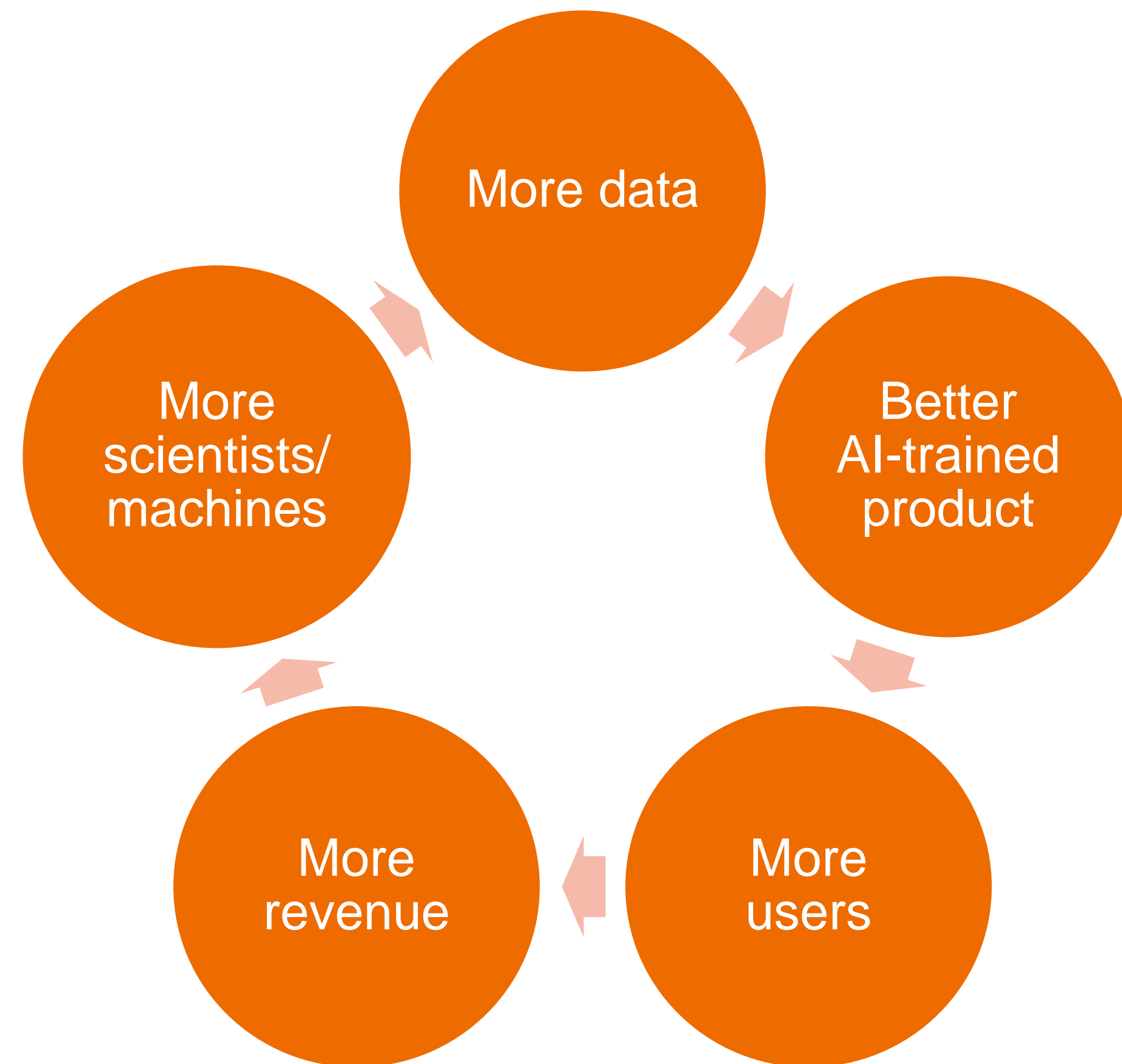




# Reason 5: Massive data is critical for AI product success

Big Market = Big Data = Best AI

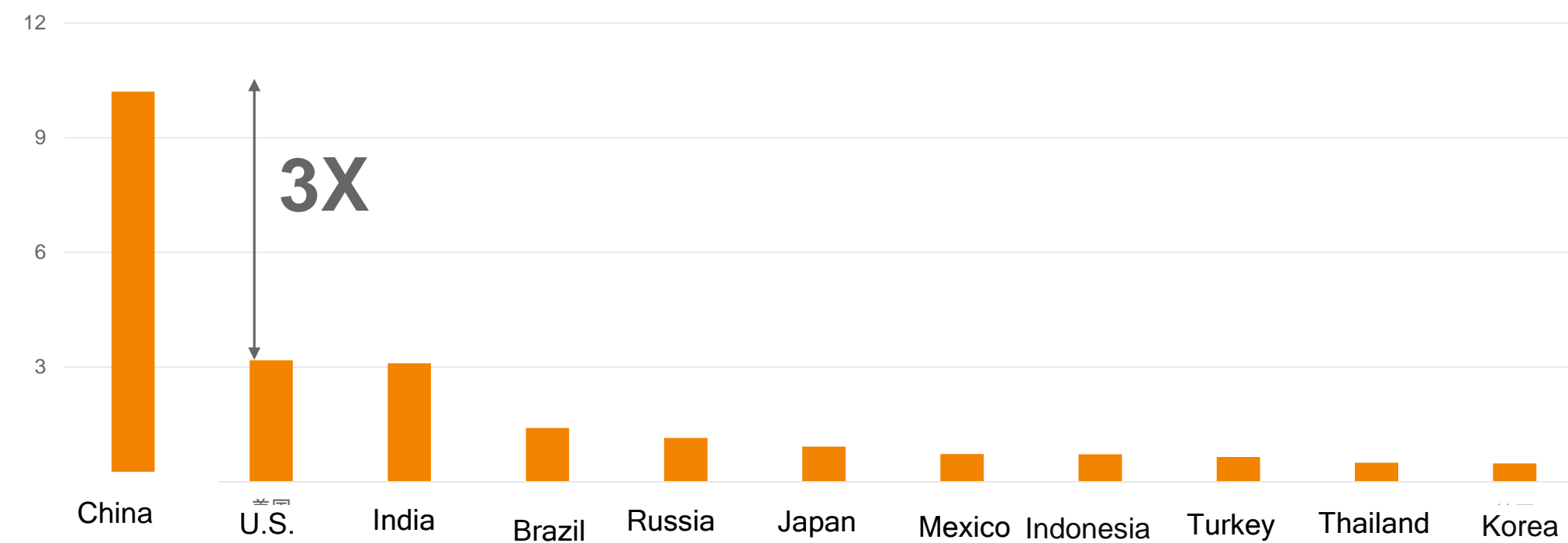
Algorithms are important  
Data is even more critical



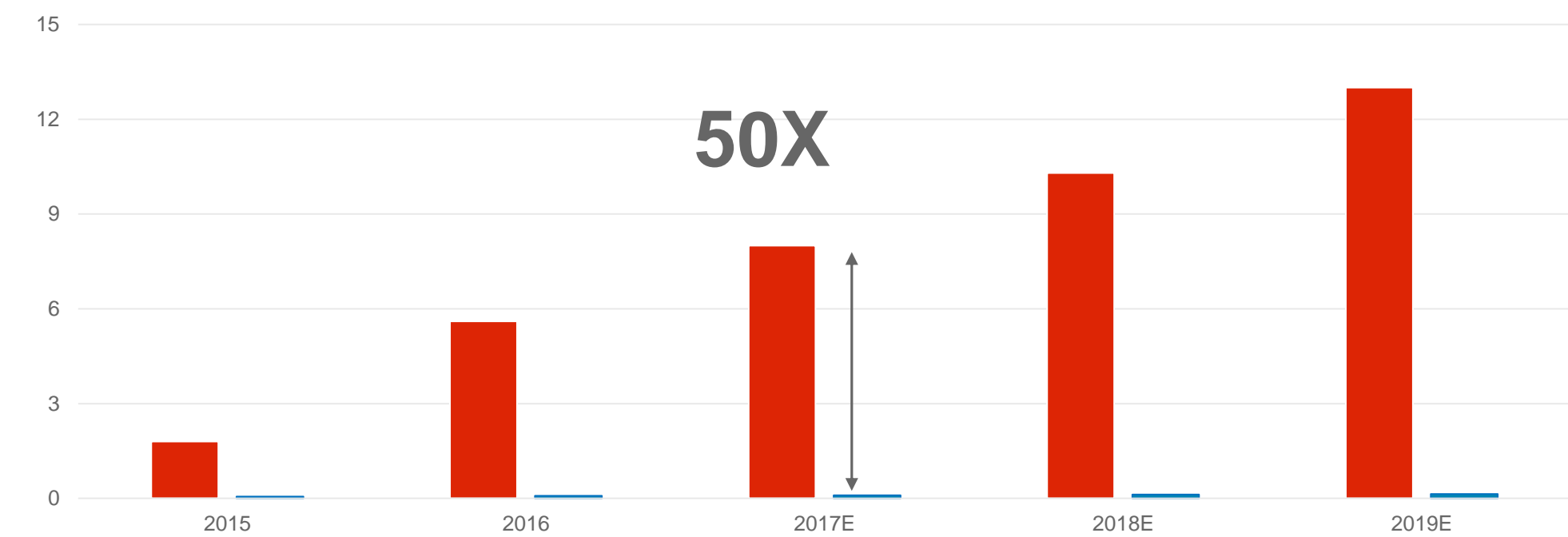


# In the age of AI, China is the Saudi Arabia in data

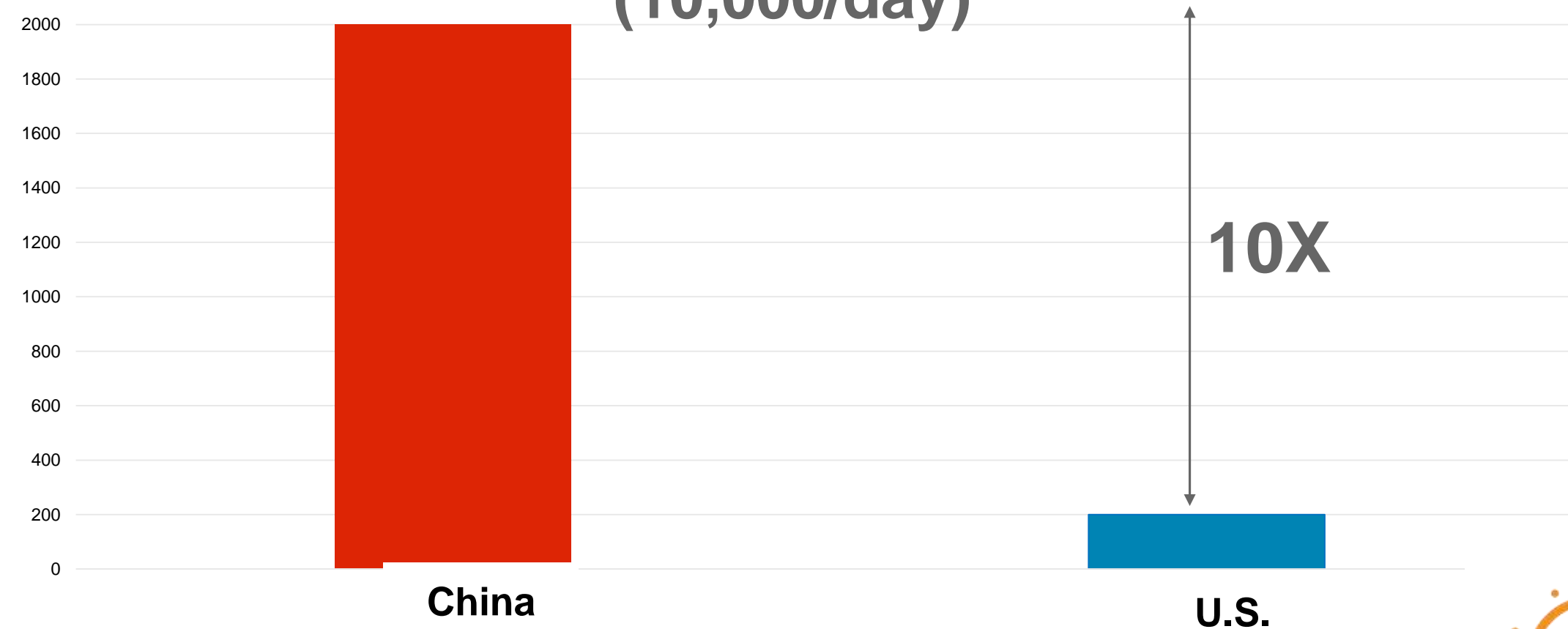
## Mobile Internet users by country (100 million)



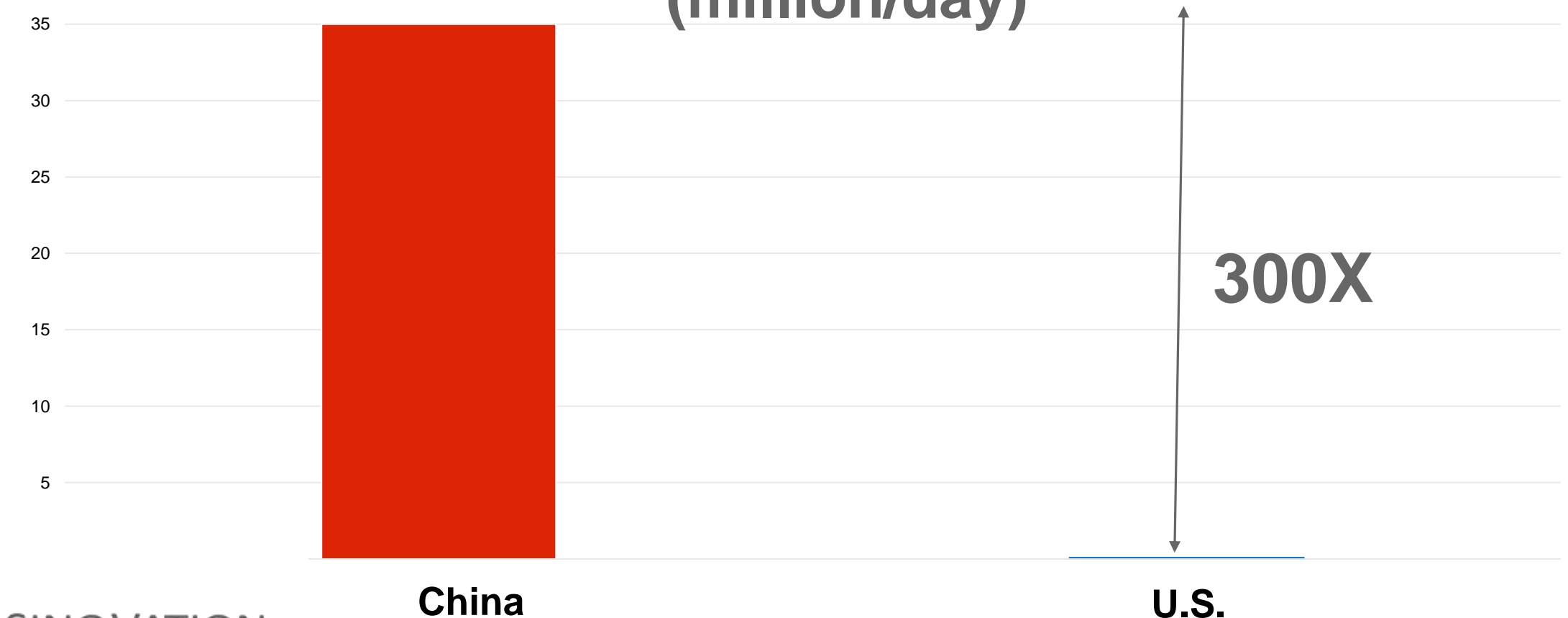
## Mobile Internet, China vs. U.S. (USD trillion)



## Food Delivery, China vs. U.S. (10,000/day)



## Shared bike rides, China vs. U.S. (million/day)





# Mobile payment everywhere

2017

China Mobile Payment

US \$18.8 trillion

2017

China GDP

US \$12.9 trillion





# Reason 6: Techno-utilitarian Chinese policies



## Setting the tone: Chinese State Council AI Development Plan, July 2017

- By 2020: Lead AI technology & applications
- By 2030: Become global AI innovation hub



## Infrastructure investments:

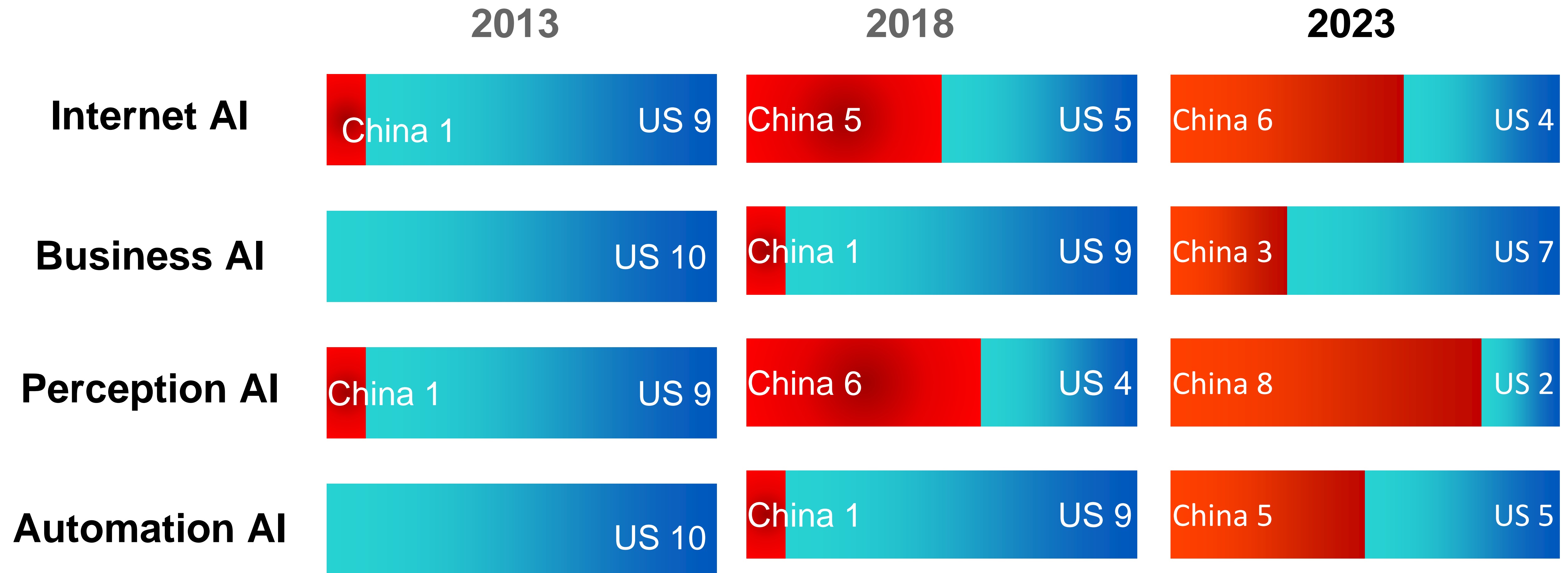
Xiong'an: New city with autonomous driving

- Two layers: one for automobiles, one for pedestrians

Zhejiang: New highway with sensors to improve safety



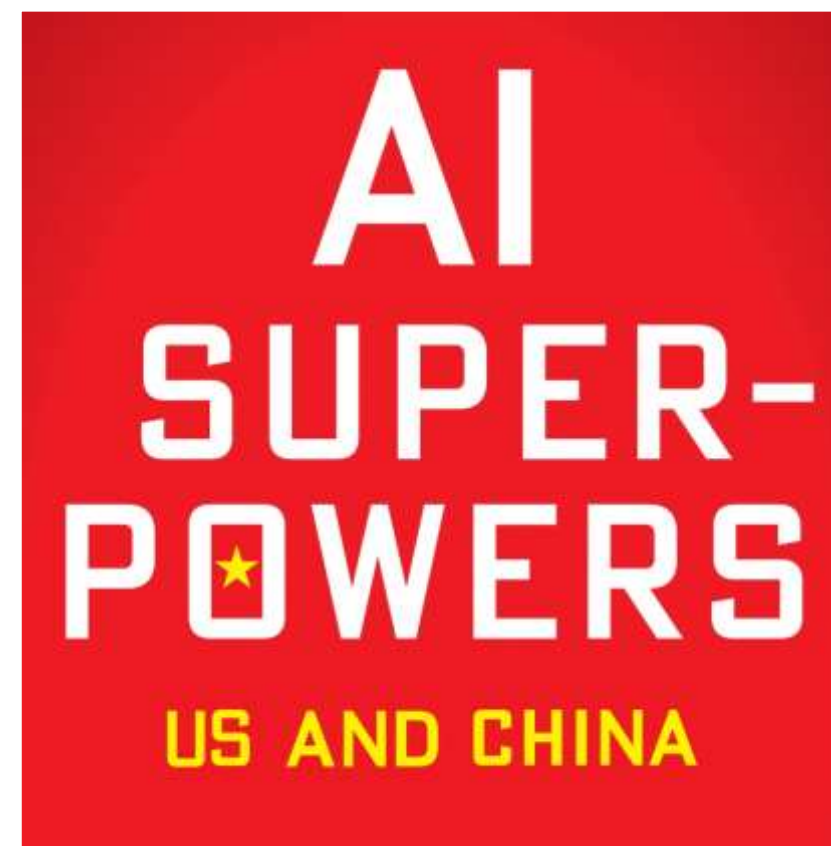
# AI Implementation: China's growing rapidly and cannot be stopped





# The Four Forces Accelerating AI

## 1 Sino-US dual engine



## 2 7 giants with own virtuous cycle



## 3 AI VC & funds growing rapidly

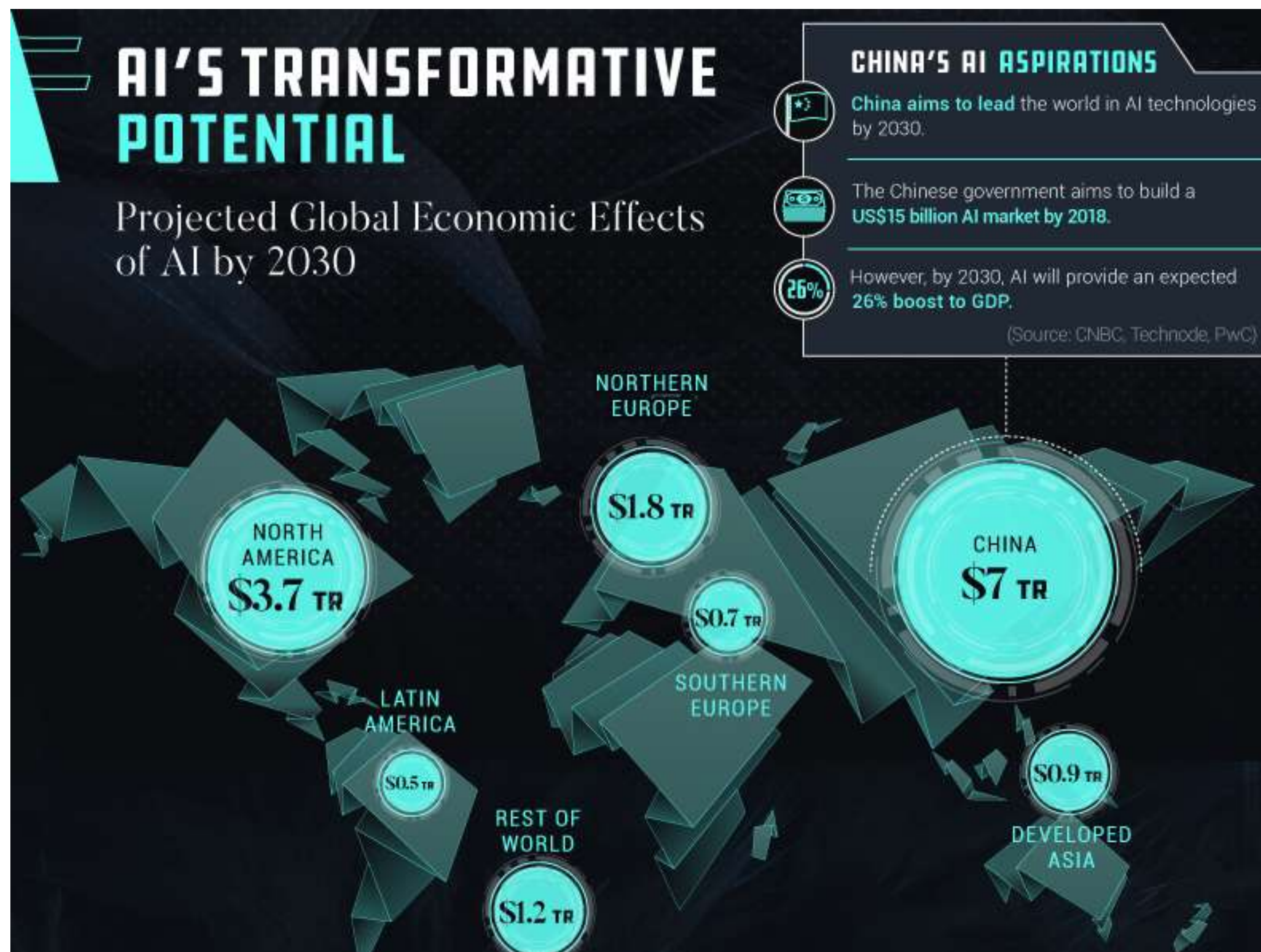


## 4 AI platform emerging; many apps coming





# Today's AI + extrapolations will create unprecedented wealth



**\$ 15.7 Trillion**

**By 2030**

PWC predicts the size of the world AI market (2017 China + India GDP = \$15.3 trillion)



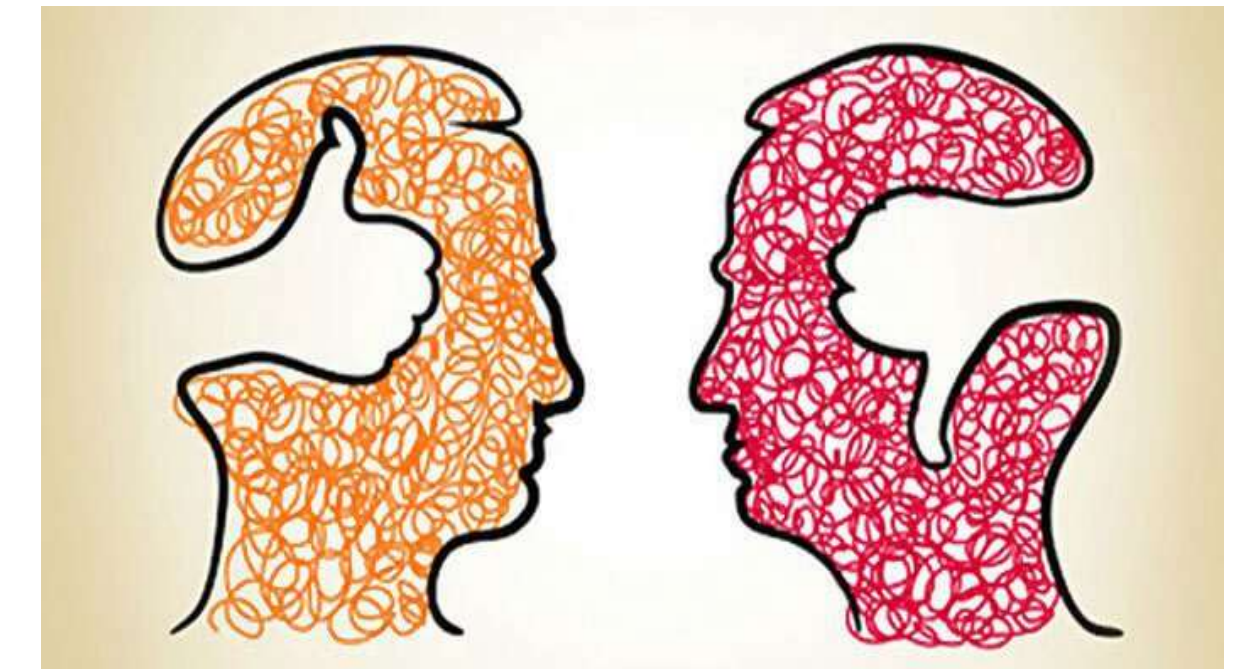
# AI will also cause unprecedented challenges



**Privacy**



**Security**

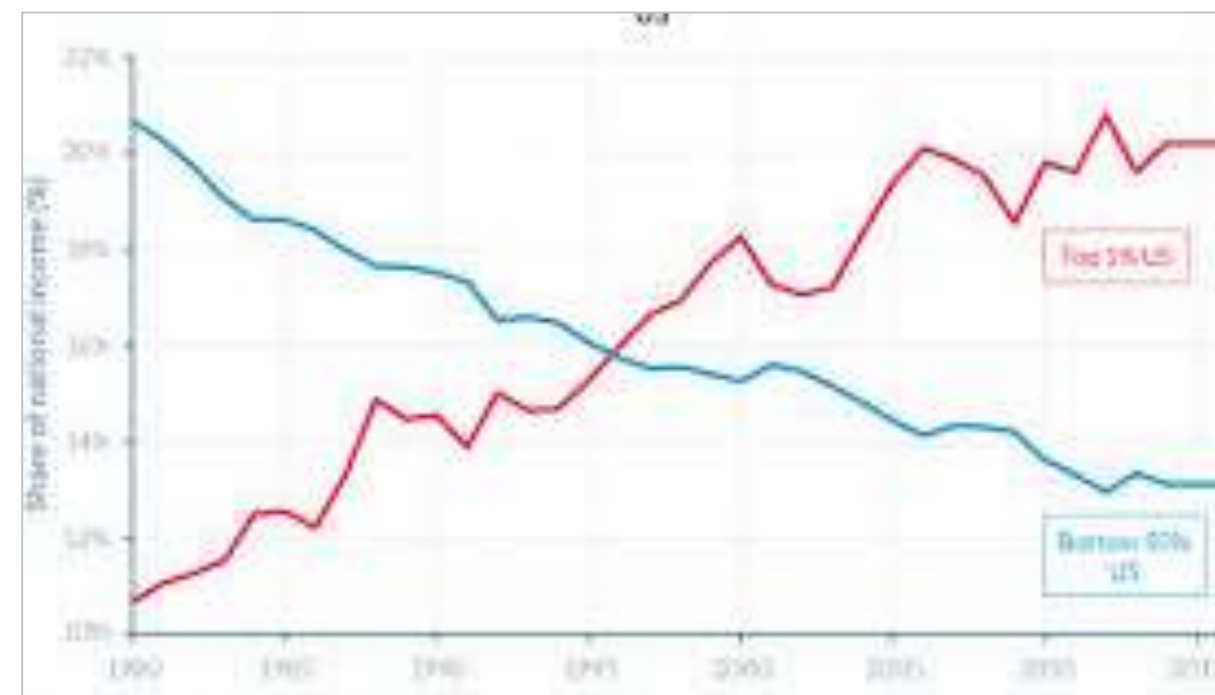


**Bias from Data**

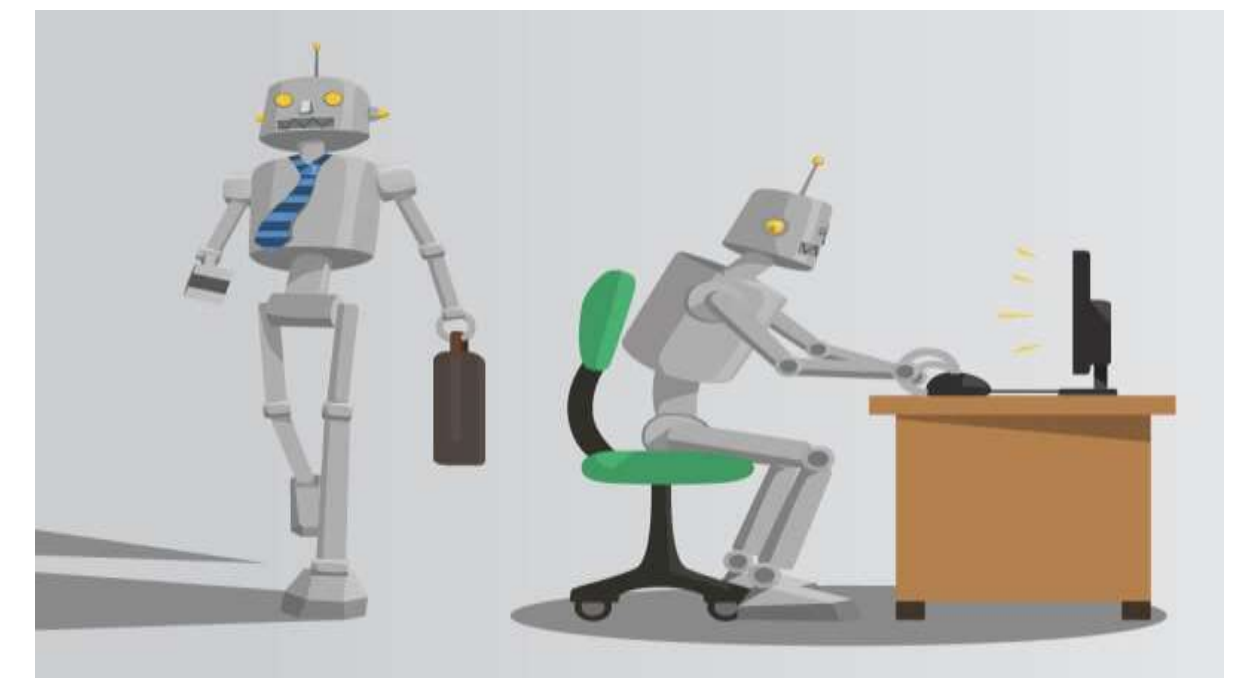
**Giant Dominance**



**Wealth Inequality**

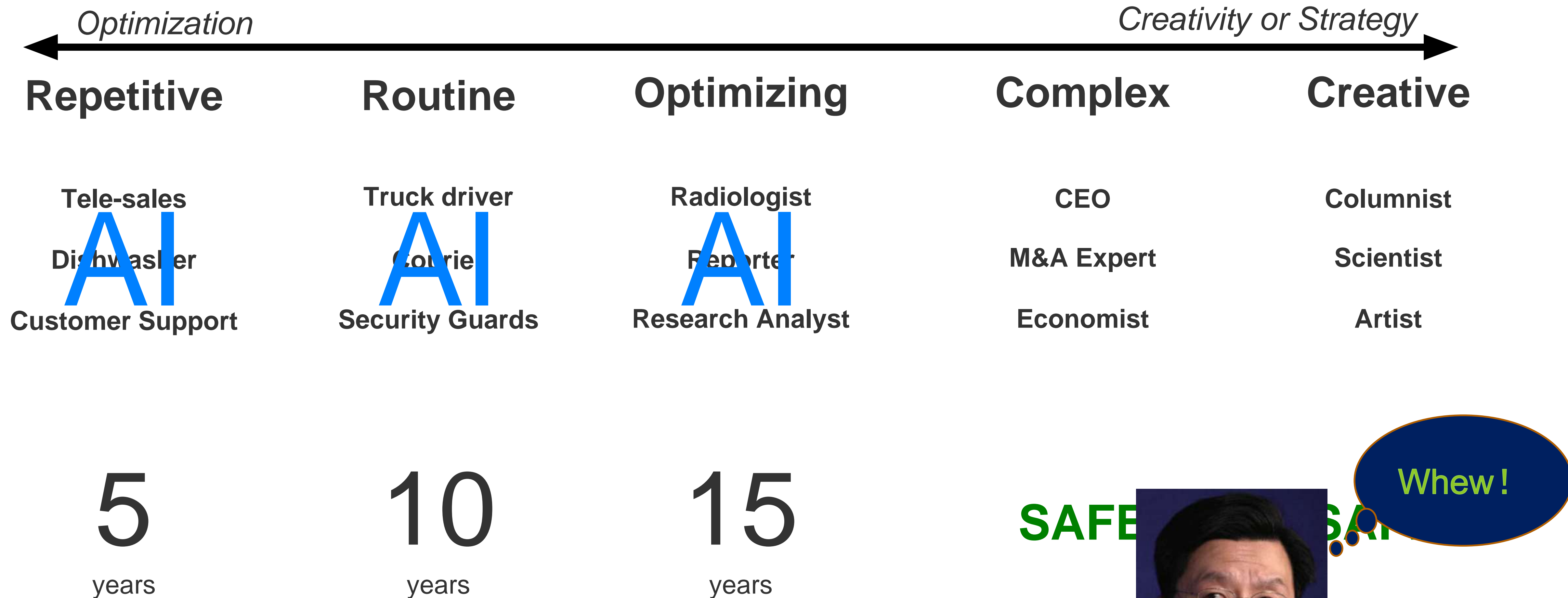


**Job Displacement**





# AI Displaces Jobs Much More Than It Creates





# The Displacement is Happening ... Starting NOW!!

White collar

Blue collar

## FINANCIAL TIMES

### Citi issues stark warning on automation of bank jobs

Investment banking leaders eye future in which machines take over 'lower-value tasks'

Citigroup's investment bank has suggested that it will shed up to half of its 20,000 technology and operations staff in the next five years, as machines supplant humans at a faster pace.





# Wave of Unemployed All Becoming “Creative”?

*Optimization*

*Creativity or Strategy*

**Complex**

**Creative**

**CEO**

**Columnist**

**M&A Expert**

**Scientist**

**Economist**

**Artist**

**SAFE**

**SAFE**



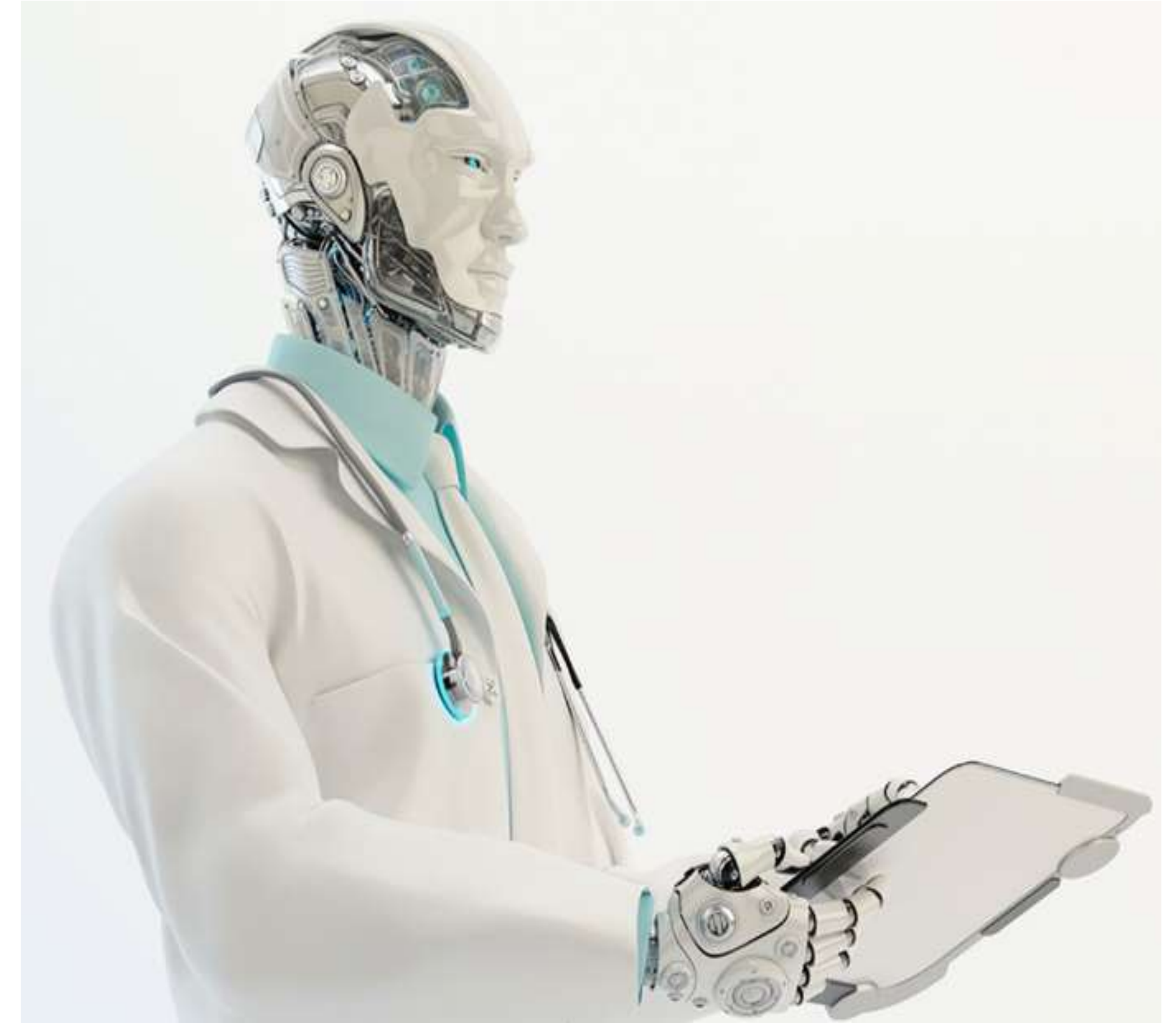


# The Two Weaknesses of AI: No Creativity & No Love!

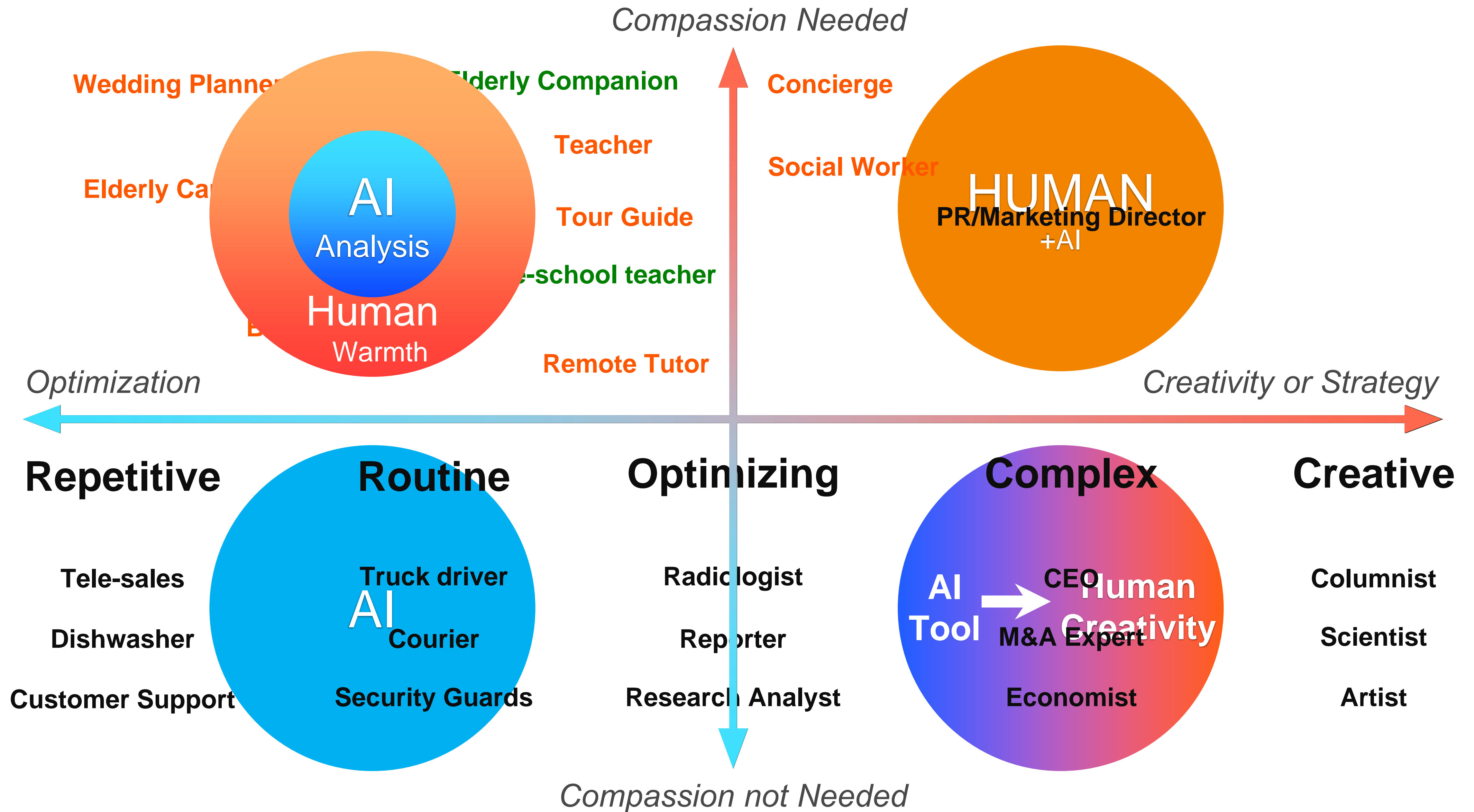
**AI is just a tool, and cannot create**



**AI has no self-awareness or love**









# AI: Era of Human Enlightenment

## 1. Be thankful of the AI Era:

- Liberate us from routine work
- Push us into thinking what makes us human

## 2. Be responsible for humanity:

- We have free will,
- and must choose to write our ending to the AI story



Conclusion: 21<sup>st</sup> Century Will be Remembered by

*The arrival of AI*

*Driven by 2 AI superpowers*

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text “AI” to 345345

To buy an autographed book,  
visit: [signedcopy.co/aibook](https://signedcopy.co/aibook)

