



Artificial Intelligence in Finance
at
Hong Kong University of Science and Technology

Perspectives on the Global Markets

- US (and global) markets picking up, but we are by no means out of the woods yet
 - Is “Unlimited QE” possible? Will QE become ineffective someday?
- Implications of the Luckin Coffee scandal
- IPO activity around the world and what it means for us
- COVID-19 and the emergence of the “New” New Economy

Top 10 IPO markets of 2019*

Rank	Stock Exchange	Funds raised (US\$ billion)	Number of IPOs Issues
1	Hong Kong mainboard	40	144
2	Nasdaq	27.5	133
3	Saudi Stock Exchange	25.6	1
4	New York Stock Exchange	23.4	38
5	Shanghai Stock Exchange	13.3	50
6	Shanghai Star Market	9.5	71
7	London Stock Exchange	7	17
8	Shenzhen Small & Medium Enterprise	4.6	25
9	Shenzhen ChiNext	4.2	52
10	Frankfurt Stock Exchange	4.2	5

Source: Refinitiv

*Until December 26, 2019

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Top 10 IPOs worldwide in 2019*

Rank	Company	Funds raised (US\$ billion)	Stock exchange
1	Saudi Aramco	25.6	Saudi Stock Exchange
2	Alibaba Group Holding	12.9	Hong Kong main board
3	Uber Technologies	8.1	New York Stock Exchange
4	Budweiser Brewing Co APAC	5.7	Hong Kong main board
5	Postal Saving Bank of China	4.7	Shanghai Stock Exchange
6	Avantor	3.3	New York Stock Exchange
7	Lyft	2.6	Nasdaq
8	Nexi	2.3	Milan Stock Exchange
9	XP	2.3	Nasdaq
10	TeamViewer	2.2	Frankfurt Stock Exchange

Source: Refinitiv

*Data as of December 26, 2019

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Top 10 IPOs in the history of Hong Kong stock market

Ranking	Company	Year	IPO fund raised (HK\$ billion)
1	AIA	2010	159.1
2	Industrial and Commercial Bank of China	2006	125
3	Alibaba	2019	101.2
4	Agriculture Bank of China	2010	93.5
5	Bank of China	2006	86.7
6	China Construction Bank Corp	2005	71.6
7	Postal Savings Bank	2016	59.2
8	China Tower Corp	2018	58.8
9	China Unicom (Hong Kong)	2010	43.6
10	Xiaomi Corporation	2018	42.6

Source: HKEX

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车辆抓拍

test

测试抓拍

测试抓拍

行人抓拍

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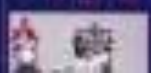
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行人:

机动车:

非机动车:

车牌:

2016-10-02 2016-10-01 2016-09-30 2016-09-29 2016-09-28 更早

入口区



入口区



购物区



服务区

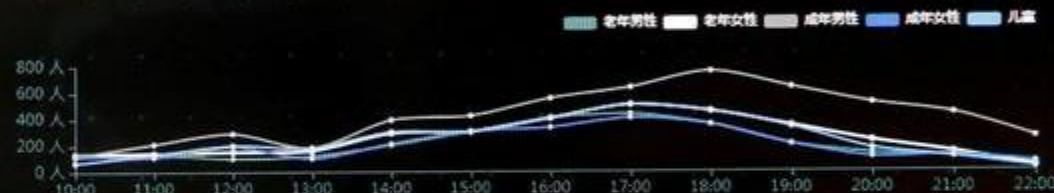


2016-10-02 2016-10-01 2016-09-30 2016-09-29 2016-09-28 更早

数据统计

	全景	入口区	购物区	服务区	餐饮区	休闲区	娱乐区
今日累计人数	3720	3720	312	484	364	2237	323
平均停留时长	105分钟	10分钟	23分钟	30分钟	40分钟	20分钟	10分钟

入口区群体分布 购物区群体分布 服务区群体分布 餐饮区群体分布 休闲区群体分布 娱乐区群体分布

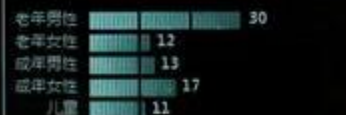


群体停留时间

入口区



购物区

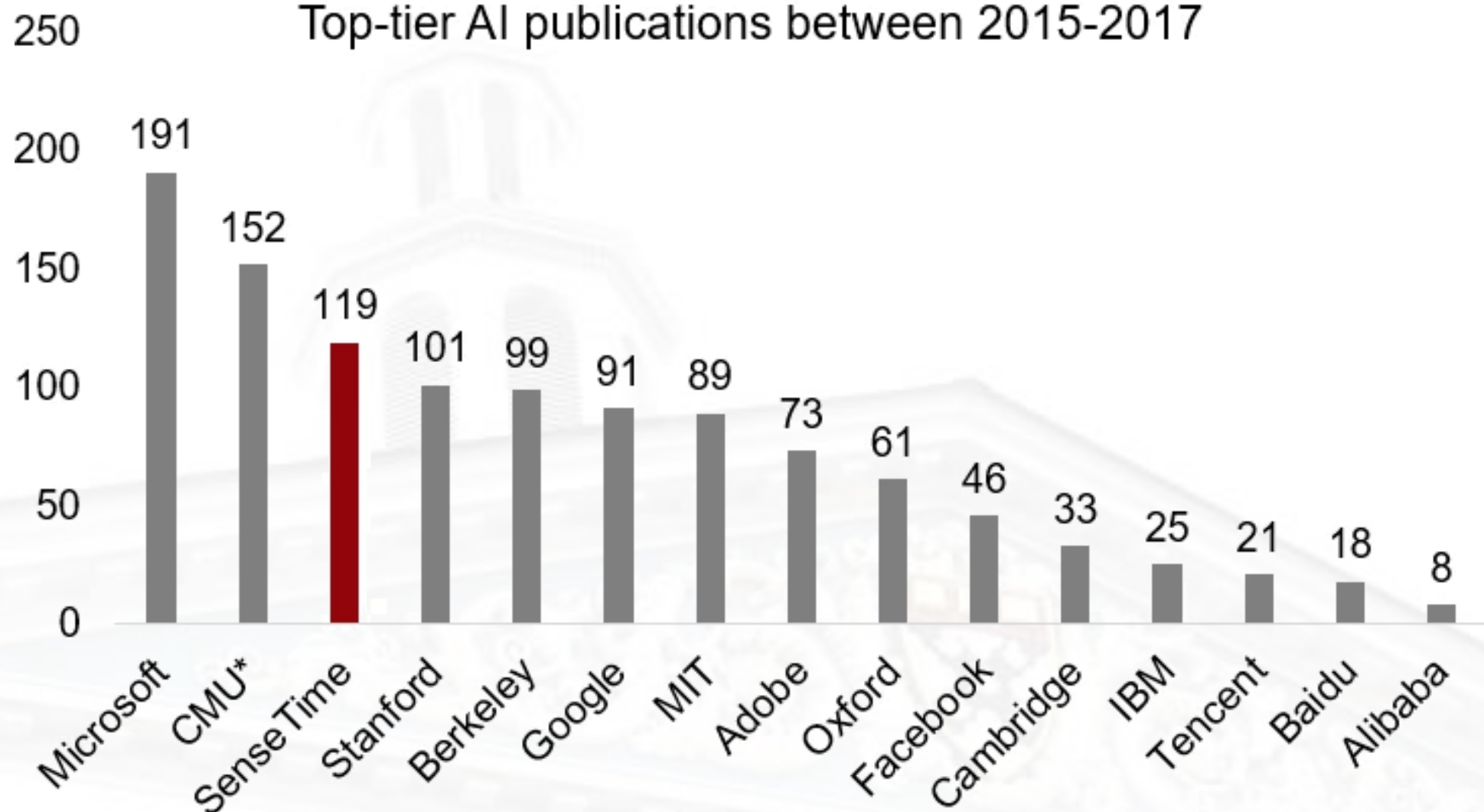


群体轨迹





Top-tier AI publications between 2015-2017

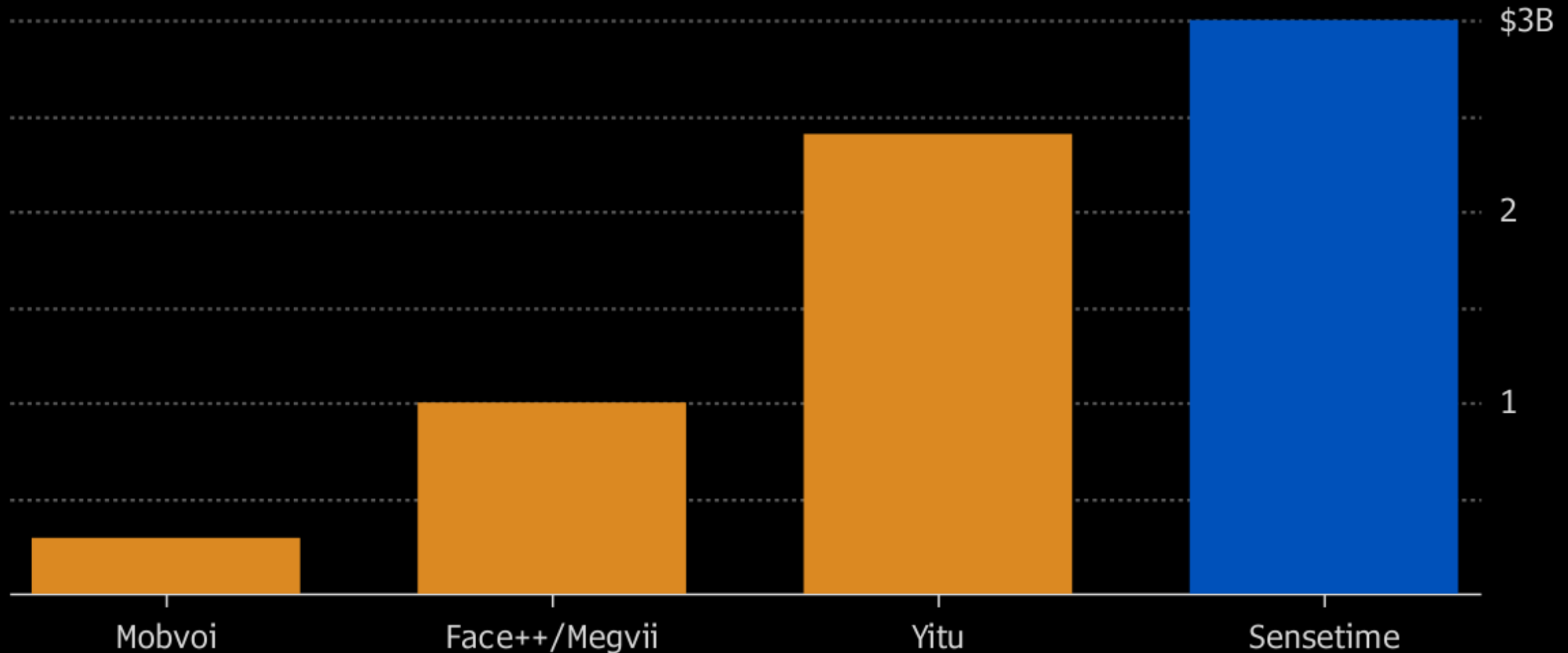


*Carnegie Mellon University

Source: CVPR, ECCV, ICCV

AI Supremacy

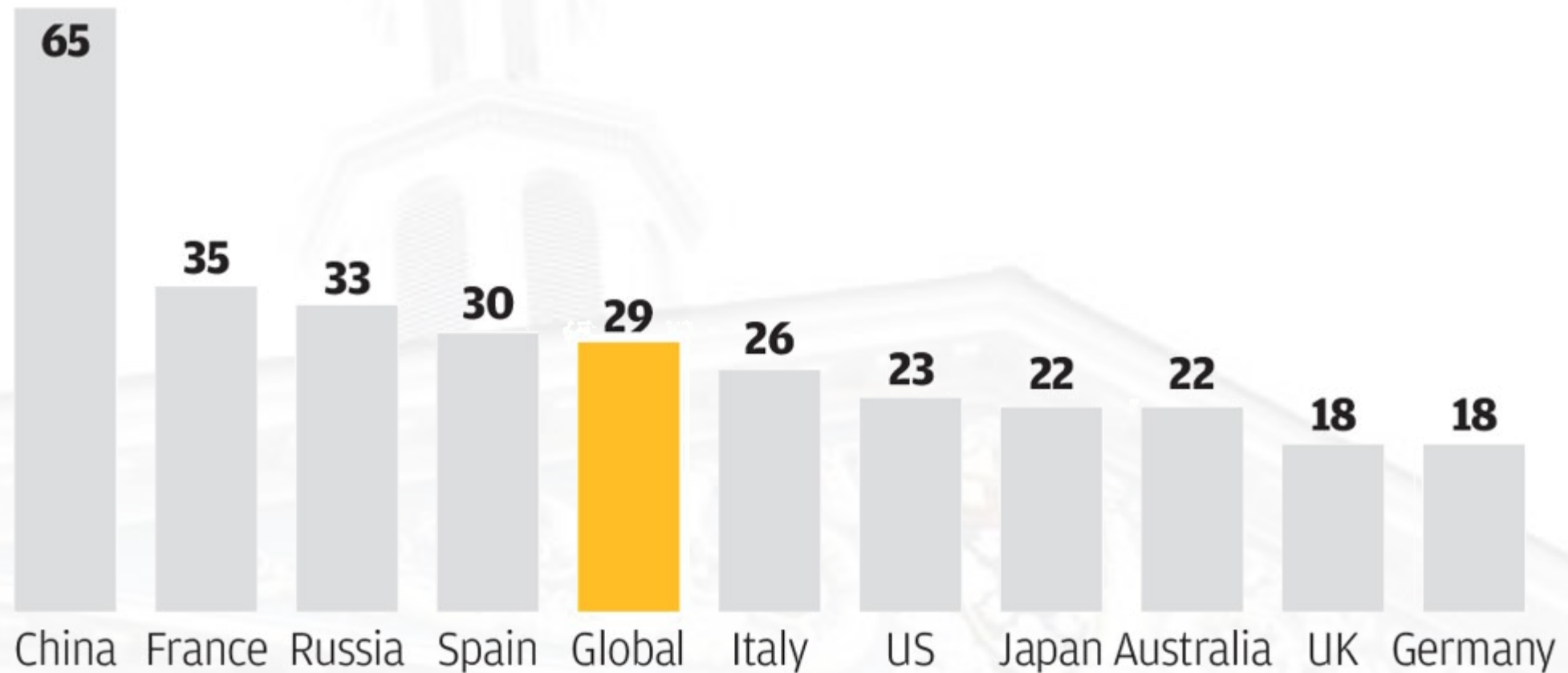
China houses some of the world's largest privately backed artificial intelligence startups



Note: Mobvoi's valuation is based on a 2015 investment

Source: CB Insights, Bloomberg

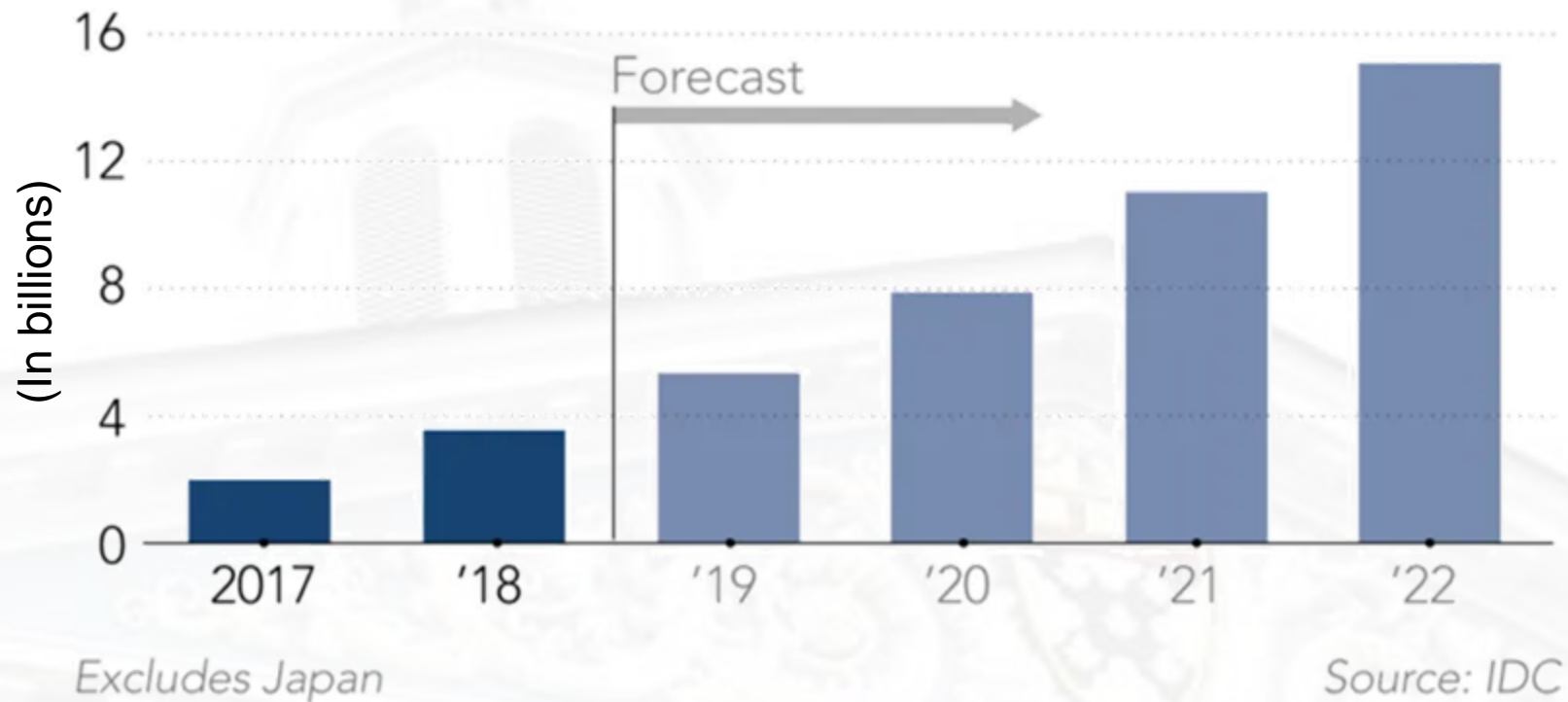
The percentage of people around the world who think AI will create more job opportunities



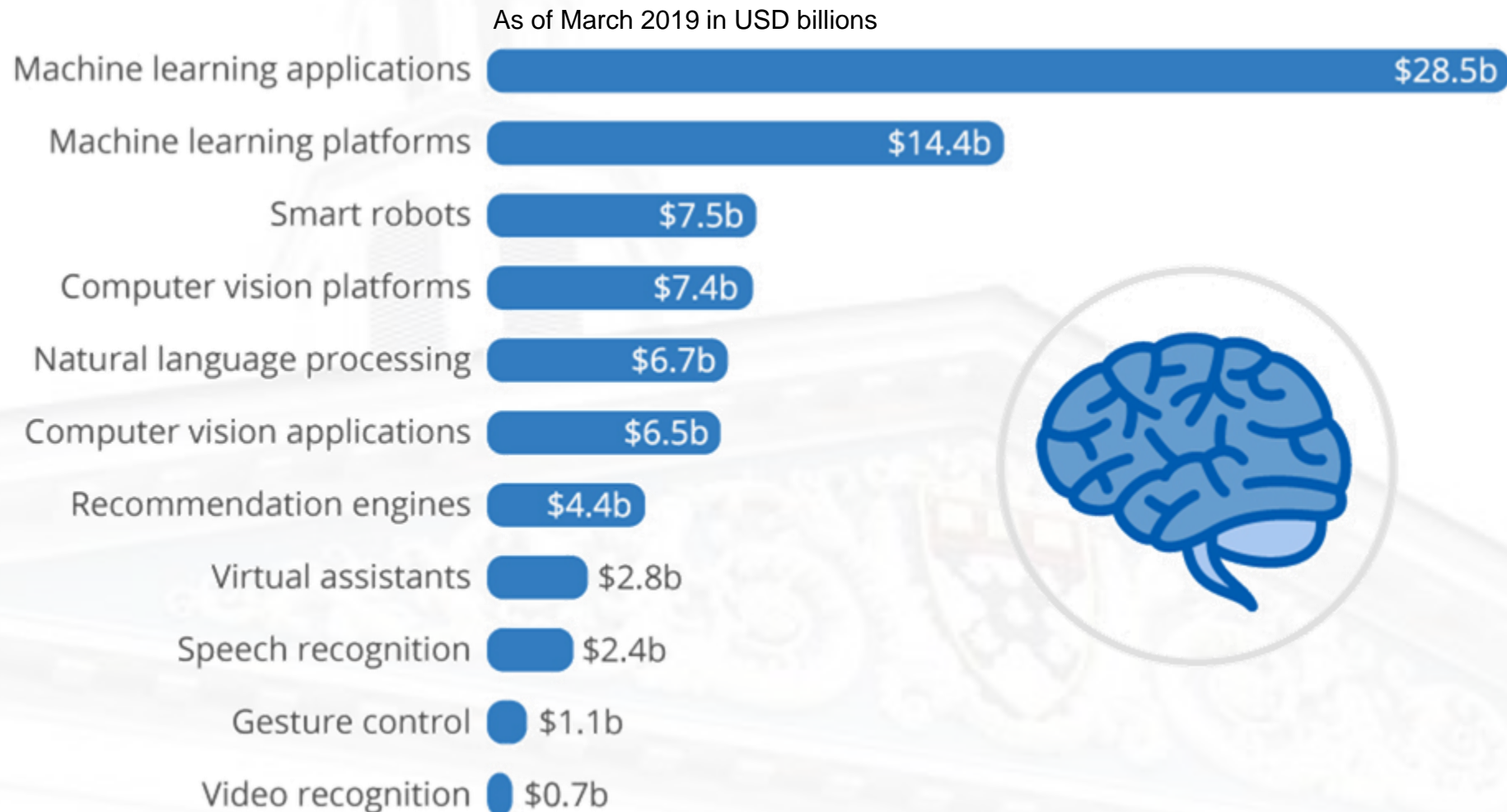
Source: Dentsu Aegis Digital Society Index

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AI expenditure surges in Asia-Pacific



Investments in machine learning applications



Source: Statista (<https://www.statista.com/chart/17966/worldwide-artificial-intelligence-funding/>).

China National AI Development Plan

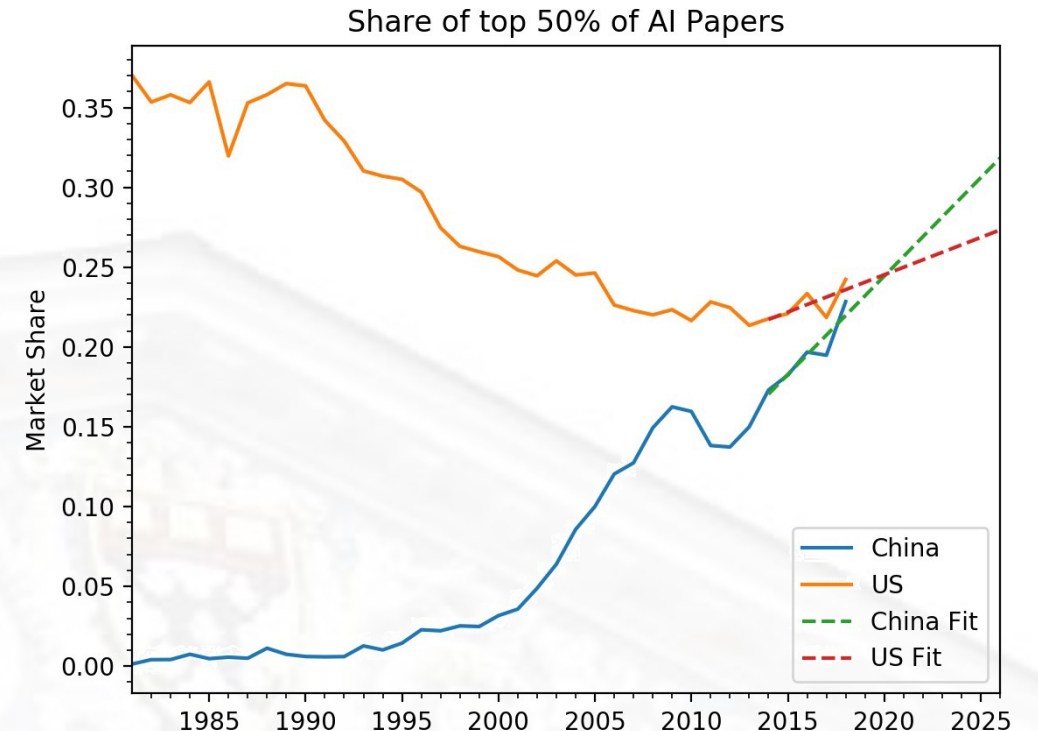
In July 2017, the Chinese government announced its **National AI Development Plan**, which included building up a highly competitive AI industry that would be worth RMB 1 trillion (USD 150.7 billion) by 2030.

According to the State Council, the broad-base guidelines for China's AI development is:

- **By 2020, catch up to global leaders in AI technology;** AI tech adoption to become a major driver for economic growth
- **By 2025, achieve major breakthroughs in fundamental research of AI,** have world-leading technology in certain areas. AI to become the key driver for industry reforms
- **By 2030, become a world leading power in AI** on both fundamental research and technology application front. AI to build intelligent economy/society that lay out the foundation for China to become an economic leader

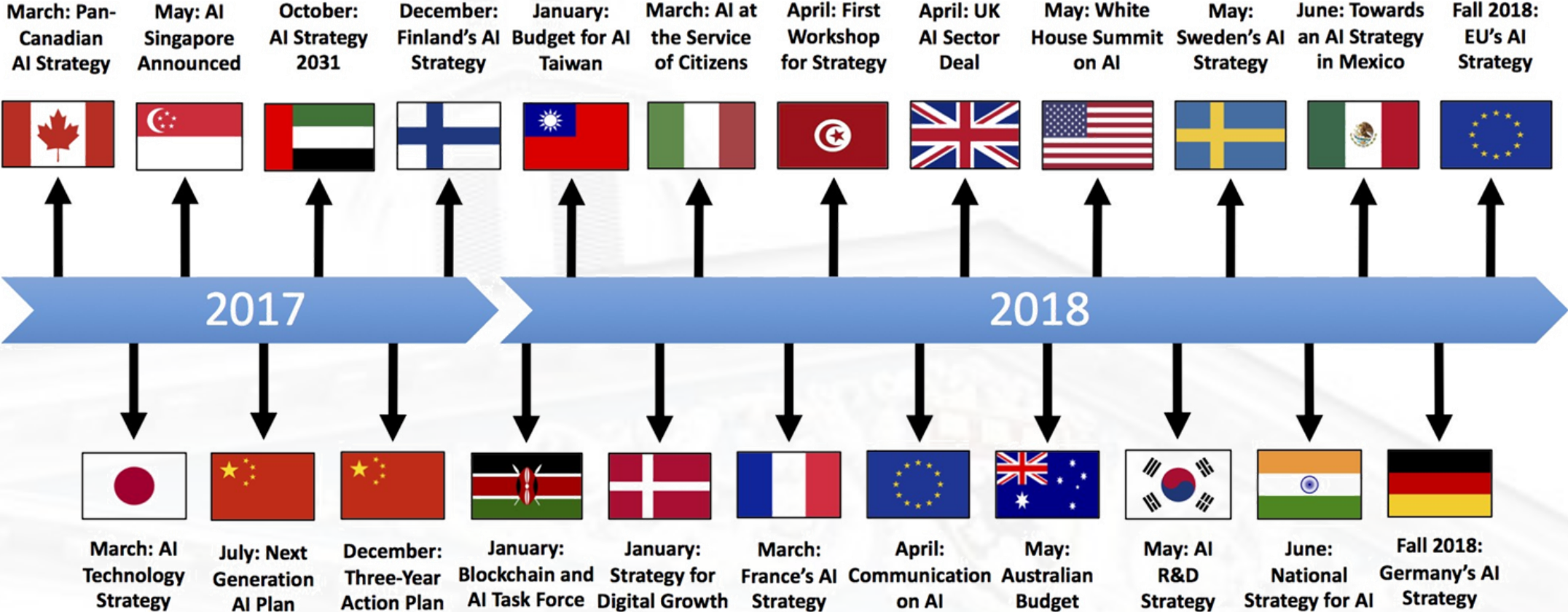
China AI research capability rivaling the US

- In 2017, China announced plans to become the **world leader in AI by 2030**
- An analysis of over 2 million academic AI papers published through the end of 2018 shows that **China has already surpassed the US in the number of published AI papers**
- If current trends continue, China is poised to overtake the US in the most-cited 50% of papers in 2019, the most-cited 10% of papers in 2020, and 1% of most-cited papers by 2025¹



Note: 1. Citation counts are a lagging indicator of impact, so the analysis may understate the rising impact of AI research originating in China.
Source: Allen Institute for Artificial Intelligence (<https://medium.com/ai2-blog/china-to-overtake-us-in-ai-research-8b6b1fe30595>).

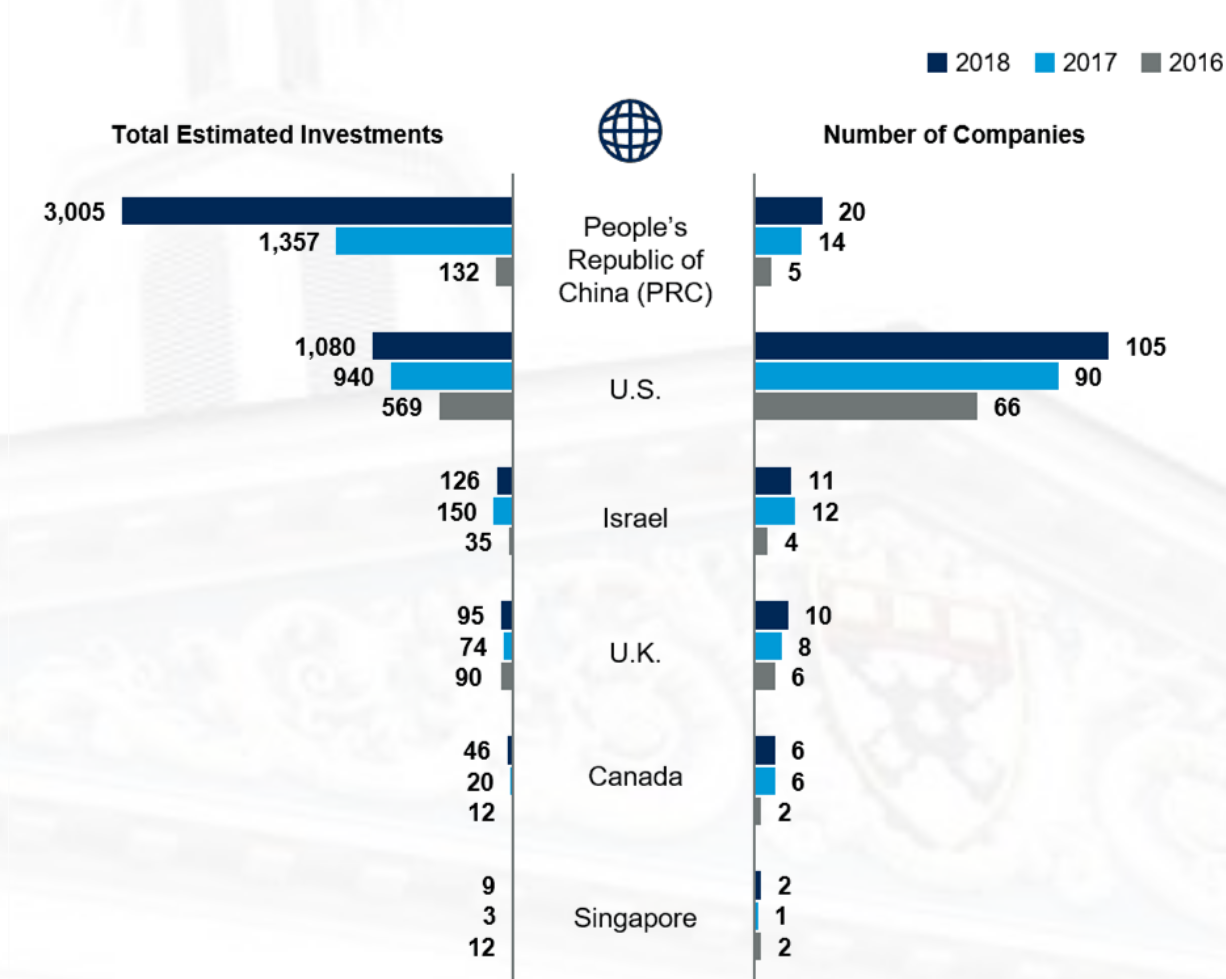
National AI Policy Frameworks



Source: Overview of National AI Strategies (<https://medium.com/politics-ai/an-overview-of-national-ai-strategies-2a70ec6edfd>).

Winner takes all in China computer vision market

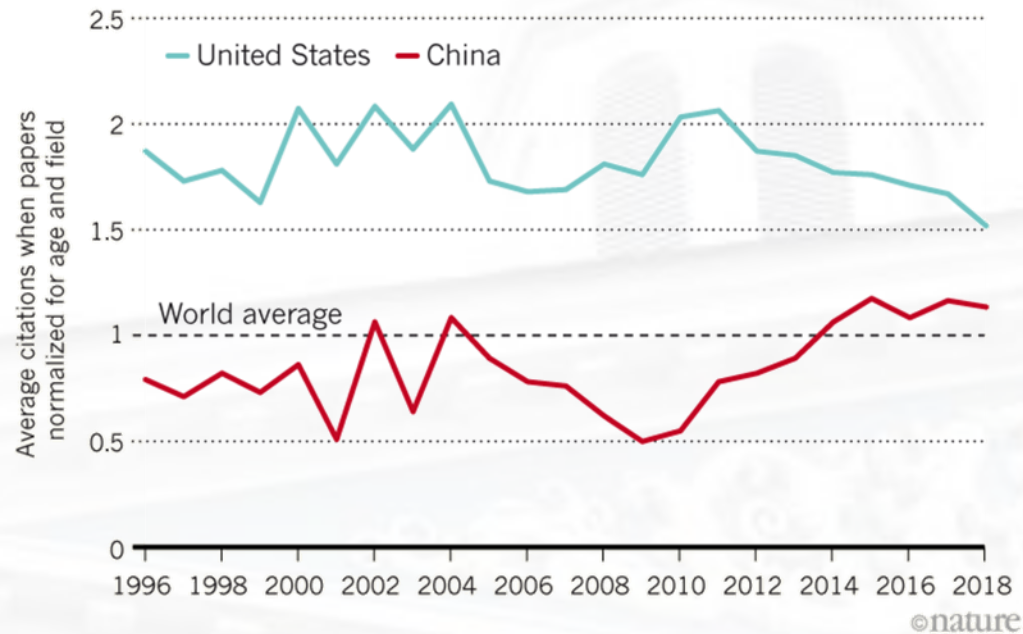
Computer Vision Technology Investment Trends by Geography, Total Estimated Investment (in Millions of Dollars), and Number of Companies



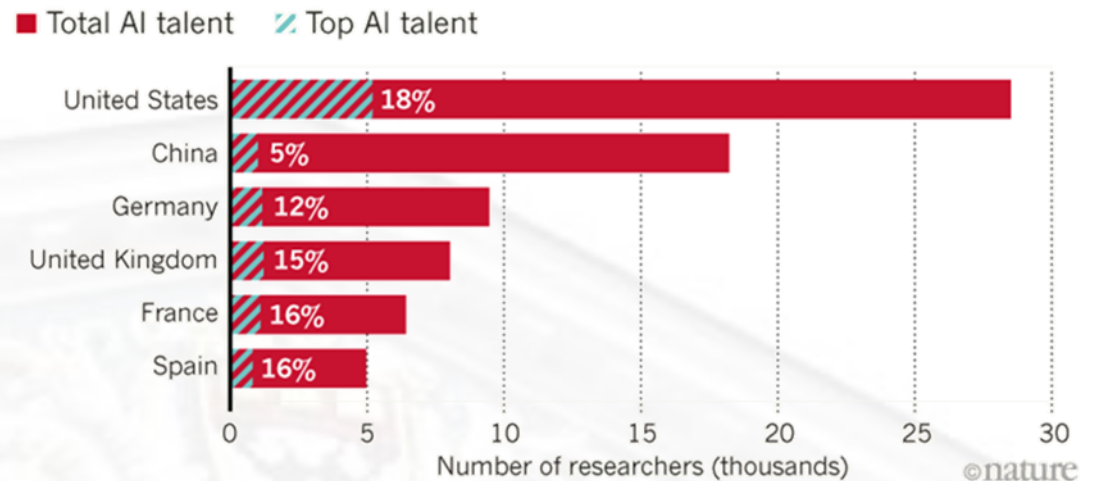
Source: Gartner (December 2019) (<https://which-50.com/china-is-dominating-computer-vision-ai-venture-capital-investment/>).

A global talent war on AI

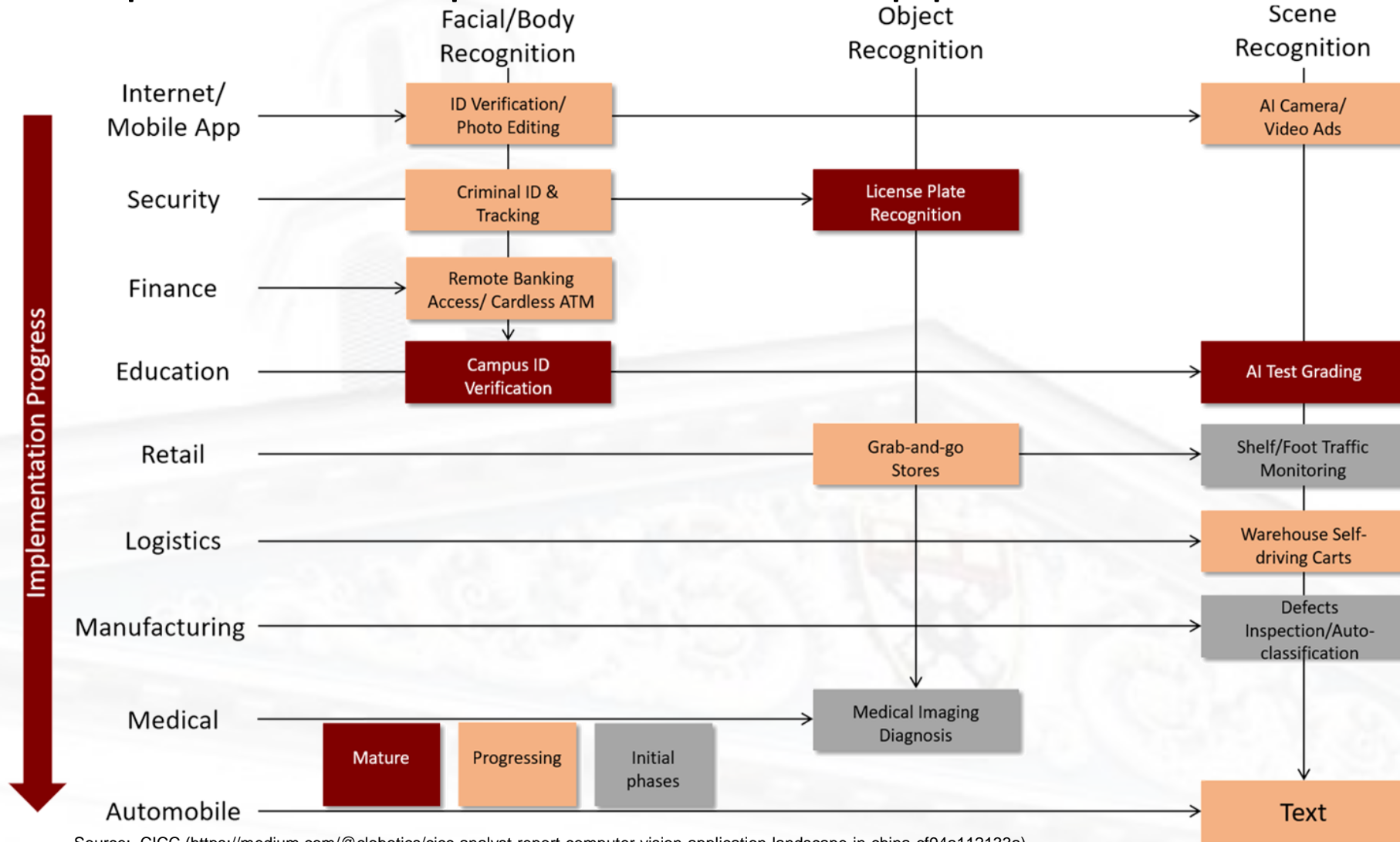
Average citations for AI papers by authors in China are above the world average, but lower than for papers by US authors.



China has the second-largest number of researchers who have published AI papers or been issued patents in the past decade. But the proportion of those considered to be in the top 10% of the field is smaller than in other AI-leading nations.



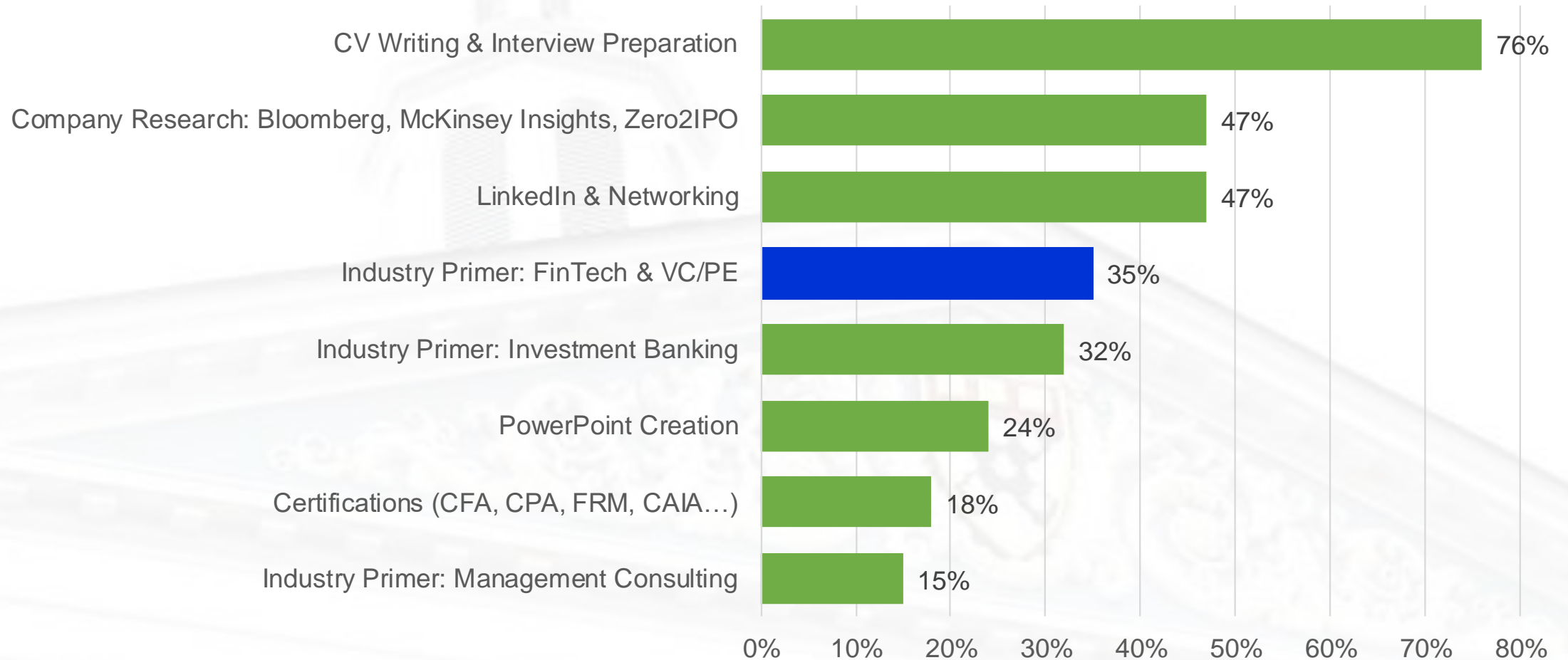
Landscape of Computer Vision Applications in China



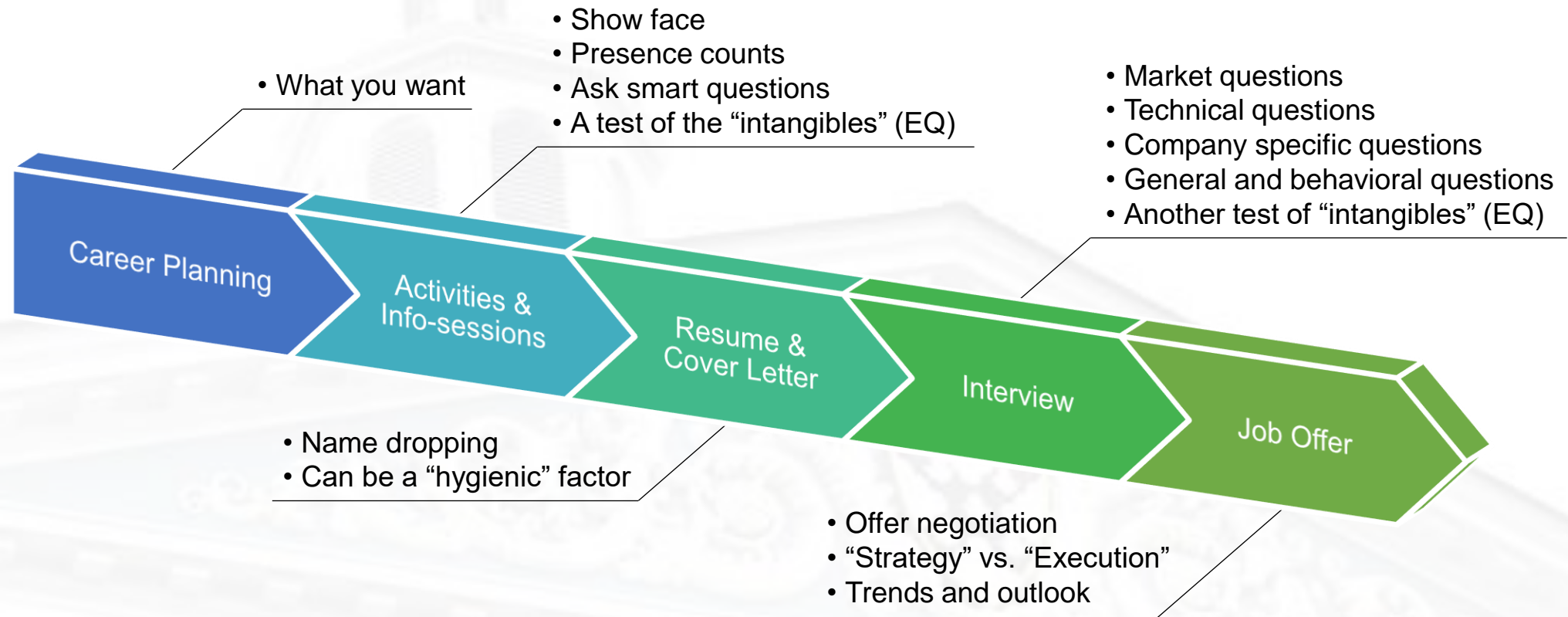
Source: CICC (<https://medium.com/@clobotics/cicc-analyst-report-computer-vision-application-landscape-in-china-cf94a112133a>).

Beyond the Classroom

Topics of Interest
(n = 34)



Career Roadmap & CV Clinic



Investment Banking Essentials

Academics



GPA

Classes

Exchange

Internships

Goldman Sachs

Morgan Stanley

J.P.Morgan



Technicals

- Financial Statement Analysis
- Macroeconomics
- Valuation
- Corporate Finance
- Financial Mathematics