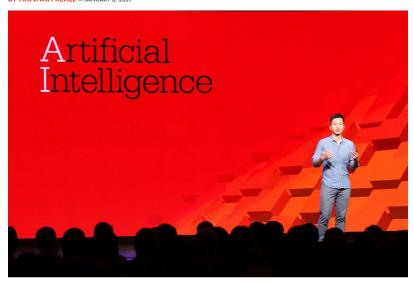
# A.I. Revs Up

The United States is ahead in artificial intelligence — but China's catching up.

BY HANNAH REALE - JANUARY 3, 2021



Artificial intelligence companies have burst onto the scene, pursuing a wide range of smart technologies. Credit: O'Reilly Conferences, Creative Commons

♦ he Hollywood version of artificial intelligence is Scarlett Johansson's disembodied, ▲ Siri-like voice <u>learning to fall in love</u>. But artificial intelligence in the real world looks more like TikTok, a blaze of algorithms calculating dance and music video preferences.

At its core, artificial intelligence is advanced machine learning, an emerging technology that encompasses natural language processing, facial recognition, robotics and autonomous vehicles. That also makes it a tool or weapon and thereby places it at the center of the increasingly contentious digital arms race now playing out between the U.S. and China. <sup>1</sup> But it's not nations that are leading the charge to innovate but businesses and entrepreneurs, in the U.S., China, Israel and elsewhere — the world's technology hotbeds.

This week, The Wire looks at the world's most valuable artificial intelligence companies to see how China and the United States match up and what the top 50 enterprises do. We also zoom in on one A.I. startup, a chip firm co-founded by a pair of talented brothers who in less than five years, with backing from the Communist Party, have built a \$9 billion enterprise.

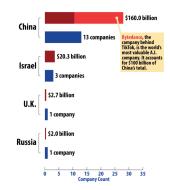
### The U.S. Is (Not Leaps and Bounds) Ahead

There's no easy way to categorize A.I. firms, since Google, Facebook, Alibaba and Baidu all run on AI capabilities. But we built a list of 50 artificial intelligence firms cited by CB Insights, Crunchbase and Pitchbook, and sorted them



by nation and market value. Roughly two-thirds of them are American. But the total value of Chinese and U.S. startups are roughly equal — due in large part to the skyrocketing value of <a href="MyteDance">ByteDance</a>, China's social media powerhouse. <sup>2</sup>

There are indicators, of course, that China is catching up to, and may even surpass, the U.S. in A.I. capabilities. In 2020, for instance, China for the first time filed more A.I. patents than the U.S. While analysts say China lags behind the United States in talent and hardware, recent reports as an overwhelming advantage in the volume and quality of data that companies can work with widely seen as the key to training and unlocking significant gains in artificial intelligence applications.



Note: The value of Pony.ai, which is coheadquartered in the United States and China, is divided equally. Data: Pitchbook, Crunchbase, CB Insights

Putting direct U.S.-China competition aside, the larger story may be how the two countries, together, are far ahead of other major powers in the race to develop artificial intelligence companies — only 5 of the top 50 are based outside of the U.S. and China. A 2019 report from the Brookings Institution said about half of the world's roughly 4,500 artificial intelligence companies are based in the United States while a third are headquartered in China. Brookings researchers cited "world-class research expertise, deep capital pools, data abundance, largely supportive policy environments, and highly competitive innovation ecosystems" as key drivers in both countries.

#### **Driving Towards Funding**

Not all A.I. is created equal — the functions and potential applications run the gamut from the mundane to the science fiction. Young A.I. companies are soaking up billions in venture capital every year in areas ranging from employee efficiency analysis, to social media algorithms, to 3D printing of rocket engines.

A pursuit of seemingly endless interest, in both the United States and China, is self-driving cars. Nine companies of the top 50 companies are devoted to developing the technology. If it became widespread, autonomous driving would have far-ranging effects, from disrupting the trucking industry with self-driving delivery trucks to creating driver-less ride-hailing services. Autonomous driving isn't just a fascination for startups — global firms <a href="like Intel">like Intel</a> and <a href="mailto:BMW">BMW</a> are getting into the field too, and the autonomous driving company Waymo is a <a href="Google spinoff">Google spinoff</a>. <sup>3</sup>

Major efforts are also underway to improve internal operations at companies, healthcare services from the patient and provider perspectives, and automate industrial processes.

	Company	Sector	HQ	Valuation
1	Bytedance	Social platforms	China	\$100b
2	Waymo	Autonomous driving	United States	\$30.8b
3	Cruise	Autonomous driving	United States	\$19.0b
4	Mobileye	Autonomous driving	Israel	\$15.3b
5	C3.ai	Al development platform	United States	\$14.1b
6	iFLYTEK	Language technologies	China	\$13.9b
7	UiPath	Robotic process automation	United States	\$10.2b
8	Tanium	Cybersecurity	United States	\$9.0b
9	Cambricon Technologies	Al chips	China	\$9.0b
10	Tempus Labs	Healthcare analytics	United States	\$8.1b
-11	SenseTime	Facial recognition	China	\$7.6b
12	Lemonade	Home & renters insurance	United States	\$7.4b
13	Argo Al	Autonomous driving	United States	\$7.3b
14	Automation Anywhere	Robotic process automation	United States	\$6.8b
15	Pony.ai	Autonomous driving	China/USA	\$5.3b
16	Cloudwalk	Facial recognition	China	\$5.2b
17	UBTech	Humanoid robots	China	\$5.0b
18	Cloudera	Data cloud platform	United States	\$4.0b
19	Uber Advanced Technologies	Autonomous driving	United States	\$4.0b
20	Nuro	Autonomous driving	United States	\$4.0b
21	Megvii	Facial recognition	China	\$4.0b
22	Scale Al	Al training platform	United States	\$3.5b
23	Aurora	Autonomous driving	United States	\$3.1b
24	SentinelOne	Cybersecurity	United States	\$3.0b
25	Infibond	Emotion replication	Israel	\$3.0b

	Company	Sector	HQ	Valuation
26	Horizon Robotics	Al chips	China	\$3.0b
27	Upstart	Money-lending platform	United States	\$2.8b
28	DataRobot	Al model development	United States	\$2.8b
29	Graphcore	Al processors	United Kingdom	\$2.8b
30	Indigo Agriculture	Crop yield analytics	United States	\$2.7b
31	SambaNova Systems	Al training platform	United States	\$2.5b
32	Faire	Retail inventory manager	United States	\$2.5b
33	Uptake Technologies	Predictive analytics platform	United States	\$2.3b
34	Relativity Space	3D-printed rockets	United States	\$2.3b
35	Gong	Sales call analytics	United States	\$2.2b
36	Checkr	Background checks	United States	\$2.2b
37	Yitu	Facial recognition	China	\$2.1b
38	Flatiron	Healthcare data analytics	United States	\$2.1b
39	Zymergen	Genomic analysis	United States	\$2.1b
40	Habana Labs	Semiconductors	Israel	\$2.0b
41	ABBYY	Language analysis	Russia	\$2.0b
42	4Paradigm	Al development platform	China	\$2.0b
43	ThoughtSpot	Large-scale data analytics	United States	\$2.0b
44	Anduril	Defense technology	United States	\$1.9b
45	Cerebras Systems	Al chips	United States	\$1.7b
46	Dataminr	Social media analytics	United States	\$1.6b
47	XANT	Sales engagement platform	United States	\$1.6b
48	Olive	Healthcare task automater	United States	\$1.5b
49	Inspur Cloud	Cloud management	China	\$1.4b
50	AIWAYS	Autonomous driving	China	\$1.4b

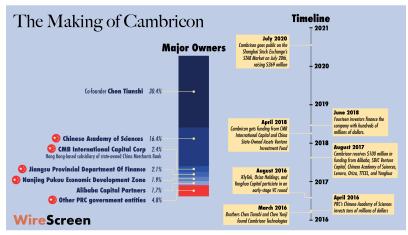
Top 50 A.I. companies by valuation or market capitalization. Pony. Al has headquarters in both Fremont, California, and Guangzhou, China. Data: Pitchbook, Crunchbase, CB Insights

# The Brothers Who Turned Chips Into Billions

Cambricon Technologies falls into another lucrative sub-category: A.I. tech that supports other A.I. tech. Cambricon's smart chips are more efficient processors, cutting down on the amount of power needed for machine learning and artificial intelligence—related endeavors. Several other top-50 companies, like Scale AI, Horizon Robotics, and Graphcore, all trade in supporting the development or operation of artificial intelligence ventures.

Major funds and ownership stakes are tied to the Chinese government. Founding brothers Chen Tianshi and Chen Yunji <sup>4</sup> studied at one of China's elite science and technology universities, and then joined the Chinese Academy of Sciences (CAS), a government research institute, before founding Cambricon. Just weeks after starting their endeavor, CAS gave the startup a seed grant worth several million dollars.

In fewer than five years, Cambricon has gone from a startup to a company that sells to Huawei and is now listed on the Shanghai Stock Exchange's STAR Market. Its market cap is now more than \$9 billion.



Cambricon Technologies has quickly emerged as a big player in the world of A.I. chips. Credit: WireScreen, S&P's CapitallQ, Pitchbook, news reports



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#### COVER STORY



### **Pole Position**

#### BY EYCK FREYMANN

In public, Chinese diplomats and climate negotiators deny that they see any link between climate change and geopolitics. But there is a deeply cynical consensus within China's academic and policy communities that climate change creates geopolitical opportunities that China can exploit — and must exploit before its rivals do. Greenland was the proof of concept for this strategy. And it caught the U.S. flat-footed.

#### THE BIG PICTURE



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