

Can US AI Programs Keep up with China's?

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The U.S. government has showered a lot of attention, summitry, bureaucracy and now, 10-digit dollar figures on artificial intelligence research in the interest of stimulating innovation and staying a step ahead of the hard-charging Chinese and the best efforts of other countries. But in light of that competition and AI's seismic potential, will it be enough?

Discussions about AI's importance to the future have been common for a while among both public and private sector leaders, but the government lately has begun to move it to the front burner. The White House in May held a much ballyhooed [AI Summit](#), with leaders in government, business, academia and research laboratories, to talk about AI R&D, building an AI workforce and other issues such as

regulatory restrictions. The Defense Department, meanwhile, in June launched its [Joint Artificial Intelligence Center](#), which will oversee about 600 current military AI projects while leaving the door open for more.

And the Pentagon's lead research arm, the Defense Advanced Research Projects Agency, last week put a big chunk of hard currency into the mix, announcing a \$2 billion, multiyear program called [AI Next](#) to fund development of "third wave" AI technologies by identifying and investing in innovative projects.

As reassuring as it may be to see U.S. leaders wake up to AI's potential — for good and ill — the competition isn't sleeping either, and may even have certain advantages.

Competition Pumps Up

China, of course, is the big kid in this playground. The People's Republic has made no secret of its [desire to own the game](#), laying plans to build its AI program into a \$1 trillion industry by 2030, using a mix of government and private money. Among its recent investments are a \$5 billion fund to back AI development projects and \$2.1 billion being sunk into a technology park to foster innovation. On the private side, investors put \$4.9 billion into some 200 Chinese startups in 2017, according to a report in August from [ABI Research](#).

And that money's not just coming from within China. Another report, from [CB Insights](#), found Chinese startups attracted nearly half of all global investments in AI during 2017, while U.S. startups drew about 38 percent of the total, marking the first time China has outpaced the United States.

And while China's mix of public and private capital might seem similar to the U.S. approach, the country also has an extremely business-friendly regulatory environment. Kai-Fu Lee, a leading AI researcher and founder of Sinovation Ventures, noted the "unparalleled government support" China's companies have in [an extensive paper](#) he wrote with Paul Triolo of the Eurasia Group.

Lee, also a former Microsoft and Google executive, said China is already leapfrogging the United States in some areas of AI, such as "Perception AI," which covers smartphones, face recognition and voice recognition.

Aside from its own investments, China also is perfectly happy to let the United

States and others do some of the heavy lifting for it, having become adept at [stealing intellectual property](#) in what former National Security Agency Director Keith Alexander called the “[greatest transfer of wealth in history](#).” China’s intellectual property thefts have run the gamut from wind turbines and smartphone technology to designs for the [F-22 Raptor and the F-35](#) Joint Strike Fighter aircraft, and even the secret chemical formula for making the [stuffing for Oreo cookies](#). When it comes to cyber espionage, nothing is sacred. Hefty U.S. tariffs imposed on China came largely in [response to IP thefts](#), but whether the nation stops the practice remains to be seen.

Other countries also are looking to get into the game. France earlier this year said it would put about [\\$1.85 billion of public money](#) into AI over the next four years. India is planning to carve out its [own niche in AI](#), particularly within the social sector, and says it wants to get there by [following China’s model](#). The United Kingdom is [courting billions](#) in investments for its own AI industry. Russia, meanwhile, isn’t talking about investments of the size of China’s, but it has established a [national program](#) that includes an AI and Big Data consortium, a state system for AI training and education, and plans for a city-sized “technopolis” to foster innovation.

Not All Doom and Gloom

The U.S. isn’t ready to concede AI dominance, as recent events indicate, but it might also be working within constraints some other countries don’t face. Aside from a few regulatory restrictions, there could be the matter of good conscience, at least if it listens to voices in industry and academia who want to ensure that AI doesn’t trample privacy or civil rights, or start calling the shots on whom to attack and when.

Ethics is becoming an [increasingly hot topic](#) with regard to AI, with efforts underway to ensure ethical machine behavior from the programming level on up the chain. After the White House’s AI Summit earlier this year, several groups of [industry and academic experts took issue](#) with the summit’s limited focus, pointing out that it did not address issues such as ethics, transparency, and accountability. The Rand Corp., a nonprofit global policy think tank that has advised the U.S. military for 70 years, warned in a paper earlier this year that unrestrained use of military AI could [lead to nuclear war](#) by 2040.

But for all of complicating factors involved in developing AI, the U.S. still has a lot

going for it in the public and private sectors. Sinovation's Lee, for example, estimates Google alone has half of the world's top 100 AI scientists. DARPA also has a [pretty good track record](#) with seminal technologies, having invented the internet and initiated the satellite constellation that would become the GPS, to name two. U.S. efforts currently underway are looking to combine the best efforts of both sectors.

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