Pay to Play: Increase Federal AI Research

By “Coach Vance” Trefethen

***Resolved: The United States federal government substantially reform the use of Artificial Intelligence technology***

Case Summary: This plan massively increases federal funding for AI research and development (R&D) to $8 billion in defense and $32 billion in non-defense funding.

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Pay to Play: Increase Federal AI R&D Budget

The book of Joshua[[1]](#footnote-1) in the Bible describes a group afraid to attack their enemies because the bad guys had the technological advantage of possessing “iron chariots.” New technology creates fear and intimidation, and leads to certain defeat if you cannot match or exceed it. Since iron chariots we’ve come through advances like machine guns, tanks, jet aircraft, and nuclear weapons, all of which revolutionized military planning and strategic calculations. Today Artificial Intelligence is the next big thing that we must have to maintain US global leadership. Please join us in affirming that: The United States Federal Government should substantially reform the use of artificial intelligence technology.

OBSERVATION 1. DEFINITIONS

Substantial

Merriam Webster Online Dictionary copyright 2021. <https://www.merriam-webster.com/dictionary/substantially> (accessed 28 May 2021)

**:**considerable in quantity **:**significantly great

Reform

Merriam Webster Online Dictionary copyright 2021 <https://www.merriam-webster.com/dictionary/reform> (accessed 28 May 2021)

**:**to put or change into an improved form or condition

Artificial Intelligence or “AI”

Merriam Webster Online Dictionary copyright 2021. <https://www.merriam-webster.com/dictionary/artificial%20intelligence> (accessed 28 May 2021)

**:**the capability of a machine to imitate intelligent human behavior

OBSERVATION 2. INHERENCY, the structure of the Status Quo. Some key facts:

FACT 1. Current budget. Status Quo federal budget for AI Research & Development is $6 billion

**In an article breathlessly describing the expansion of federal AI R&D, Jon Harper with NATIONAL DEFENSE magazine in Feb. 2021 wrote QUOTE:**

Jon Harper 2021. (journalist) 10 Feb 2021 “Federal AI Spending to Top $6 Billion” NATIONAL DEFENSE <https://www.nationaldefensemagazine.org/articles/2021/2/10/federal-ai-spending-to-top-$6-billion> (accessed 19 June 2021)

Washington is projected to invest more than $6 billion in AI-related research-and-development projects in 2021, while contract obligations are on pace to grow nearly 50 percent, to $3 billion, relative to 2020, according to the forecast. Civilian agencies as well as the Defense Department are interested in the technology.

**END QUOTE. But that leads us to…**

FACT 2. Woefully inadequate. While $6 billion sounds like a lot, we actually need 6 and a half times more

American Institute of Physics 2021. (membership corporation of physical science societies with an annual budget exceeding $25M and serving a combined membership of approximately 120,000 scientists, engineers and students) 5 Mar 2021 “AI Advocates Seek Vast Expansion of New National Initiative” <https://www.aip.org/fyi/2021/ai-advocates-seek-vast-expansion-new-national-initiative>

A new report urges the federal government to dramatically scale up its spending on artificial intelligence and other emerging technologies to tens of billions of dollars annually, well beyond the levels targeted by the recently enacted National Artificial Intelligence Initiative Act. The National Security Commission on Artificial Intelligence released a [750-page report](https://www.nscai.gov/2021-final-report/) this week that urges the U.S. to bolster its capabilities in AI, including by doubling annual nondefense R&D spending on it every year until it reaches $32 billion in 2026. The commission proposes that a portion of this funding be provided through a new [“National Technology Foundation”](https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf#page=190) that would complement the efforts of existing agencies such as the National Science Foundation and the Defense Advanced Research Projects Agency. It also calls for Congress to increase the Department of Defense’s annual budget for AI R&D to $8 billion by 2025, up from the current level of about $1.5 billion.

OBSERVATION 3. The PLAN implemented by Congress, the President and the Secretary of Defense

1. Defense R&D. Congress allocates an additional $8 billion to the Defense Dept. budget for AI R&D. Funding to be overseen by the Joint Artificial Intelligence Center. A high level steering committee oversees allocation and priorities for AI development and adds an AI technology annex to the National Defense Strategy.

2. Non-Defense R&D. Congress creates the National Technology Foundation and allocates an additional $32 billion for non-defense AI research to the NTF, Dept of Energy, National Science Foundation, National Institutes of Health, and National Institute of Standards and Technology  
3. Goals. The Secretary of Defense sets readiness goals for AI deployment priorities to be completed over the next 4 years.  
4. Funding is $40 billion/year from increased enforcement of existing tax laws and general federal revenues, and adjusted for inflation every subsequent year.  
5. Enforcement through the military chain of command and federal civilian workforce disciplinary rules. Violators receive same sanctions as for existing violations of similar laws.  
6. Timeline: Plan is phased in over the next 5 years starting at the beginning of the next fiscal year, Oct 1.   
7. All Affirmative speeches may clarify.

OBSERVATION 4. ADVANTAGES

ADVANTAGE 1. Win the geopolitical competition with China

A. Defense R&D. We can catch up with China if we increase the budget and accelerate the JAIC

Robert O. Work 2021. (Vice Chair, National Security Commission on Artificial Intelligence) 9 Apr 2021 Honorable Robert O. Work, Vice Chair, National Security Commission on Artificial Intelligence, and Marine Corps Lieutenant General Michael S. Groen, Director, Joint Artificial Intelligence Center Hold a Press Briefing on Artificial Intelligence <https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2567848/honorable-robert-o-work-vice-chair-national-security-commission-on-artificial-i/>

We recommended that you designate the JAIC [Defense Dept. Joint Artificial Intelligence Center] as the AI. accelerator. We actually assessed that China is a little bit ahead of the United States in fielding applications at scale. We can catch up with them and we believe that JAIC is the logical place in the department to really be the accelerator for AI. applications at scale. The department has to increase its S&T (science and technology) spending on AI and all of R&D (research and development). We think it should be a minimum of 3.4 percent of the budget and we recommend that the department spend about $8 billion on AI R&D annually. That will allow us, we think, to cover down on all of the key research areas.

B. The Impacts: AI competition with China is vital because it impacts war, national security, human rights, and the economy,

Johnny Ball 2020. (Special Projects writer for Spotlight and THE NEW STATESMAN) 4 Sept 2020 “The geopolitics of artificial intelligence” <https://www.newstatesman.com/spotlight/emerging-technologies/2020/09/geopolitics-artificial-intelligence> (accessed 8 June 2021)

In 2019, an interim report from the US’s National Security Commission on Artificial Intelligence, chaired by the former Google chief executive Eric Schmidt, articulated this struggle for hegemony. “AI cannot be separated from emerging strategic competition with China and developments in the broader geopolitical landscape,” the report said. It went on to detail China’s deployment of AI to “advance an autocratic agenda” and “commit human rights violations”, warning that AI technology could be used to launch disinformation campaigns, wage war and threaten critical national infrastructure. “The future of our national security and economy are at stake,” it said.

C. The Really Big Impact: The winner rules the world

Abishur Prakash 2019 (works at the Center for Innovating the Future, a strategy innovation lab located in Toronto) SCIENTIFIC AMERICAN 11 July 2019 “The Geopolitics of Artificial Intelligence” <https://blogs.scientificamerican.com/observations/the-geopolitics-of-artificial-intelligence/>

This is not a cold war. It is an algorithmic war. Except this battle is not just between the U.S. and China. There are also countries like India, Russia, Israel and Japan, each of whom have their own ambition and vision. The U.S. and China. though, stand to lose and gain the most. For the U.S., AI could lead to a de-Americanized world. For China, AI could truly ring in the Chinese century. Perhaps Russian President Vladmir Putin’s words are more important than ever before, when he warned that the country that controls AI will control the world.

ADVANTAGE 2. Economic growth

A. Non-Defense R&D. It allows US researchers to drive innovation and applications of AI

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021) (Note: after the quoted part, it recommends spending 1% of total US GDP on R&D. Total US GDP is $21.4 trillion, of which 1% would be $214.3 billion. In context this 1% recommendation is talking about “all” R&D (examples: medical, nuclear, clean energy, space flight, etc.) not just AI, so it does not affect the plan mandates. $40 billion is their recommendation for AI.)

A bold, integrated push for long-term investments in AI R&D will foster nationwide AI innovation and drive breakthroughs. An infusion of sustained resources, guided by a comprehensive strategy and distributed through a diversity of mechanisms, will enable U.S. researchers to push the boundaries of the field by supporting a wide range of AI approaches and novel applications of AI to other fields. Specifically, the United States should:  
 • Establish a National Technology Foundation (NTF). A new, independent organization would complement successful existing organizations, such as the NSF and DARPA, by providing the means to more aggressively move science into engineering. [**END QUOTE**] The NTF would drive technology progress at a national level by focusing on generating value at intermediate levels of technical maturity, prioritizing use-inspired concepts, establishing infrastructure for experimentation and testing, and supporting commercialization of successful outcomes. This requires an organization that is structured to accept higher levels of risk and empowered to make big bets on innovative ideas and people. **[THEY GO ON LATER IN THE SAME CONTEXT, QUOTE**:]  
 • Increase federal funding for non-defense AI R&D at compounding levels, doubling annually to reach $32 billion per year by Fiscal Year 2026. This would bring AI spending to a level near to federal spending on biomedical research. Overall, the government should spend at least 1% of GDP on R&D to reinforce a base of innovation across scientific fields. Additional funding should strengthen basic and applied research, expand fellowship programs, support research infrastructure, and cover several agencies, with an emphasis on:   
o National Technology Foundation (proposed)   
o Department of Energy   
o National Science Foundation   
o National Institutes of Health   
o National Institute of Standards and Technology   
o National Aeronautics and Space Administration

B. The Impact: Economic growth, higher wages and new jobs

International Telecommunications Union 2018 (This research was conducted by Jacques Bughin, McKinsey Global Institute Director and Senior Partner of McKinsey & Company, Jeongmin Seong, Senior fellow, MGI, and MGI’s expert members ) Assessing the Economic Impact of Artificial Intelligence, Sept 2018 <https://www.itu.int/dms_pub/itu-s/opb/gen/S-GEN-ISSUEPAPER-2018-1-PDF-E.pdf> (accessed 19 June 2021)

As AI contributes to the higher productivity of economies, the increased output from efficiency gains and innovations can be passed to workers in the form of wages and to entrepreneurs and firms in the form of profits. The generation of wealth induced by AI could create spillover effects that boost economic growth. As workers’ incomes rise and they spend more, and firms reinvest their profit into operations, the incremental output can be channeled back into the economy in the form of higher consumption or more productive investment as well as jobs growth.

2A Evidence: Increase Federal AI R&D Budget

BACKGROUND

Defense Dept. budget is $715 billion

Sec. of Defense Lloyd J. Austin 2021. The Department of Defense Releases the President’s Fiscal Year 2022 Defense Budget 28 May 2021 <https://www.defense.gov/Newsroom/Releases/Release/Article/2638711/the-department-of-defense-releases-the-presidents-fiscal-year-2022-defense-budg/#:~:text=The%20Department%20of%20Defense%20Releases%20the%20President's%20Fiscal%20Year%202022%20Defense%20Budget,-May%2028%2C%202021&text=The%20Biden%2DHarris%20Administration%20today,Department%20of%20Defense%20(DOD)>.

The Biden-Harris Administration today submitted to Congress the President’s Fiscal Year (FY) 2022 Budget request of $752.9 billion for national defense, $715 billion of which is for the Department of Defense (DOD). The FY 2022 Defense Budget submission reflects President Biden’s priorities to end the “forever wars,” invest in cutting-edge capabilities for our military and national security advantage in the future, and revitalize America’s unmatched network of alliances and partnerships.

INHERENCY

U.S. government today has no comprehensive AI security strategy

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021)

While the U.S. government has released a number of documents emphasizing the importance of AI research and development—see, for example, President Trump’s executive order on AI—the U.S. lacks a comprehensive, whole-of-government plan to guide policymakers, researchers, and businesses toward a more secure U.S. future.

US government is far from being “AI ready” – we need a big new commitment

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021)

Despite exciting experimentation and a few small AI programs, the U.S. government is a long way from being “AI-ready.” The Commission’s business leaders are most frustrated by slow government progress because they know it’s possible for large institutions to adopt AI. AI integration is hard in any sector—and the national security arena poses some unique challenges. Nevertheless, committed leaders can drive change. We need those leaders in the Pentagon and across the Federal Government to build the technical infrastructure and connect ideas and experimentation to new concepts and operations.

A/T “Biden is increasing AI funding” – Still way behind what we need to compete with China

Makenzie Holland 2021 (journalist) “Biden sets stage for national AI strategy” 14 May 2021 <https://searchenterpriseai.techtarget.com/feature/Biden-sets-stage-for-national-AI-strategy> (accessed 17 June 2021) (brackets added)

The federal government's increase in AI research investment aligns with other countries like the U.K. and Germany, Deloitte's [Beena] Ammanath [executive director of the Deloitte AI Institute] said. But it's still behind the tens of billions of dollars China plans to invest in cutting-edge technology research and development, which includes a strong focus on AI. The NSCAI report said within the next decade, "China could surpass the United States as the world's AI superpower."

A/T “SQ has increased defense AI funding” – not enough, we need more to avoid an innovation deficit

Congressional Research Service 2020. (nonpartisan research agency of Congress) Artificial Intelligence and National Security, last updated 10 Nov 2020 <https://fas.org/sgp/crs/natsec/R45178.pdf> (accessed 15 June 2021)

In addition, Congress may consider the adequacy of current DOD funding levels for AI. Lieutenant General John Shanahan, the former director of the JAIC, identified funding as a barrier to future progress. Although DOD funding for AI has increased, beginning in 2018—to include the JAIC’s $1.75 billion six-year budget and the Defense Advanced Research Projects Agency’s (DARPA’s) $2 billion multiyear investment in over 20 AI programs—some experts have argued that additional DOD funding will be required to keep pace with U.S. competitors and avoid an “innovation deficit” in military technology.

A/T “Just use commercial AI, don’t reinvent it” – Commercial AI not suitable for defense needs

Congressional Research Service 2020. (nonpartisan research agency of Congress) Artificial Intelligence and National Security, last updated 10 Nov 2020 <https://fas.org/sgp/crs/natsec/R45178.pdf> (accessed 15 June 2021)

A wide variance exists in the ease of adaptability of commercial AI technology for military purposes. In some cases, the transition is relatively seamless. For example, the aforementioned aircraft maintenance algorithms, many of which were initially developed by the commercial sector, will likely require only minor data adjustments to account for differences between aircraft types. In other circumstances, significant adjustments are required due to the differences between the structured civilian environments for which the technology was initially developed and more complex combat environments. For example, commercial semiautonomous vehicles have largely been developed in and for data-rich environments with reliable GPS positions, comprehensive terrain mapping, and up-to-date information on traffic and weather conditions obtained from other networked vehicles. In contrast, the military variant of such a vehicle would need to be able to operate in locations where map data are comparatively poor and in which GPS positioning may be inoperable due to adversary jamming. Moreover, semiautonomous or autonomous military ground vehicles would likely need the ability to navigate off-road in rough terrain—a capability not inherent in most commercial vehicles.

A/T “Just use commercial AI, don’t reinvent it” – Civilian standards for safety & performance aren’t transferable to military

Congressional Research Service 2020. (nonpartisan research agency of Congress) Artificial Intelligence and National Security, last updated 10 Nov 2020 <https://fas.org/sgp/crs/natsec/R45178.pdf> (accessed 15 June 2021)

Standing DOD processes—including those related to standards of safety and performance, acquisitions, and intellectual property and data rights—present another challenge to the integration of military AI. Often, civilian and military standards of safety and performance are either not aligned or are not easily transferable. A failure rate deemed acceptable for a civilian AI application may be well outside of tolerances in a combat environment—or vice versa. In addition, a recent research study concluded that unpredictable AI failure modes will be exacerbated in complex environments, such as those found in combat. Collectively, these factors may create another barrier for the smooth transfer of commercially developed AI technology to DOD.

HARMS / SIGNIFICANCE

China has a plan to dominate AI technology and is already leading the US in investments and research

Prof. Graham Allison 2019. (Professor of Government at Harvard Univ.) 22 Dec 2019 “Is China Beating America to AI Supremacy?” <https://nationalinterest.org/feature/china-beating-america-ai-supremacy-106861> (accessed 9 June 2021)

It began with President Xi Jinping’s personal reaction to the defeat of the world’s Go champion. Declaring that this was a technology in which China had to lead, he set specific targets for 2020 and 2025 that put China on a path to dominance over AI technology and related applications by 2030. Recognizing that this would have to be led by entrepreneurial companies rather than agencies of government, he designated five companies to become China’s national champions: Baidu, Alibaba, Tencent, iFlytek and SenseTime. Twelve months after Xi’s directive, investments in Chinese AI startups had topped investments in American AI startups. By 2018, China filed 2.5 times more patents in AI technologies than the United States. And this year, China is graduating three times as many computer scientists as the United States.

China’s AI policy is about geopolitical competition and it’s a matter of grave national concern if we fall behind

Prof. Graham Allison 2019. (Professor of Government at Harvard Univ.) 22 Dec 2019 “Is China Beating America to AI Supremacy?” <https://nationalinterest.org/feature/china-beating-america-ai-supremacy-106861> (accessed 9 June 2021)

First, most Americans believe that U.S. leadership in advanced technologies is so entrenched that it is unassailable. Likewise, many in the American national security community insist that in the AI arena China can never be more than a “near-peer competitor.” Both are wrong. In fact, China stands today as a full-spectrum peer competitor of the United States in commercial and national security applications of AI. Beijing is not just trying to master AI—it is succeeding. Because AI will have as transformative an impact on commerce and national security over the next two decades as semiconductors, computers and the web have had over the past quarter century, this should be recognized as a matter of grave national concern.

China is committed to rapid AI advances that threaten the US. Any leadership we have now will be gone soon

Yasmin Tadjdeh 2020 (journalist) 30 Oct 2020 “China Threatens U.S. Primacy in Artificial Intelligence (UPDATED)” <https://www.nationaldefensemagazine.org/articles/2020/10/30/china-threatens-us-primacy-in-artificial-intelligence> (accessed 17 June 2021)

It is a statement that has been broadcasted and heard around the world: China intends to be the global leader of artificial intelligence by 2030. The country is putting its money where its mouth is, officials and analysts say, and making investments in AI that could threaten the United States and erode Washington’s advantages in the technology.  “The Chinese Communist Party recognizes the transformational power of AI,” Defense Secretary Mark Esper recently said during remarks at the Defense Department’s AI Symposium and Exposition. Beijing views the technology as a critical component to its future military and industrial power, said the Pentagon’s recently released “Military and Security Developments Involving the People’s Republic of China 2020” annual report to Congress. The country’s “Next Generation AI Development Plan” details Beijing’s strategy to employ commercial and military organizations to achieve major breakthroughs by 2025 and become the world leader by 2030, the report said. Eric Schmidt, former executive chairman and CEO of Google and the chairman of the National Security Commission on Artificial Intelligence, said the Asian power is rapidly catching up to the United States. “We’re a year or two ahead of China,” he said. “We’re not a decade ahead.”

China is ahead in many AI areas and will keep advancing to gain military power

Yasmin Tadjdeh 2020 (journalist) 30 Oct 2020 “China Threatens U.S. Primacy in Artificial Intelligence (UPDATED)” <https://www.nationaldefensemagazine.org/articles/2020/10/30/china-threatens-us-primacy-in-artificial-intelligence> (accessed 17 June 2021)

Michael Brown, director of the Pentagon’s Defense Innovation Unit, said the United States is in a “superpower marathon with China” to acquire advanced technology. There are already areas where Beijing is ahead, he said. These include facial recognition software, small drones, quantum communications, telecommunications, genetic data, cryptocurrency and more, according to his presentation slides. “Frankly, when I put this slide together, I was surprised by how many technologies China had the lead on,” Brown said. Areas where China is challenging the United States’ lead include artificial intelligence, biotechnology, pharmaceuticals, rocket launches, quantum computing, quantum sensing and supercomputing, according to his slides. According to the Pentagon’s China military power report, Beijing is pursuing a whole-of-society effort to become the worldwide leader in AI, which includes designating certain private companies as “AI Champions” to emphasize research and development in specific dual-use technologies.

Specific examples of how China is rapidly increasing AI to counter US military power projection

Yasmin Tadjdeh 2020 (journalist) 30 Oct 2020 “China Threatens U.S. Primacy in Artificial Intelligence (UPDATED)” <https://www.nationaldefensemagazine.org/articles/2020/10/30/china-threatens-us-primacy-in-artificial-intelligence> (accessed 17 June 2021) (brackets added)

The country is also investing in autonomous systems and views AI as a “leapfrog” technology that could enable low-cost, long-range autonomous platforms to counter U.S. military conventional power projection, [Sec. of Defense Mark] Esper said. “At this moment, Chinese weapons manufacturers are selling autonomous drones they claim can conduct lethal targeted strikes,” he said. “Meanwhile, the Chinese government is advancing the development of next-generation stealth UAVs, which they are preparing to export internationally.” In 2019, private Chinese company Ziyan UAV demonstrated armed swarming drones which it claimed employed AI to perform autonomous guidance, target acquisition and attack execution, according to the Defense Department report. Over the past five years, China has made achievements in AI-enabled unmanned surface vessels, which it plans to use to patrol and bolster its territorial claims in the South China Sea, the document said. It has also tested unmanned tanks as part of research efforts to integrate AI into ground forces.

A/T “More study needed” – More action needed: If we don’t act now, we lose to China

Yasmin Tadjdeh 2020 (journalist) 30 Oct 2020 “China Threatens U.S. Primacy in Artificial Intelligence (UPDATED)” <https://www.nationaldefensemagazine.org/articles/2020/10/30/china-threatens-us-primacy-in-artificial-intelligence> (accessed 17 June 2021) (brackets added; ellipses in original)

Rising to the challenge China poses will be critical, [director of the Pentagon’s Defense Innovation Unit, Michael] Brown said. “If we let China take the lead in these key technologies and they get a substantial lead, … we will not be able to deter them” militarily, he said. “This next decade is what’s critical for us. … If we’re not organizing ourselves to take the leadership in these key technologies in the next decade, it well could be too late.”

A/T “Chinese government not directing AI” – But they’re using what industry develops

Prof. Graham Allison 2019. (Professor of Government at Harvard Univ.) 22 Dec 2019 “Is China Beating America to AI Supremacy?” <https://nationalinterest.org/feature/china-beating-america-ai-supremacy-106861> (accessed 9 June 2021)

In contrast to nuclear weapons—where governments led in discovery, development and deployment—AI and related technologies have been created and are being advanced by private firms and university researchers. The military establishments in Washington and Beijing are essentially playing catch-up, adopting and adapting private-sector products.

US and China are in a struggle for international dominance. China threatens US hegemony

Ashley Tellis 2020 (Tata Chair for Strategic Affairs and a senior fellow at the Carnegie Endowment for International Peace. He is also a counselor at the National Bureau of Asian Research and the research director of the Strategic Asia Program) 4 May 2020 "COVID-19 Knocks on American Hegemony" <https://carnegieendowment.org/2020/05/04/covid-19-knocks-on-american-hegemony-pub-81719> (accessed 8 June 2021)

After almost two decades of conflicted hesitancy, the United States finally acknowledged that it is involved in a long-term strategic competition with China. This rivalry, almost by definition, is not merely a wrangle between two major states. Rather, it involves a struggle for dominance in the international system, even if China as the rising power disavows any such ambition. China’s very ascendancy—if sustained—could over time threaten the U.S. hegemony that has been in place since the end of World War II. It is this reality of unequal growth—which has nourished China’s expanding influence and military capabilities—that lies at the root of the evolving rivalry.

China is growing its military, intends to become a challenger to American power, and not just in East Asia

Dr. Kim R. Holmes 2015 (PhD in history from Georgetown Univ.; formerly worked for the Defense Policy Board, the U.S. defense secretary’s primary resource for expert outside advice; and public member of the U.S. delegation to the Organization for Security and Cooperation in Europe) 3 June 2015 China prepping for regional hegemony <https://www.heritage.org/asia/commentary/china-prepping-regional-hegemony> (accessed 8 June 2021)

The Chinese government is putting its money where its mouth is. It announced a 10 percent increase of the military budget for 2015. That would make China the second-largest military spender in the world. Increases in defense spending have been outpacing GDP growth rates for years, and although China’s defense spending is still far below America’s, it is growing while the U.S. is cutting its defense expenditures. All of this adds up to a bold new role for China’s armed forces. Long thought to be content with the mere defense of its mainland territory, China is clearly staking a larger claim for itself. It is striving to become the dominant military power in East Asia for sure, but also, in the long run, a rival challenger to American military power.

US on the brink of losing East Asia hegemony to China

Prof. Jennifer Lind 2018 (associate professor of government at Dartmouth Univ.) “Life in China’s Asia What Regional Hegemony Would Look Like” <https://www.foreignaffairs.com/articles/china/2018-02-13/life-chinas-asia> (accessed 8 June 2021)

For now, the United States remains the dominant power in East Asia, but China is quickly closing the gap. Although an economic crisis or domestic political turmoil could [derail China’s rise](about:blank), if current trends continue, China will before long [supplant the United States](about:blank) as the region’s economic, military, and political hegemon.

China wants Asia hegemony, wants to replace U.S. in the region

Prof. Oriana Mastro 2019 (Assistant Professor of Security Studies at Georgetown Univ) “The Stealth Superpower” <https://www.foreignaffairs.com/articles/china/china-plan-rule-asia> Jan/Feb 2019 (accessed 8 June 2021)

China has no interest in establishing a web of global alliances, sustaining a far-flung global military presence, sending troops thousands of miles from its borders, leading international institutions that would constrain its own behavior, or spreading its system of government abroad. But to focus on this reluctance, and the reassuring Chinese statements reflecting it, [is a mistake](about:blank). Although China does not want to usurp the United States’ position as the leader of a global order, its actual aim is nearly as consequential. In the Indo-Pacific region, China wants complete dominance; it wants to force the United States out and become the region’s unchallenged political, economic, and military hegemon. And globally, even though it is happy to leave the United States in the driver’s seat, it wants to be powerful enough to counter Washington when needed.

China gaining Asian regional hegemony leads to gaining global hegemony, replacing USA

Min-Hyung Kim 2019 (Department of Political Science and International Relations, Kyung Hee University, South Korea) 4 Feb 2019 “A real driver of US–China trade conflict: The Sino–US competition for global hegemony and its implications for the future” <https://www.emerald.com/insight/content/doi/10.1108/ITPD-02-2019-003/full/html> (accessed 8 June 2021)

Although China repeatedly claims that it does not seek to replace US hegemony in the world, its behavior revealed by the initiatives of the BRI, the AIIB and Made in China 2015 illustrates that its ultimate goal is to be a global hegemon. This is not surprising because all the rising powers in history invariably sought to first dominate the region they are situated ([Mearsheimer, 2011, 2014](about:blank#ref031%20ref032)) and expand their power globally ([Gilpin, 1981](about:blank#ref012)).

Impact: World peace & prosperity at risk. US hegemony is key to global peace & prosperity

Capt. M. V. Prato 2009 (United States Marine Corps,Command and Staff College, Marine Corps Combat Development Command,Marine Corps University) “The Need for American Hegemony” <https://apps.dtic.mil/sti/citations/ADA508040> (accessed 3 June 2021)

The world witnessed a vast shift in the polarity of geopolitics after the Cold War. The United States became the world’s greatest hegemon with an unequalled ability to globally project cultural, political, economic, and military power in a manner not seen since the days of the Roman Empire. **[END QUOTE]** Coined the “unipolar moment” by syndicated columnist Charles Krauthammer, the disparity of power between the U.S. and all other nations allows the U.S. to influence the world for the mutual benefit of all responsible states. Unfortunately, the United States is increasingly forced to act unilaterally as a result of both foreign and domestic resentment to U.S. dominance and the rise of liberal internationalism. [**He goes on to conclude later in the same context QUOTE**:] The United States must exercise benevolent global hegemony, unilaterally if necessary, to ensure its security and maintain global peace and prosperity.

SOLVENCY / ADVOCACY

A/T “Private sector better than government at R&D” – Not for AI. We need government leadership to win

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021)

The race to research, develop, and deploy AI and associated technologies is already intensifying strategic competition. The U.S. government must embrace the AI competition and organize to win it. The American approach to innovation, which has served the country well for decades, must be recalibrated to account for the centrality of the competition involving AI and associated technologies to the emerging U.S.-China rivalry. To retain its innovation leadership and position in the world, the United States needs a stronger government-led technology strategy that integrates promotion and protection policies and links investments in AI to a larger constellation of related emerging technologies.

Greater federal investment in AI R&D is essential. Federal R&D produces big results historically

Center for a New American Security 2020 (non-profit, non-partisan policy research institution in Washington DC) Aug 2020 “Cementing American Artificial Intelligence Leadership: AI Research & Development” <https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2020/08/BPC_RD-AI-Paper_RV5.pdf> (accessed 19 June 2021)

Greater investments in artificial intelligence research and development are essential to maintaining American leadership in AI. Throughout the 20th century, the federal government played a critical role in fueling technological innovation by funding pivotal basic research. Government funding was essential to developing the transistor, GPS, and the internet—inventions that transformed the world economy. Yet over the past several decades, federal government spending on R&D as a percentage of GDP declined from about 1.2% in 1976 to around 0.7% in 2018. This is a worrisome trend as the federal government remains the main funder of basic research. Government support again could be pivotal both in fostering new AI breakthroughs and ensuring that the U.S. government has access to those breakthroughs.

Defense Dept. should spend at least $8 billion/year on AI R&D

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021)

Fund AI research and development. The Department should commit to spending at least 3.4% of its budget on science and technology and allocate at least $8 billion toward AI R&D annually. Additional resources should be focused on organizations with significant AI expertise, such as the Defense Advanced Research Projects Agency (DARPA), the Office of Naval Research (ONR), the Air Force Office of Scientific Research (AFOSR), the Army Research Office (ARO), and the service laboratories.

Need $40 billion/year in total federal funding for AI R&D

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021)

We worry that only a few big companies and powerful states will have the resources to make the biggest AI breakthroughs. Despite the diffusion of open-source tools, the needs for computing power and troves of data to improve algorithms are soaring at the cutting edge of innovation. The federal government must partner with U.S. companies to preserve American leadership and to support development of diverse AI applications that advance the national interest in the broadest sense. If anything, this report underplays the investments America will need to make. The $40 billion we recommend to expand and democratize federal AI research and development (R&D) is a modest down payment on future breakthroughs.

Increased enforcement of existing tax laws would increase federal revenues by $1 trillion over the next decade

Galen Hendricks & Seth Hanlon 2021 (*Hendricks is a research associate at the Center for American Progress. Hanlon is a senior fellow at the Center* ) 19 Apr 2021 “Better Tax Enforcement Can Advance Fairness and Raise More Than $1 Trillion of Revenue” <https://www.americanprogress.org/issues/economy/reports/2021/04/19/498311/better-tax-enforcement-can-advance-fairness-raise-1-trillion-revenue/> (accessed 17 June 2021)

The good news is that Congress and the Biden administration have an opportunity this year to begin rebuilding the IRS’ enforcement capabilities, direct new resources toward thoroughly auditing high-income taxpayers and corporations, and modernize the agency’s computer systems in a way that will improve both compliance and taxpayer service. By taking these steps, the United States can increase revenues by more than $1 trillion over a decade, according to multiple estimates.  In other words, investments in tax enforcement would pay for themselves and could pay for other critical investments at the same time.

ADVANTAGES

Defense

National Defense Strategy says we must have AI to fight and win wars of the future

Congressional Research Service 2020. (nonpartisan research agency of Congress) Artificial Intelligence and National Security, last updated 10 Nov 2020 <https://fas.org/sgp/crs/natsec/R45178.pdf> (accessed 15 June 2021) (brackets in original)

On July 20, 2017, the Chinese government released a strategy detailing its plan to take the lead in AI by 2030. Less than two months later Vladimir Putin publicly announced Russia’s intent to pursue AI technologies, stating, “[W]hoever becomes the leader in this field will rule the world.” Similarly, the U.S. National Defense Strategy, released in January 2018, identified artificial intelligence as one of the key technologies that will “ensure [the United States] will be able to fight and win the wars of the future.”

We lose military superiority in the next decade if we don’t accelerate AI capabilities

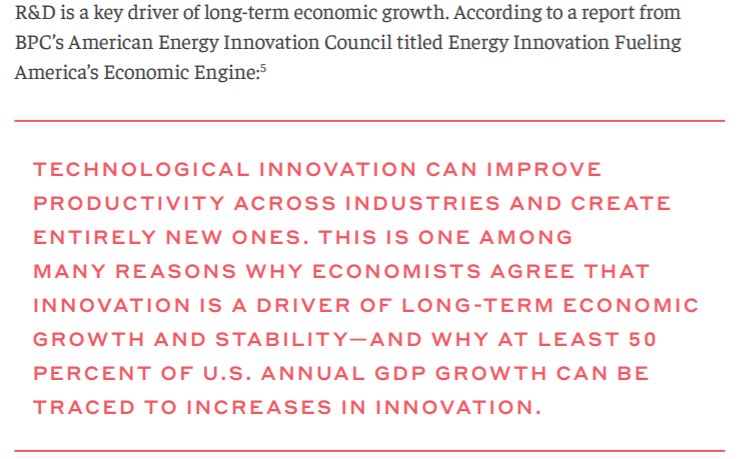
National Security Commission on Artificial Intelligence 2021. (independent commission created by Congress; chaired by Dr. [Eric Schmidt](https://en.wikipedia.org/wiki/Eric_Schmidt) former CEO of [Google](https://en.wikipedia.org/wiki/Google)  and vice-chaired by former [Deputy Sec. of Defense](https://en.wikipedia.org/wiki/United_States_Deputy_Secretary_of_Defense) and [Under Secretary of the Navy](https://en.wikipedia.org/wiki/Under_Secretary_of_the_Navy) [Robert O. Work](https://en.wikipedia.org/wiki/Robert_O._Work) ) Final Report, March 2021 <https://www.nscai.gov/wp-content/uploads/2021/03/Final_Report_Executive_Summary.pdf> (accessed 3 June 2021)

Our armed forces’ competitive military-technical advantage could be lost within the next decade if they do not accelerate the adoption of AI across their missions. This will require marrying top-down leadership with bottom-up innovation to put operationally relevant AI applications into place.

Non-Defense

R&D is a key driver of long-term economic growth

Center for a New American Security 2020 (non-profit, non-partisan policy research institution in Washington DC) Aug 2020 “Cementing American Artificial Intelligence Leadership: AI Research & Development” <https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2020/08/BPC_RD-AI-Paper_RV5.pdf> (accessed 19 June 2021)



US Federal government has the right research focus to produce big economic and social benefits

SELECT COMMITTEE ON ARTIFICIAL INTELLIGENCE of the NATIONAL SCIENCE & TECHNOLOGY COUNCIL 2019. (federal agency) June 2019 “THE NATIONAL ARTIFICIAL INTELLIGENCE RESEARCH AND DEVELOPMENT STRATEGIC PLAN: 2019 UPDATE” <https://www.nitrd.gov/pubs/National-AI-RD-Strategy-2019.pdf> (accessed 19 June 2021)

One of the most important Federal research priorities, outlined in Strategy 1, is for sustained long-term research in AI to drive discovery and insight. Many of the investments by the U.S. Federal Government in high-risk, high-reward fundamental research have led to revolutionary technological advances we depend on today, including the Internet, GPS, smartphone speech recognition, heart monitors, solar panels, advanced batteries, cancer therapies, and much, much more. The promise of AI touches nearly every aspect of society and has the potential for significant positive societal and economic benefits. Thus, to maintain a world leadership position in this area, the United States must focus its investments on high-priority fundamental and long-term AI research.

DISAD RESPONSES

A/T “Cost / budgets / deficits / can’t afford it” – It’s a necessity, even in era of tight budgets.

Lt Gen. Michael S. Groen 2021 (Director, Joint Artificial Intelligence Center) 9 Apr 2021 Honorable Robert O. Work, Vice Chair, National Security Commission on Artificial Intelligence, and Marine Corps Lieutenant General Michael S. Groen, Director, Joint Artificial Intelligence Center Hold a Press Briefing on Artificial Intelligence <https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2567848/honorable-robert-o-work-vice-chair-national-security-commission-on-artificial-i/> (accessed 15 June 2021)

So in an era of tightening budgets and -- and a -- and a focus on -- on -- on squeezing out things that are -- that are legacy or not important in the budget, the productivity gains and the efficiency gains that AI can bring to the department, especially through the business process transformation actually becomes an economic necessity. So in a squeeze play between modernizing our -- our warfare that moves at machine speed and tighter budgets, AI is doubly -- doubly necessary.

A/T “Too expensive / federal deficit” – Doesn’t matter, it’s worth it.

National Security Commission on Artificial Intelligence 2021 (bipartisan commission of 15 technologists, national security professionals, business executives, and academic leaders) March 2021 “Final Report” <https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf> (accessed 17 June 2021)

This is not a time for abstract criticism of industrial policy or fears of deficit spending to stand in the way of progress. In 1956, President Dwight Eisenhower, a fiscally conservative Republican, worked with a Democratic Congress to commit $10 billion to build the Interstate Highway System. That is $96 billion in today’s world. Surely we can make a similar investment in the nation’s future.

A/T “Federal R&D crowds out private R&D” – Actually it stimulates it, and fills gaps private R&D would never accomplish

Caleb Foote & Robert Atkinson 2019 (Foote - research assistant at the Information Technology and Innovation Foundation. Atkinson - founder and president of the Information Technology and Innovation Foundation; Pres. Clinton appointed Atkinson to the Commission on Workers, Communities, and Economic Change in the New Economy; the Bush administration appointed him chair of the c National Surface Transportation Infrastructure Financing Commission; Obama administration appointed him to the National Innovation and Competitiveness Strategy Advisory Board; Trump administration appointed him to the G7 Global Partnership on Artificial Intelligence) 12 Aug 2019 Federal Support for R&D Continues Its Ignominious Slide <https://itif.org/publications/2019/08/12/federal-support-rd-continues-its-ignominious-slide> (accessed 24 June 2021)

At first glance, the opposing trends of government and business R&D might seem to imply that R&D investment trades off between the two, with government funding crowding out private research. But scholarly research shows that the opposite is true. Not only do firms still need to perform their own R&D to stay ahead of their competitors, government R&D often “crowds in,” leading firms to invest more than they would otherwise when the government does the same. Unlike sectors in which government action would undercut or drive out private firms, public investments in research make private investments more productive. Research discoveries increase the public knowledge base, providing more lines of research that firms could turn into innovative products and allowing researchers to execute their own projects more efficiently. For example, the development of the Internet not only spawned countless commercial opportunities for businesses, it also allowed other research to be more productive by providing much greater access to academic databases and facilitating collaboration. Moreover, even with the large increases in private R&D, the private sector underinvests in research compared to what is societally optimal. When companies invest in R&D to develop a product or a production process, they can almost never retain all the benefits of that research, even if they patent the discovery. Competitors and others learn about the research and discoveries and can capitalize on it. In other cases, the benefits to society are much greater than the revenues the firm can charge.

1. Joshua 17:16 [↑](#footnote-ref-1)