



To: Clients
From: GoldsteinCope Policy Solutions
Date: June 26, 2018
Title: House Subcommittees on Research and Technology and Energy hearing entitled “Artificial Intelligence – With Great Power Comes Great Responsibility”

I. Executive Summary:

On June 26, 2018 at 10:30am, the House Subcommittees on Research and Technology and Energy held a hearing to examine the potential applications and risks of artificial intelligence (AI). During their opening statements, the witnesses described the ways in which artificial intelligence already has an impact on consumers’ lives and the potential risks of wanton AI development. During question and answer, the representatives in attendance were particularly interested in how the development of artificial intelligence will change the U.S. job market and the ways in which Congress can encourage AI education and research in the United States.

II. Members in Attendance:

Chairwoman Barbara Comstock (R-VA)
Full Committee Chairman Lamar Smith (R-TX)
Chairman Randy Weber (R-TX)
Rep. Dana Rohrabacher (R-CA)
Rep. Debbie Lesko (R-AZ)
Rep. Gary Palmer (R-AL)

Ranking Member Daniel Lipinski (D-IL)
Ranking Member Marc Veasey (D-TX)
Rep. Suzanne Bonamici (D-OR)
Rep. Elizabeth Esty (D-CT)
Rep. Jerry McNerney (D-CA)
Rep. Paul Tonko (D-NY)
Rep. Bill Foster (D-IL)

III. Opening Statements:

A. Chairwoman Comstock

Chairman Comstock’s opening statement focused on how AI is already integrated into our lives and her hope that the hearing would clarify how AI will influence U.S. citizens’ economic futures. She stated that while many experts warn of AI’s existential threat to humanity, her constituents are more concerned with how artificial intelligence will change the job market.

B. Ranking Member Lipinski

Representative Lipinski began his testimony summarizing science fiction movies in which humans and intelligent machines interact. He stated, however, that his interests are much temporal. He said that the applications artificial narrow intelligence (ANI) is already integrated into U.S. citizens’ everyday lives, citing as self-driving cars, virtual assistants, and online translators. Ranking Member Lipinski expressed his desire to examine the ways in which AI will change the



manufacturing, financial, and technology sectors. Moreover, he stated it is his responsibility to understand how the Federal government can effectively regulate AI and hoped the witnesses could provide guidance to Congress on how it can effectively do so. Congressman Lipinski further stated that issues of major concern to him are artificial intelligence ethics and its potential impact on the U.S. job market. He concluded his opening statement, saying the public has the right to know what data is being used to “teach” machines how to make decisions and how citizens can prepare for a job market soon to be heavily influenced by artificial intelligence.

C. Chairman Smith

Chairman Smith began his testimony describing the internecine ways in which artificial intelligence is already integrated into people’s everyday lives, from responding to cyber-attacks to monitoring soil moisture in crop fields. He stated that it is his goal to maintain the United States’ competitiveness in AI and quantum computing capabilities, citing Russian President Putin’s statement that in the future the country with the most advanced AI capabilities will “rule the world.” He concluded his opening statement expressing his belief that the development of AI capabilities should be a national security priority for the United States.

D. Ranking Member Veasey

Congressman Veasey began his statement expressing his belief that AI will fundamentally improve U.S. citizens’ lives and the national economy. He discussed the ways AI has already innovated the energy sector by monitoring production patterns and wear-and-tear on vital parts. However, he stated that AI raises many privacy concerns because the technology continuously models machine and personal data to “learn” and concluded his statement expressing his hope the witnesses would be able to shed light on how Congress can manage and encourage the development of artificial intelligence technology capabilities in the United States.

E. Chairman Weber

Chairman Weber opened his statement stating that while most people choose to focus on the apocalyptic potential of AI, he sees many beneficial economic applications for artificial intelligence. He continued, stating that the U.S. Department of Energy is uniquely positioned to lead the national research effort on artificial intelligence because it already funds big data research and on June 25, 2018 launched the world’s most powerful supercomputer. He expressed his belief that investing in AI research is an investment in *all* research because it has the ability to exponentially increase the rate at which other fields can solve their discrete research problems.

IV. Witness Statements:

A. Dr. Fei-Fei Li (Chairperson of the Board and Co-Founder, AI4ALL)

Dr. Li’s testimony focused on AI4ALL’s efforts to teach computer skills to underrepresented groups in the technology sector. She testified that it is vital to remember that there is nothing artificial about AI, being that it is a technology inspired by people, created by people, and will ultimately



have an impact on people’s lives. She stated that AI is a tool researchers are only beginning to understand and that the technology not only has the potential to improve everyone’s lives, but also has the ability to further widen the wealth gap, reinforce human biases, and exclude legions of citizens from participating in the economy. Therefore, Dr. Li expressed her belief that a public debate is vital to manage the further development of AI. She said the debate should focus on how humans can teach AI to: contextualize learning in ways humans do naturally, complement human skills and economic activity as opposed to replacing them, and address the potential impact of its own capabilities. Further, Dr. Li stated that Congress must encourage public research of artificial intelligence because it is her belief that artificial intelligence is a technology too powerful to be monopolized by private industry. To conclude her testimony, Dr. Li expressed her belief that the development of AI must remain “human centered” to be successful.

B. Dr. Tim Persons (Chief Scientist, Government Accountability Office)

Dr. Persons’ testimony focused on the impact AI will have on the United States and its citizens. He stated that it is vital to differentiate between narrow and general artificial intelligence: narrow artificial intelligence is capable of completing predefined tasks, such as tax preparation software or music recommendation software, while general AI demonstrates general intelligence on par with or superior to human intelligence. He stated his opinion that general artificial intelligence will not be achieved for decades, if at all. Regardless, Dr. Persons stated AI can be taught to complete specific tasks effectively, and it will thus likely influence the U.S. labor market. He stated that while AI will likely reduce the need for “easily-automated” jobs, such as call center and retail positions, it will also open new positions complimentary to artificial intelligence. He stated Congress can encourage inter-agency and public-private information sharing to stimulate the development of AI technology in the United States and testified that Congress must encourage new educational competencies in the U.S. education system in order to maintain the United States’ competitiveness in artificial intelligence.

C. Greg Brockman (Co-Founder and Chief Technology Officer, OpenAI)

Mr. Brockman’s testimony focused on the development of artificial general intelligence (AGI), which he defines as being able to outperform humans in most economically valuable tasks. He testified that, in the past, humans trained computers how to solve problems but that today, computers can use “artificial neural networks” on increasing powerful computers to solve new problems. He cited an example in which a computer independently learned to speak English by reading 7,000 books. He then turned to the timeline of AGI’s development, stating that the computational power of AI has doubled every three and months since 2012 and that he expects this rate of meteoric increase to continue for at least the next five years. He testified that the development of AGI must be completed safely and that the benefits of AGI must be distributed evenly among all economic actors that will be affected by the technology.

V. Questions and Answer

A. Artificial Intelligence Research and Education

Chairman Comstock asked the witnesses to describe in which ways artificial intelligence will change education and how Congress can catalyze the development of artificial intelligence.

Dr. Li stated that it is vital to expand the opportunities for women and minorities to influence the development of AI because machines' value systems are completely reflective of their creators' value systems. **Dr. Li** further stated that AI as a technology can be used to dramatically increase the effectiveness of educational techniques because it can study what works and does not work in education. **Mr. Brockman** stated that Congress should increase the frequency of information sharing between the government and private industry to catalyze the development of the technology.

Chairman Weber asked the panelists how Congress can encourage education to prepare citizens to enter an economy dominated by AI technologies. **Mr. Brockman** stated that he could not make a sound recommendation because there has not been enough research done to analyze the economic skills that will be complimentary to AI technologies. He encouraged Congress to fund this type of research.

Congressman McNerney asked **Dr. Persons** if a new government agency needs to be established to monitor and regulate AI development. **Dr. Persons** testified that it is his belief that the current Federal department structure is adequate to handle the development of AI.

B. Artificial General Intelligence (AGI)

Ranking Member Lipinski asked **Mr. Brockman** why his assessment of the timeline of AGI's development differs with **Dr. Persons**. **Mr. Brockman** stated that he simply acknowledges the unknowns within AI's development, meaning that he chooses to be skeptical of the technology because there are so many unknowns surrounding it and the risks of AI's misuse are systemic and perhaps existential.

C. Artificial Intelligence's Economic Impact

Representative Rohrabacher asked **Dr. Li** if AI technology will replace low skilled jobs or high skilled jobs. **Dr. Li** stated that AI will be able to replace low skilled jobs, such as retail, and will compliment high skilled jobs. For example, she stated AI technology could compliment a nurse's job by inputting charting statistics so nurses could spend more time with patients.



D. National Security Implications

Chairman Weber asked the panelists if the U.S. losing AI superiority would seriously endanger national security. All three panelists answered affirmatively.

Representative Lesko asked the panelists to list the nation-states with significant AI capabilities and how the United States ranks compared to them. **Mr. Brockman** stated the U.S. is currently at the top of the list but that other countries are investing heavily in the technology. He further stated that hoarding AI human talent is vital and that the United States is doing a very good job of concentrating AI talent domestically.

Representative Lesko asked what AI research is being protected from international competitors. **Mr. Brockman** stated that the technology originated in academic settings and that most advances are published. He encouraged Congress to develop a framework for keeping AI advances with potential national security implications classified.

Congressman Palmer asked the panelists how AI may be weaponized. **Dr. Persons** stated that while most countries have decided the development of weapons using AI is inevitable, most are unsure how it will be done. He continued, testifying that the Department of Defense has already begun to do work on this issue.