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Intellectual Property and Technology

Congress Takes Aim at the FUTURE of Artificial Intelligence

Action Item: As the calendar turns over to 2018, artificial intelligence (“AI”) system developers will need to keep an eye on first of its kind legislation being considered in Congress. The Fundamentally Understanding the Usability and Realistic Evolution of Artificial Intelligence Act of 2017 (“FUTURE of AI Act”) is Congress’ first major step toward comprehensive regulation of the AI tech sector.

Introduced on December 22, 2017, companion bills [S.2217](#) and [H.R.4625](#) touch on a host of AI issues, with their stated purposes mirroring concerns raised by many about possible problems facing society as AI technologies becomes ubiquitous. The bills propose to establish a federal advisory committee charged with reporting to the Secretary of Commerce on many of today’s hot button, industry-disrupting AI issues.

Definitions

Leaving the definition of “artificial intelligence” open for later modification, both bills take a broad brush at defining, inclusively, what an AI system is, what artificial general intelligence (“AGI”) means, and what are “narrow” AI systems, which presumably would each be treated differently under future laws and implementing regulations.

Under both measures, AI is generally defined as “artificial systems that perform tasks under varying and unpredictable circumstances, without significant human oversight, or that can learn from their experience and improve their performance,” and encompass systems that “solve tasks requiring human-like perception, cognition, planning, learning, communication,

or physical action.” According to the bills’ sponsors, the more “human-like the system within the context of its tasks, the more it can be said to use artificial intelligence.”

While those definitions and descriptions include plenty of ambiguity, characteristic of early legislative efforts, the bills also provide several clarifying examples: AI involves technologies that think like humans, such as cognitive architectures and neural networks; those that act like humans, such as systems that can pass the Turing test or other comparable test via natural language processing, knowledge representation, automated reasoning, and learning; those using sets of techniques, including machine learning, which seek to approximate some cognitive task; and AI technologies that act rationally, such as intelligent software agents and embodied robots that achieve goals via perception, planning, reasoning, learning, communicating, decision making, and acting.

The bills describe AGI as “a notional future AI system exhibiting apparently intelligent behavior at least as advanced as a person across the range of cognitive, emotional, and social behaviors,” which is generally consistent with how many others view the concept of an AGI system.

So-called narrow AI is viewed as an AI system that addresses specific application areas, such as playing strategic games, language translation, self-driving vehicles, and image recognition. Plenty of other AI technologies today employ what the sponsors define as narrow AI.

The FUTURE of AI Committee

Both the House and Senate versions would establish a FUTURE of AI advisory committee made up of government and private-sector members tasked with evaluating and reporting on AI issues.

The bills emphasize that the committee should consider accountability and legal rights issues, including identifying where responsibility lies for violations of laws by an AI system, and assessing the compatibility of international regulations involving privacy rights of individuals who are or will be affected by technological innovation relating to AI. The committee will evaluate whether advancements in AI technologies have or will outpace the legal and regulatory regimes implemented to protect consumers, and how existing laws, including those concerning data access and privacy (as discussed [here](#)), should be modernized to enable the potential of AI.

The committee will study workforce impacts, including whether and how networked, automated, AI applications and robotic devices will displace or create jobs and how any job-related gains from AI can be maximized. The committee will also evaluate the role ethical issues should take in AI development, including whether and how to incorporate ethical standards in the development and implementation of AI, as suggested by groups such as the Institute of Electrical and Electronics Engineers' [Global Initiative on Ethics of Autonomous and Intelligent Systems](#).

The committee will consider issues of [machine learning bias](#) through core cultural and societal norms, including how bias can be identified and eliminated in the development of AI and in the algorithms that support AI technologies. The committee will focus on evaluating the selection and processing of data used to train AI, diversity in the development of AI, the ways and places the systems are deployed and the potential harmful outcomes, and how ongoing dialogues and consultations with multi-stakeholder groups can maximize the potential of AI and further development of AI technologies that can benefit everyone inclusively.

The FUTURE of AI committee will also consider issues of competitiveness of the United States, such as how to create a climate for public and private sector investment and innovation in AI, and the possible benefits and effects that the development of AI may have on the economy, workforce, and competitiveness of the United States. The committee will be charged with reviewing AI-related education; open sharing of data and the open sharing of research on AI; international cooperation and competitiveness; opportunities for AI in rural communities (that is, how the federal government can encourage technological progress in implementation of AI that benefits the full spectrum of social and economic classes); and government efficiency (that is, how the federal Government utilizes AI to handle large or complex data sets, how the development of AI can affect cost savings and streamline operations in various areas of government operations, including health care, cybersecurity, infrastructure, and disaster recovery).

Nonprofits like [AI Now](#) and [Future of Life](#), among others, are also considering many of the same issues. While those groups primarily rely on private funding, the FUTURE of AI advisory committee will be funded through congressional appropriations or through contributions "otherwise made available to the Secretary of Commerce," which may include donation from private persons and non-federal entities that have a stake in AI technology development. The bills limit private donations to less than or equal to 50 percent of the committee's total funding from all sources.

The bills' sponsors say that AI's evolution can greatly benefit society by powering the information economy, fostering better informed decisions, and helping unlock answers to questions that are presently unanswerable. Their sentiment about fostering the development of AI in a way that maximizes AI's benefit to society provides a worthy goal for the FUTURE of AI advisory committee's work. AI companies may wish to approach AI technology development efforts with the same goal in mind, both before and after future AI legislation becomes law.

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