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Director of the U.S. Patent and Trademark Office
United States Department of Commerce
P.O. Box 1450
Alexandria, VA 22313–1450

RE: RFC on IP protection for AI innovation (Docket No. PTO–C–2019–0038).

Dear Director:

Thank you for this opportunity to supply comments on intellectual property protection for artificial intelligence innovation. I truly appreciate this opportunity to provide information about the impact of artificial intelligence technologies on copyright, trademark, and other intellectual property law and policy.

It is my hope that the enclosed answers to your questions will help the Department of Commerce and the United States Patent and Trademark Office evaluate whether further guidance is needed and to assist in the development of any such guidance with respect to intellectual property policy and its relationship with AI.

Sincerely,

William Henry Starrett, Jr.
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Enclosures

Intellectual Property Protection for Artificial Intelligence Innovation.

Contents

Question 1

Question 1. Should a work produced by an AI algorithm or process, without the involvement of a natural person contributing expression to the resulting work, qualify as a work of authorship protectable under U.S. copyright law? Why or why not?

Yes, any resulting work should qualify as protectable without regard to the proximity of the contributing expression of a natural person. Of course, much like where work produced in any other manner by any other algorithm or process may qualify as a protectable work of authorship under U.S. copyright law.

A learning algorithm or any derivative processes must originally be designed and developed, maintained, often trained with content material selection, preparation criteria, and steps having inconspicuous quantities of contributing expression, and a yield of work — now known or later developed — is caused much like it would be with the assistance of any other tool or technology.

17 U.S.C. § 102 states that original works of authorship fixed in any tangible medium of expression from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, are protected subject matter and this should not change.

Question 2

Question 2. Assuming involvement by a natural person is or should be required, what kind of involvement would or should be sufficient so that the work qualifies for copyright protection?

For example, should it be sufficient if a person (i) designed the AI algorithm or process that created the work; (ii) contributed to the design of the algorithm or process; (iii) chose data used by the algorithm for training or otherwise; (iv) caused the AI algorithm or process to be used to yield the work; or (v) engaged in some specific combination of the foregoing activities?

Are there other contributions a person could make in a potentially copyrightable AI-generated work in order to be considered an ''author''?

Involvement by a natural person or individual, above the authorship, rightful possession, ownership, or other rights immediately applicable to an AI algorithm or process and its usage, should not be required to sufficiently qualify resulting product for copyright protection. Such rights, immediately applicable to protectable matter, should conform to traditional property rights when not assigned under contractual agreement.

Correspondingly, it should be sufficient if a natural person or individual caused the AI algorithm or process to be used to yield the work or, subsequently, authored the AI algorithm or process that created the work, in said order, absent of other private agreement assignment or terms.

Given that obtainment or access to input data and training set content material is gained legally, under license or other private agreement, and access and storage of input data and training set content material is maintained with respect to the rights and license terms issued by providers and content owners, traditional tests may be applied to determine whether a work qualifies as derivative of a work under copyright or unique to itself and not infringing.

Question 3

Question 3. To the extent an AI algorithm or process learns its function(s) by ingesting large volumes of copyrighted material, does the existing statutory language (e.g., the fair use doctrine) and related case law adequately address the legality of making such use? Should authors be recognized for this type of use of their works? If so, how?

Generally, existing statutory language and related case law adequately addresses the legality of making use of copyrighted material for training and evolving AI algorithms and processes.

Categorically, the obtainment of and access to input data and training set content material must be gained legally under license or other private agreement. Input data and training set content material access and storage must be maintained with respect to the rights and license terms issued by providers and content owners. Where input data or training set content material was private or the obtainment or access to such was not gained legally under license or other private agreement, content owners and providers must have right of ownership with opportunity for judicial remedy.

From rightful access to input data and training set content material, relevant measurements and statistical analysis may be acquired for learning algorithms much like a natural person consumes protected works for self-improvement or critical analysis. Under such, recognition of authors or their works for such, while socially appreciated by authors, audiences, and users who benefit, and potentially required under private contract or terms of use, is best supplied voluntarily and should not be statutorily mandated.

Question 4

Question 4. Are current laws for assigning liability for copyright infringement adequate to address a situation in which an AI process creates a work that infringes a copyrighted work?

Generally, current laws for assigning liability for copyright infringement adequately address situations in which an AI process creates a work that infringes a copyrighted work.

Again, given that obtainment or access to input data and training set content material is gained legally, under license or other private agreement, and access and storage of input data and training set content material is maintained with respect to the rights and license terms issued by providers and content owners, traditional tests may be applied to determine whether a work qualifies as derivative of a work under copyright or unique to itself and not infringing.

However, where input data or training set content material was private or the obtainment or access to such was not gained legally, under license or other private agreement, content owners and providers must have right of ownership with opportunity for judicial remedy.

Question 5

Question 5. Should an entity or entities other than a natural person, or company to which a natural person assigns a copyrighted work, be able to own the copyright on the AI work? For example: Should a company who trains the artificial intelligence process that creates the work be able to be an owner?

Ownership rights and responsibilities relevant to any work would most appropriately remain centric to authorship and its relevant contractual agreements.

Once more, given that obtainment or access to input data and training set content material is gained legally, under license or other private agreement, and access and storage of input data and training set content material is maintained with respect to the rights and license terms issued by providers and content owners, a company who trains the artificial intelligence process that creates the work should be able to maintain ownership of resulting matter, and, similarly, a licensee or such other user of such algorithm, previously trained or otherwise, must also have potential to maintain ownership of resulting works where applicable under private agreement.

Where input data or training set content material was private or the obtainment or access to such was not gained legally, under license or other private agreement, content owners and providers must have right of ownership with opportunity for judicial remedy.

Question 6

Question 6. Are there other copyright issues that need to be addressed to promote the goals of copyright law in connection with the use of AI?

With protecting the exclusive right of authors and inventors being the goal of copyright law, concerns in connection with AI may be overstated, in most cases, and not observing how the obtainment, access, and maintenance of input data and training set content may first be standardly governed by terms issued by service providers, publishers, and content owners prior to any negotiated terms under private contractual agreement.

Question 7

Question 7. Would the use of AI in trademark searching impact the registrability of trademarks? If so, how?

In regard to the use of AI in trademark searching and its impact upon the registrability of trademarks, one could guess that innovators may leverage such processes with insights from market information like buyer behavior and user metrics to improve branding decisions and overall efficiencies. Consequently, others may be required to model successes of noncompeting brands observed across other categories or act less successfully upon alternatives against competing, more quantitatively strategic, registrants.

Question 8

Question 8. How, if at all, does AI impact trademark law? Is the existing statutory language in the Lanham Act adequate to address the use of AI in the marketplace?

In regard to the adequacy of existing statutory language in the Lanham Act relative to AI in the marketplace, I personally would guess, from the perspective of a developer, that no changes will be needed.

Question 9

Question 9. How, if at all, does AI impact the need to protect databases and data sets? Are existing laws adequate to protect such data?

Generally, existing laws are adequate to protect databases and data sets in terms of how AI may impact digital information and network security needs.

As to natural persons being subjected to remote monitoring of their biological systems, brain, or sensory activity, 18 U.S.C. § 1030 definition of "computer" includes electrochemical, as such biological systems or a human brain being monitored, and, Texas Penal Code Title 7. Chapter 33., as an example, extends the definition of computer to more completely accommodate neuronal and nerve activity of an individual, as if in a biological computing environment, performing logical, arithmetic, or memory functions by the manipulations of electronic impulses.

Additionally, private policy issued by service providers, publishers, and content owners, or negotiated terms under private contractual agreement, should adequately govern over access, reproduction, disclosure, and the use of automation for activities from queries to analysis and reporting.

Question 10

Question 10. How, if at all, does AI impact trade secret law? Is the Defend Trade Secrets Act (DTSA), 18 U.S.C. 1836 et seq., adequate to address the use of AI in the marketplace?

Generally, trade secret law will likely be no more impacted by artificial intelligence algorithms or processes than other strategies for measuring and statistical analysis.

It is the approach toward access, obtainment, or maintenance of data where the majority of concern could be placed.

As federal court documents have shown, for example, since November 2015, I have been required to consult in testing, training, operations, research, and development involving U.S. Army Civil Affairs and Psychological Operations Command and US. Special Operations Commands' staffs' usage of satellite-based or satellite-relayed communications, tracking, surveillance, and weapons systems.

If combined toward a form of weaponized human-computer interfacing, this "Remote Neural Monitoring" system, through electro-optics like lasers or an evolved satellite-based variation of functional photoacoustic imaging, can gather brain activity and sensory nerve impulse data — remotely sample then measure, correlate, and model said using artificial intelligence machine learning tasks in real time — to offer capability for interacting with or maintaining communications with a human subject who may not also be equipped in their proximity with instance-related technology for receiving or transmitting audio and visual information.

Such methods of device-free communications using measurement of human biological data may be effectively imposed upon an individual without their knowledge and consent.

Thereby, through the sampling of data being remotely modeled and correlated in real time with other communications and behavior data using artificial intelligence machine learning algorithms, making private information including but not limited to data, plans and preferences, trade secrets, works in progress, or intellectual property not publicly disclosed then unlawfully

obtained and taken, in these cases as conducted by military under the federal government, for public use.

From my personal experience, unfortunately, such presently can penetrate any building materials that I am aware of and has maintained continual tracking with precision whether flying in commercial aircraft or below ground to the third floor of a parking garage.

While, in most cases, private use or foreign threat from such systems may be an inevitability dependent upon future developments and increased availability of component systems, and one would assume that United States Constitution and current statutory law would supply as adequate regulation for such recent and present use by domestic military and law enforcement, unfortunately, as court filings have shown, there is a very real threat from such systems being issued, received, operated, and maintained in the absence of prudent and lawful guidance, and, although described under public disclosure, neither the combination of technologies, the use of such, or the resulting harms have received legal observance by federal courts.[1]

[1] See Petitioner's Brief, *William Henry Starrett, Jr. v. U.S. Department of Defense, et al*. (U.S. 18-1574).

Question 11

Question 11. Do any laws, policies, or practices need to change in order to ensure an appropriate balance between maintaining trade secrets on the one hand and obtaining patents, copyrights, or other forms of intellectual property protection related to AI on the other?

Policy

Private policy issued by service providers, publishers, and content owners, or negotiated terms under private contractual agreement, could be updated to include provisions for AI related activities including the access, measuring, and statistical analysis of proprietorially held information.

Private policy issued by developers and service providers could be updated to include provisions as to possession and liability related to works generated by their AI related algorithm and process products.

Individuals and companies should continue to be encouraged to institute policy conducive to maintaining relevant and desired privacy standards.

Practices

Systems access and use practices can be engineered to adequately maintain any needed capabilities or restrictions over the retrieval and reproduction of proprietorially held information that may be available or at risk.

Law

Presently, generally, current laws are adequate. However, as to the foregoing "Remote Neural Monitoring" program, as example, in court documents, it was required to claim copyright infringement among other causes of action because use of these systems brought such injury

while being conducted pursuant to a policy, practice, or custom that violates the United States Constitution and statutory law.[2]

Although copyright does not protect a creative idea or concept, 17 U.S.C. § 102 states that original works of authorship fixed in any tangible medium of expression from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, are protected subject matter.

It is ideally noted that under this present-era copyright protection as an original work, the spatial and temporal instances and relative associations of activity in biological systems to be analyzed like in the nerves and the brain of an individual relating to cognitive processes, mental information, and sensory information — when being perceived or mentally associated to ideas and meanings for being remembered or perceived from one's recollection or experience — qualify as works of authorship in a tangibly fixed expression not unlike data in a non-biological computer readable medium.

Additionally, unauthorized or unconsented reproductions made through measuring or analyzing values relevant to biological data such as biological system, brain, or sensory nerve activity of a human subject (while she consumes or remembers original works of authorship fixed in traditional forms of tangible media) are also infringements of copyright.

State of the art computer vision and language based artificial intelligence machine learning algorithms, like what military and law enforcement rely on in such systems, categorically depend upon content relevant to their target, as would be or has been consumed by their target, and related in association to probable contexts using technology as would be provided by the Department of Energy and its agents.

Any data sampled and transmitted can be remotely modeled and correlated in real time with other communications and behavior data using artificial intelligence machine learning algorithms for predictive analysis related to an individual or connections within and throughout a social group.

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[2] See Plaintiff's Complaint, *Starrett v. U.S. Department of Defense, et al*., No. 3:19-cv-02579-C-BT (N.D. Tex. 2019).

Additionally, as argued for these particular cases, specifically most relevant for preparing the user environment for surveillance or disruption of a target would be not the meanings or ideas and concepts behind the works of authorship but the works of authorship in detail and relating associations for context to them.

Ultimately, therefore, users of these systems would infringe upon protectable works and the copyright protection of works of others when analyzing or measuring biological system, brain, or sensory nerve impulses to be modeled remotely.

It is vitally important that the use of such systems soon gain prudent and lawful guidance and all resulting harms are legally observed.

Question 12

Question 12. Are there any other AI-related issues pertinent to intellectual property rights (other than those related to patent rights) that the USPTO should examine?

Of likely interest here, again concerning the foregoing "Remote Neural Monitoring" program and such other types of systems that may eventually become available or be employed, for example, any raw data collected during military trainings and any derivative product from such as obtained through remote monitoring using relevant tracking, communications, surveillance, and weapons systems, including but not limited to representations of a human subject's intellectual property, behavioral and location data, and private information, are private property also modernly having intrinsic commercial value but may be available to civilian law enforcement officials under 10 U.S.C. § 271 once taken for public use.[3]

Other than this relatively all-encompassing concern, there are not any other AI related issues pertinent to intellectual property rights that currently come to mind.

[3] The Fourth Amendment to the United States Constitution guarantees "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized." The Fifth Amendment to the United States Constitution imparts: "No person shall be … compelled … to be a witness against himself … nor shall private property be taken for public use, without just compensation."

Question 13

Question 13. Are there any relevant policies or practices from intellectual property agencies or legal systems in other countries that may help inform USPTO's policies and practices regarding intellectual property rights (other than those related to patent rights)?

In my personal opinion, the General Data Protection Regulation instituted by European Union countries offers welcomed guidance for governmental activities and its outlining of best practices but, for the public in a country like our United States of America, such may generally be better suited as a directive and model for some civil remedies while potentially problematic as a regulatory effort being enforced.