INTELLECTUAL PROPERTY
AND
ARTIFICIAL INTELLIGENCE

The Fundamentals of Protecting Artificial Intelligence

Presented by Robert D. Michaux as part of Doc in a Box: How Artificial Intelligence is Changing Healthcare and Health Law

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Talking Points

- Artificial Intelligence
- Patents
- Copyrights
- Trade Secrets
Current IP Landscape for AI

- Dr. Thaler and DABUS
- Patent applications filed in UK, EU, and US
- All three offices rejected the applications
- What happened next?
There is no universally recognized definition of AI

The state of the art is “narrow”

AI cannot yet invent or author without human intervention

Existing U.S. intellectual property laws are calibrated correctly to address the evolution of AI
Artificial Intelligence
Any technique that enables computers to mimic human intelligence, using logic, if-then rules, decision trees, and machine learning.
Machine Learning (ML)
A subset of AI that includes abstruse statistical techniques that enable machines to improve tasks with experience.
Defining AI

Deep Learning (DL)
A subset of ML composed of algorithms that permit software to train itself to perform tasks, such as speech and image recognition, by exposing multilayered neural networks to vast amounts of data.
Patents

- Granted for inventing new and useful processes, machines, articles of manufacture, or compositions of matter.
  - Examples include iPhone, GPS, Solar Panels, Gene-editing, Pharmaceuticals, Corn Varietals, etc.
- Types of Patents: Utility, Design, and Plant
- Categories of Patents: Software; Electrical Engineering; Mechanical; and Method and Process
- USPTO expressly recognizes AI in Class 706 (Data Processing: Artificial Intelligence).
- Patentability:
  - Subject matter
  - Utility
  - Novelty
  - Non-obviousness
Patents - The Details

- Application Requirements:
  - Enablement
  - Written Description
  - Best Mode
  - Inventor
  - Claim(s)

- Duration is 20 years from application date.

- Exclusive Rights – make, use, sell, offer for sale, and import the patented invention or products made by a patented process.

- Infringement requires every element of claim to be practiced by infringer.

- Never Patentable: inventions useful solely to utilize nuclear material or atomic energy in an atomic weapon; a claim directed to or encompassing a human organism; and tax strategies.
Limitations of Patents in Protecting AI

- Who is the Inventor?
- What is another acronym for AI?
  - *Bilski v. Kappos* – process such as business method excluded from patentability if claim covered abstract idea
  - USPTO has indicated that medical methods are patentable if they meet the process definition and the conditions of patentability.
  - *Mayo v. Prometheus* – two part test
  - *Alice Corp. Pty. Ltd. V. CLS Bank Int’l*
  - Aftermath of *Alice*
- How to balance disclosure requirements?
- Does prosecution take too long?
Copyright

- Copyright protections have two goals:
  - Spurring the creation of new works
  - Ensuring the optimal use of those works once created
- Copyright does not protect ideas, facts, or functionality
- Copyright protects creative expression that is:
  - original and
  - fixed in a tangible medium of expression
- Originality:
  - Differs from ordinary idea of creativity or inventiveness
  - Must possess some creative spark, no matter how crude, humble, or obvious
  - May resemble other works, just cannot copy the expression in another work
Copyright - Types of Work

- Literary Works: Books, Periodicals, Blogs
- Visual Works: Drawings, Graphic Design, Paintings, Photos, Sculptures
- Musical Works: Sheet Music and Words
- Audiovisual Works: Movies and Videos
- Choreographic Works: Dances and Mimes
- Sound Recordings: Songs and Sounds
- Architectural Works: Buildings and Plans
Copyright – Exclusive Rights

- Reproduction
- Creating Derivative Works
- Distribution
- Public Performance
- Public Display
- Digital Audio Transmission
Copyright - Duration

- Created on or after Jan. 1, 1978:
  - Single Author – the life of the author plus 70 years
  - Joint Author – the life of the longest living author plus 70 years
  - Works Made For Hire – sooner of 120 years after creation or 95 years after publication
- Created before Jan. 1, 1978: way too complex for this event
Copyright – Authorship vs. Ownership

- Author – anyone who creates an original work in a fixed form
- Joint Author – a co-creator that contributes to the creative expression of a protectable work
- Owner – ownership of copyright freely assignable and typically vests in the author(s), unless a work made for hire
Advantages of Protecting AI with Copyright

- No prosecution required.
- Duration longer than a patent.
- Infringement much easier to prove than patent infringement.
- Statutory damages.
Limitations of Protecting AI with Copyright

- Authorship issues
- Limited to protecting original expression of source code not hardware
- Fair Uses
- Open source software
- Continued registration of each version of software
Trade Secrets

- Three requirements:
  - information that has either actual or potential independent economic value by virtue of not being generally known,
  - has value to others who cannot legitimately obtain the information, and
  - is subject to reasonable efforts to maintain its secrecy.

- Information has broad coverage, including formulas, practices, processes, designs, instruments, patterns, compilations of information, secret recipes, customer lists, and marketing plans.

- No registration or disclosure required

- Potentially unlimited duration
Trade Secrets – Protecting AI

- Federal and State Laws:
  - Economic Espionage Act of 1996 criminalizes trade secret theft.
  - The Defend Trade Secrets Act of 2016 amended the Economic Espionage Act to establish a private civil cause of action for the misappropriation of a trade secret.
  - Virginia Uniform Trade Secrets Act provides additional protections.
Trade Secrets – Enhancing Protection

- Continuously identifying AI
- Limiting physical access
- Marking
- Multi-factor authentication
- Mobile device management
- Data loss prevention software
- Enhanced employee policies
- NDAs
Takeaways

- Human involvement necessary for AI to acquire patent or copyright
- Trade secret laws likely offers best protection of AI
- New IP rights may develop as AI evolves
Thank you