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The Impact of AI on IP and Research

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Introduction

AI is revolutionizing industries, including intellectual property (IP) and research.

- Key concerns:
 - Who owns AI-generated content?
 - How does AI affect IP laws?
 - What are the ethical implications in research?

AI's transformational role in research

How is AI revolutionizing Research?

AI is fundamentally changing how knowledge is created, validated, and owned.

Accelerating Discoveries

- AI speeds up hypothesis generation, data analysis, and experimentation (e.g., AlphaFold predicting protein structures).
- AI-powered tools like **Elicit** and **Consensus** summarize thousands of papers in seconds.

Automating Research Workflows

- AI drafts literature reviews, writes code, and even generates research papers (e.g., GPT-4 producing academic abstracts).
- AI peer-review assistants (e.g., **Scite.ai**) help verify citations and detect flawed studies.

Generating Original Content

- AI creates text, images, music, and even inventions—raising legal and ethical dilemmas.



IP and Authorship

Who Owns AI-Generated Research?

- If a researcher uses **ChatGPT** to draft a paper, who is the legal author?
- Can AI hold copyright?
- Can AI own a patent?

IP and Authorship

Can AI Hold copyright?

Most copyright laws require human authorship, excluding AI from direct ownership:

- USA : in the Perlmutter case the copyright office reaffirmed that only works created by humans qualify
 - Exception : AI assisted works with substantial human input **may** qualify
- EU: Human creations is necessary

IP and Authorship

○ Current SA Copyright law

- Governed by the Copyright ACT 98. of 1978
- Requires human Authorship
- No explicitly AI copyright law but courts likely to follow human –centric interpretations
- Can AI be an owner?
 - NO
 - Ownership typical goes to :
 - The human creator- if they add significant human input
 - AI developer -if terms of service assign rights
 - Public domain- if no human meets authorship requirements

Patentability of AI generated inventions

- The patentability of AI-generated inventions is a fascinating and evolving topic.
- **Inventorship:** Patent laws traditionally require a human inventor. This raises questions about whether AI systems can be recognized as inventors, as seen in cases like the "DABUS" AI, which was denied inventorship in several jurisdictions.
- **Inventive Step:** For an invention to be patentable, it must involve an inventive step that is non-obvious to a skilled person. Determining this for AI-generated inventions can be challenging, as the AI's role in the creative process might blur the lines.



Patentability of AI generated inventions

- **Ownership:** Even if AI cannot be an inventor, the ownership of patents for AI-generated inventions typically falls to the person or entity that owns or operates the AI system.
- **Global Variations:** Different countries have varying approaches to AI-related patents. Some jurisdictions are exploring reforms to address these challenges.
- **SA** made headlines in 2021 as the first country to grant patent listing an AI (DABUS)



IP and Authorship

Today , AI cannot hold copyright and own patent, but humans using AI may , depending on creative input. The law lags behind technology, demanding urgent reforms

Accountability and legal liability

- If an AI system misdiagnose a disease or plagiarizes content, who is responsible- the developer, user or AI itself?

Accountability and legal liability

- **Developers:** They play a critical role, as they design, train, and release the AI system. If the AI's mistake stems from flawed programming, inadequate training data, or a failure to set clear limits (like not checking for plagiarism), the developers may be held accountable.
- **Users:** The responsibility could shift to the user if they misuse or misapply the AI system. For instance, if an AI tool explicitly warns users that it's not a licensed medical device or content verification tool, yet someone relies on it to make critical decisions, the user might bear some of the responsibility for the outcome.
- **AI Itself:** Currently, AI systems aren't considered legal entities, so they can't directly bear responsibility.

Legal disputes related to IP and AI

1. Thaler v. U.S. Copyright Office (2023)

Case Summary: Stephen Thaler attempted to register a copyright for an artwork created by his AI system, Creativity Machine. The U.S. Copyright Office rejected the application, citing the requirement that human authorship is necessary for copyright protection.

Legal Precedent: The court upheld the decision, reaffirming that AI-generated works without human creative input cannot be copyrighted under U.S. law.

2. Andersen v. Stability AI, MidJourney, and DeviantArt (2023)

Case Summary: A group of artists sued Stability AI, MidJourney, and DeviantArt, arguing that AI models trained on copyrighted artwork without consent violate copyright laws.

Legal Precedent: The case is ongoing but could establish whether AI-generated images are derivative works requiring permission from original artists.

3. Naruto v. Slater (2018) – "Monkey Selfie" Case

Case Summary: While not AI-related, this case involved a copyright dispute over a selfie taken by a monkey. The court ruled that non-human entities cannot own copyrights, which has been referenced in AI-related copyright discussions.

Legal Precedent: Reinforced the notion that only human-created works qualify for copyright protection.

Ethical implications in Research

Ethical and legal concerns in AI- driven research

- Bias models
 - Training data may lead to skewed research findings
 - Liability for AI errors in published work
- Authorship and Credit
 - Should Ai be listed as co-author
- Misinformation
 - AI generated fake research undermines trust
 - Law firm in South Africa is in deep trouble after citing non-existent case authorities which were likely generated by AI.

Adapting to an AI –driven Ecosystem

- Leveraging AI responsibly (eg, UP's AI policy and guidelines)
- Collaborative models between hums and AI
- Integrating AI ethics into research training

Future for AI and IP Possible solutions

- Legal Reforms
 - New IP Laws for AI generated content
- Transparency Requirements
 - Disclose AI use in patents and research

THANK YOU

Artificial intelligence won't replace researchers—but those who harness its power will outperform and replace those who don't.

