2024 ASEAN Intellectual Property Association

The Future of AI and Its Impact
(IP Ownership, Infringement, Regulation and Other Issues)

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MUHANN
Patent & Law Firm

Introduction

Categories of an AI invention

- Category 1 – Invention of AI (e.g., a new type of neural network, learning model)

- Category 2 – Invention of AI implementation (e.g., inventions that comprise a system or process that uses known AI technology plus additional elements (e.g., that include a new type of pre-processing or post-processing technique).

- Category 3 – Invention of a new application of AI (e.g., water-safety monitoring device, automated-driving system or auto-adjusting lighting system using known AI technology)

- Category 4 - Invention made with help from AI (e.g., new pharmaceutical drug made with the help of AI)

- Category 5 - Invention made by AI (strong AI)
  - Hypothetical scenario. Does not exist yet. Self-motivated to invent. AI can invent without human intervention. Needs no assistance from a person to invent.

* *"Artificial Intelligence and Patents", Wolters Kluwer, Sep. 2023*

Inventorship

- Can an AI be an inventor?

- Can a person be an inventor when the person uses an AI to invent?

- Can a person be an inventor when an AI contributes to an invention much more than the person?
    - For example, what if a person contributes 1% to the invention and an AI contributes 99% to an invention?

- Can a person be an inventor when an AI the person is using creates an invention accidentally?
    - In other words, what if a person is using an AI for another purpose, and the AI produces an invention the person did not intend to create?

- Can a person that creates an AI system be an inventor when the AI system produces an invention?

Inventorship of an AI - DABUS

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(54) Title: FOOD CONTAINER AND DEVICES AND METHODS FOR ATTRACTING ENHANCED ATTENTION

The Artificial Inventor Project
(https://artificialinventor.com/)

Dr. Stephen Thaler
CEO of Imagination Engines, inc.

Inventorship of an AI - DABUS

Patent Issued	Application Denied	Appeal Pending	Application Pending
• South Africa	• Australia • Taiwan • United Kingdom (2023.12.20)	• EPO • Germany • Israel • Japan • New Zealand • South Korea • United States	• Brazil • Canada • China • India • Saudi Arabia • Singapore • Switzerland

Inventorship – DABUS case in Korea

2018.10.17	First EP application – EP18275163.6
2018.11.07	Second EP application – EP18275174.3
2019.09.17	PCT application – PCT/IB2019/057809
2020.03.12	Enters Korean National Phase - KR1020207007394
2021.05.27 2022.02.18	KIPO issues two Office actions asking the applicant to specify that the inventor is a human. The applicant refuses to comply.
2022.09.28	KIPO issues a notice that states the patent application violates the Korean Patent Act since the inventor is not a human and therefore the application is invalid.
2022.12.20	The applicant files a complaint against the KIPO decision before the Korea Administrative Court. (2022GuHap89524)
2023.06.30	**The court upholds the refusal to recognize AI as an inventor.**
2023.07.	The applicant files an appeal before the Korean Supreme Court.

- Korean Patent Act Article 33 (Persons entitled to patent)

  - A person ("사람") who makes an invention or his or her successor shall be entitled to a patent.

- According to the current Korean Patent Act, only a human (natural person) can be an inventor.

  - No matter how much the AI contributes to the invention, the AI cannot be an inventor.

- **Substantial Contribution** (Korean Patent Court decision 2013Heo5551, 19 Dec. 2013)

    - A person is at least a co-inventor of an invention <u>when the person substantially contributed to the invention</u>.

    - Adding or complementing a technical idea to solve a technical problem, completing a technical idea through an experiment, or providing specific means or methods to realize an invention are substantial contributions. A person who contributes in any of these ways at least, is a co-inventor. Merely suggesting a problem to solve, generally managing a researcher, merely organizing data, only conducting an experiment, providing money, or providing an experiment facility are not substantial contributions. A person who contributes in any of these or similar ways is not an inventor.

- E.g., A person who selected the input data that is fed to a trained AI system may be an inventor if the selection is a substantial part of the invention. That person cannot be an inventor if the selection is not a substantial part of the invention.

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- **When the AI contributes to an invention more than a person.**

    - The person can be named as inventor if the person's contribution to the invention is substantial
    - In a lawsuit regarding compensation to be given to an employee for creating an invention, the Korean court determined that human contribution was 5% and company contribution was 95%. (North Seoul District Court decision 2002KaHab3727 rendered on 3 Jul. 2003).

- **When the invention is created accidentally by the AI a person is using**

    - If a person is using the AI for another purpose, and the AI produces an invention the person did not intend to create, the person can be named as inventor if the person's contribution to the invention is substantial.
    - e.g., Viagra™

Images of avocado concept armchairs produced by DALL-E

To create the following images, a person simply entered, "An armchair in the shape of an avocado. An armchair imitating an avocado."

* https://towardsdatascience.com/have-you-seen-this-ai-avocado-chair-b8ee36b8aea

Inventorship of a creator of an AI used to create an invention

- A person who creates an AI system is <u>not an inventor or a co-inventor</u> under current Korean law.

    - <u>Weak AI is regarded as a tool</u> regardless of how much it contributes to the invention.
    - Many inventors use many kinds of tools such as experimental equipment, a computer, and software.

- Invention created by category 5 AI (strong AI)

    - Strong AI cannot be an inventor under current Korean patent law. However, a law or policy can be revised.
    - If Category 5 AI is given rights, it must also take on responsibility since rights and responsibilities go together.

- <u>Invention without an inventor</u>

Infringement

- Who is liable if an AI infringes a patent without human intervention, and such infringement was not foreseeable when the AI was invented or programmed?

- Fault based liability

  - In principle, when the person is <u>not at fault</u> for the damage or <u>does not intend</u> to cause the damage, the person is not liable for the damage.

- No-fault based liability

  - A manufacturer (and in some cases a supplier/seller) is liable for damage caused to a consumer due to a defect in a product even when the manufacturer is not at fault (Korean Product Liability Act)

AI Proliferation

Whether AI proliferation is necessary

- AI accelerates the development of new medicines.

- Sci-Fi movies can be produced at a lower cost by using AI technology.

- Weapons with AI capability are more powerful than conventional weapons.

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- AI suggested 40,000 new possible chemical weapons in just 6 hours.

- A deepfake video can be made easily using your image without your permission.

- An AI weapon can attack a human autonomously (without human intervention).

Whether AI proliferation is necessary

- Korean Election Act Article 82 (Revised on January 20, 2024)

    - Producing, modifying, distributing, playing or publishing of deepfake audio, video, or images for an election campaign is prohibited from 90 days before the election day to the election day.

    - Before the 90-day period, it shall be indicated in a government defined way that the deepfake audio, video, or images for the election campaign was/were generated by AI.

Three laws of robot

1. A robot may not harm a human being or, through inaction, allow a human being to come to harm.

2. A robot must obey the orders given it by a human being except where such orders would conflict with the First Law.

3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

From: "Runaround", Isaac Asimov, 1942
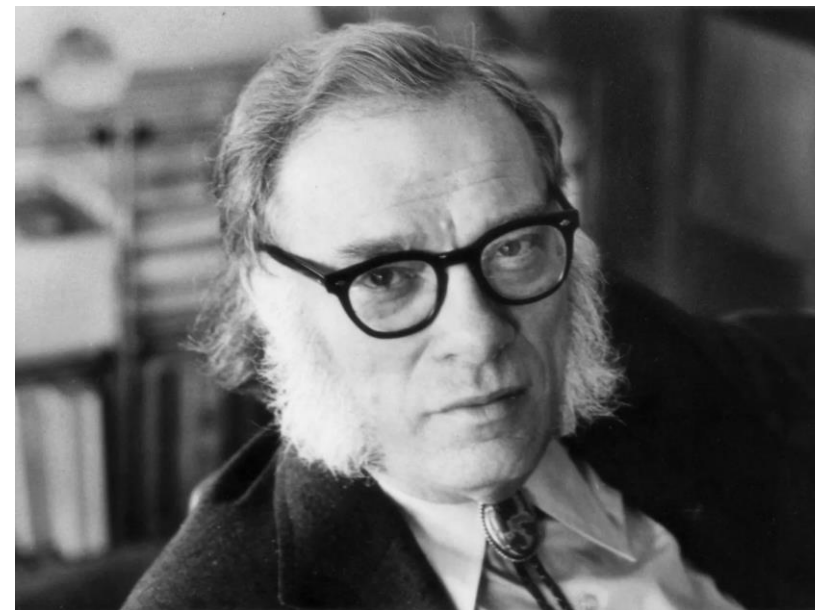
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Peter (Sungjin) Chun is a registered Korean patent attorney with expertise in AI, software, computers, and communications. He co-founded MUHANN in 2002 and is a managing partner at the firm. Mr. Chun has been practicing for more than 23 years. MUHANN is now one of the leading IP law firms in Korea employing around 200 people, including 67 patent attorneys.

Mr. Chun served as a research engineer for Samsung Electronics for several years. At the start of his career, Mr. Chun studied computer science and engineering at Seoul National University, and later attended graduate school. In 1992, during his time at university, he developed a speaker recognition system using neural networks. As part of his graduate studies, Mr. Chun was involved in developing a machine translation system that used AI. He is currently serving as the vice president of AIPPI Korea as well as the vice president of APAA Korea.

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