

Inventive Step and Description Requirements for AI related Inventions

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Inventive Step

✓ Examination Guidelines

Considerations for assessing an inventive step

- Whether it is easy to arrive at the claimed invention, notwithstanding its differences from prior art (motivation, exercise of ordinary creative ability, advantageous effect, etc.)
- Whether **particular information processing**, which is obtained **based on a trained model to carry out a particular problem**, is specified
- Whether **prior art or well known art is simply implemented using AI technology**
- Whether there is a **difference in specific means of AI technology (training data and AI model)** and said difference makes advantageous effect over prior art

Case Example

[Claim 1]

An estimation system of a hydroelectric power generating capacity of a dam comprising: **a neural network** that is built by means of an information processor, the neural network having an input layer and an output layer, ~;
a machine learning unit that **trains the neural network using a training data corresponding to actual values of the input data and the output data**; and
an estimation unit that inputs the input data to the neural network that has been trained by the machine learning unit with setting a current time as the reference time, and then calculates an estimated value of a future hydroelectric power generating capacity based on the output data of which reference time is the current time.

➡ **The subject matter of claim 1 ➡ An estimation system**

➡ **A neural network ➡ Prior art or well known art**

➡ **Lack of inventive step**

Case Example

[Claim 2]

The estimation system of a hydroelectric power generating capacity as in Claim 1, wherein the input data to the input layer further contains **a temperature of the upper stream of the river during the predetermined period between the reference time and the predetermined time before the reference time.**

➡ (inventive step) not clear at this stage

Description Requirements -Enablement requirement

✓ Relevant Provision

Patent Act Article 42

③ A description of an invention under paragraph (2) shall satisfy all of the following requirements:

1. **To describe the invention with such clarity and in such detail** that any person skilled in the art to which the invention pertains **can easily practice the invention**

✓ Examination Guidelines

Examples of violations of enablement requirement

- Where the description of the invention states technical steps or functions corresponding to those recited in a claim in an abstract manner **does not disclose how the steps or functions can be implemented or performed by hardware or software** so that the claimed invention cannot be carried out

Description Requirements -Support requirement

✓ Relevant Provision

Patent Act Article 42

④ 1. The claim shall be **supported by the description of the invention**

✓ Examination Guidelines

Examples of violations of support requirement

- Where the subject matters or the limitations of the claims are **neither disclosed nor implied in the description of the invention**
- Where the claims recite means or steps to perform particular functions, but **specific configuration corresponding to such means or steps is not disclosed** in the description of the invention
- Where the disclosure of the description of the invention **cannot be extended or generalized to the scope of the claimed invention** based on the level of skill in the pertinent art at the time of application filing

Case Example

[The Description of the Invention]

➡ Where the specification describes each item of “necessity of the contents of training data, training method, trained model (algorithm parameter), and a prediction accuracy of the trained model” concisely and explicitly as possible and the breath of claims embodies one or more items among aforementioned ones, embodiment requirement that is defined in Article 42(3)(1) of the Patent Act of Korea is satisfied.

➡ Further, the case 2 is considered to satisfy embodiment requirement that is defined in Article 42(3)(1) of the Patent Act of Korea.

Thank you



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