EIP

It's been emotional: the High Court says goodbye to excluding AI inventions as computer programs

On 21 November 2023 the High Court of England and Wales published its judgment in Emotional Perception AI v Comptroller-General of Patents [2023] EWHC 2948 (Ch) in which it found a patent application relating to an artificial neural network (ANN) to be eligible for patent protection in the UK.

The case is significant as it is the first time a UK court has explicitly considered how the exclusion under the Patents Act 1977 for "a program for a computer… as such" should be applied to artificial intelligence (AI). And the decision is that it should not, at least where the invention involves an ANN.

The invention

The application in suit (UK patent application no. 2015695.6) relates to a system and method for providing data file recommendations. Although the application primarily envisages the files as being music files, they could equally be images, text files, or any other type of file.

During a training phase, an ANN processes pairs of data files labelled with semantic descriptions, and outputs two distinct metric distances between the files based on (1) the semantic content and (2) measurable properties of the files. Over multiple iterations, the ANN is trained to make the two distances converge, enabling it to identify unlabelled data files that are semantically similar to one another. The trained ANN is then used to recommend data files that are semantically similar to a target data file, and these data files are provided to a user device.

Key reasoning

This is an appeal against a decision by the UK Intellectual Property Office (UKIPO) to refuse the patent application.

In reaching his judgement, the judge Sir Anthony Mann found three distinct reasons as to why the computer program exclusion does not apply:

1. The claims are not to a computer program at all. In reaching this conclusion, the judge drew analogies between an ANN embodied in hardware (i.e. a physical electronic circuit) and the more well-recognised embodiment of an ANN implemented in software, both of which fall within the scope of the claim. In either case, he held that the trained ANN operates at a different level from the underlying code which enables the training or execution of the ANN, and that any computer programming that is present is merely a subsidiary part of the claim rather than the core substance of the claim.

2. In the event that the first conclusion is wrong, the invention escapes the computer program exclusion by virtue of producing a technical effect. Drawing analogies with earlier High Court decisions Gemstar and Protecting Kids, the judge held that a technical effect is present because data is moved outside of the computer system in the form of the file that is transferred to the user device, having been identified as semantically similar to the target file based on technical criteria which the system has worked out for itself. Any potential subjective effect on a user is irrelevant.

3. Finally, the judge held that if either the training program or the overall training activity is considered a relevant computer program for the exclusion to bite, a trained hardware ANN is capable of being a technical effect which prevents the exclusion applying to that computer program. There ought to be no difference between a hardware ANN and an emulated ANN for these purposes, and therefore the entire claim is free of the exclusion.

Ramifications

The judgment will be well received by patent practitioners and would-be applicants in the

AI field, as its binding nature on the UKIPO provides potent ammunition to argue for patent eligibility of inventions involving neural networks. In particular, the judgment is more favourable for applicants than the UKIPO's previous guidance for examining patent applications relating to AI inventions, which had been temporarily suspended pending the decision, and now appears likely to be rewritten.

The reasons for the invention escaping the computer program exclusion are broadly applicable, including to certain core AI inventions and a wide range of applied AI inventions that may have previously been considered challenging, if not hopeless, from the perspective of patent eligibility, not least recommender systems themselves and systems that operate on data with no inherent technical character.

It should be noted that the present decision relates specifically to the computer program exclusion, and does not consider other exclusions under the Patents Act, including the mathematical method exclusion. Nevertheless, at least some of the above reasons are also likely to be useful against any objections based on the latter. In any case, the computer program exclusion tends to be the most significant hurdle to patent eligibility of AI inventions in the UK, particularly for applied AI inventions.

Following this decision, the UKIPO has likely become more a more favourable office to prosecute AI inventions than the European Patent Office (EPO), which applies a more limited scope of situations in which an AI invention can produce a technical effect and therefore be patentable. Given the divergence of positions between the UKIPO and the EPO following the decision (which could be seen as undesirable from the perspective of harmonisation), it would not be surprising at all to see the UKIPO appeal the decision.

In the absence of a successful appeal overturning the decision, the UK's position appears to have moved closer to that of the US, where patents are commonly granted for AI inventions, even those that are refused patent protection by the EPO. This comparatively liberal stance should encourage the filing of UK patent applications for AI inventions, which will no doubt go down well with parts of the UK Government, with their stated ambition to make the UK a global hub for AI innovation.