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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TU T. DANG, MICHAEL C. ELLES,
JUAN Q. HERNANDEZ, DWAYNE A. LOWE, and
CHALLIS L. PURRINGTON SR.[1]

Appeal 2018-005007
Application 14/823,384
Technology Center 2100

Before CARLA M. KRIVAK, BRADLEY WILLIAN BAUMEISTER, and MICHAEL M. BARRY, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final rejection of claims 20–37. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants identify the real party in interest as International Business Machines Corporation. App. Br. 3.

STATEMENT OF THE CASE

Appellants' invention is directed to

> a method for scalable predictive failure analysis. Embodiments of the method may include gathering memory information for memory on a user computer system having at least one processor. Further, the method includes selecting one or more memory-related parameters. Further still, the method includes calculating based on the gathering and the selecting, a single bit error value for the scalable predictive failure analysis through calculations for each of the one or more memory-related parameters that utilize the memory information. Yet further, the method includes setting, based on the calculating, the single bit error value for the user computer system.

Abstract.

Independent claim 20, reproduced below, exemplifies the subject matter on appeal.

> 20. A method comprising:
>
> receiving a rank value corresponding to the quantity of ranks in an synchronous dynamic random access memory (SDRAM) having a plurality of ranks;
>
> calculating, by machine logic, a memory rank scale factor based upon the quantity of ranks;
>
> receiving a baseline predictive failure analysis (PFA) count value y, with the PFA count value being based upon a predetermined time window value;
>
> dividing, by machine logic, the memory rank scale factor by y to obtain single bit error (SBE) threshold value for the SDRAM;
>
> counting single bit errors in the SDRAM to obtain an SBE count value;
>
> determining that the SBE count value meets or exceeds the SBE threshold value; and
>
> responsive to the determination that the SBE count value meets or exceeds the SBE threshold value, performing a corrective action.

REJECTION

The Examiner rejected claims 20–37 under 35 U.S.C. § 101, determining that the claimed invention is directed to patent-ineligible subject matter.

PRINCIPLES OF LAW

The Supreme Court has long held that "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014). The "abstract ideas" category embodies the longstanding rule that an idea, by itself, is not patentable. *Alice*, 134 S. Ct. at 2355 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

In *Alice*, the Supreme Court reiterates an analytical two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 79 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355 (citation omitted). The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts," such as an abstract idea. *Id.* (citation omitted). If the claims are directed to eligible subject matter, the inquiry ends. *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016). If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application."

Alice, at 2355 (citing *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to "search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (citing *Mayo*, 566 U.S. at 72–73).

CONTENTIONS AND ANALYSIS

In rejecting claims 20–37 under 35 U.S.C. § 101, the Examiner states the claims are "directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more." Final Act. 3; Ans. 3. Specifically, the Examiner finds claims 20–37 "are directed to the abstract concept of determining and comparing [data] to a threshold, similar to concepts disclosed in *Parker v. Flook, Classen lmmunotherapies v. Biogen /DEC, Fair[W]arning IP, LLC v. latric Systems, Intellectual Ventures, LLC v. Capital One Bank (USA),* and *Electric Power Group, LLC v. Alstom,* where data is collected, analyzed." *Id.*

Appellants contend "the operations being performed [in the claims] are specifically tied to a SDRAM because the determination of a single bit error threshold value cannot occur outside the context of memory hardware." App. Br. 12. Thus, Appellants assert, their claims are directed to "a technological improvement: an enhanced computer memory system," as were the claims in *Visual Memory LLC v. NVIDIA Corporation*, 867 F.3d 1253 (Fed. Cir. 2017), and are thus, patent eligible. *Id.* (emphasis omitted). We do not agree.

The Examiner is correct that "while the subject of the claimed determination is indeed for an SDRAM, the concepts described in the claims

merely reference the SDRAM as a subject of determination. As further explained below, *Visual Memory,* aside from the common use of 'memory[,]' is not shown to have any meaningful similarity to the instant application." Ans. 4. The claims in *Visual Memory* are "directed to a technological improvement in computer capabilities based on configurable operational characteristics." *Id.* There, however, "is no such operational change in the instant application." *Id.* Rather, Appellants' claims make a determination, and a result of the determination is displayed"—merely collecting data and analyzing that data. Ans. 4–5.

Collecting, analyzing, and displaying data, is an abstract idea. *See, e.g.*, *FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1097–98 (Fed. Cir. 2016) ("[T]he practices of collecting, analyzing, and displaying data, with nothing more, are practices 'whose implicit exclusion from [section] 101 undergirds the information-based category of abstract ideas.'"); *see also Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146 (Fed. Cir. 2016) ("[W]e continue to treat[] analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.") (quotation omitted); and *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016) ("Merely requiring the selection and manipulation of information—provide a 'humanly comprehensible' amount of information useful for users . . .—by itself does not transform the otherwise-abstract processes of information collection and analysis.") (citation omitted).

Appellants have not demonstrated their claims recite a specific improvement to the way computers operate, and they do not present

evidence to establish the claims recite a specific improvement to the claimed processor or user device. Ans. 4–5; *see also Enfish* 822 F.3d at 1336, 1339. None of the steps and elements recited in Appellants' claims provide, and nowhere in Appellants' Specification can we find, any description or explanation as to how the claimed mathematical manipulation steps are intended to provide: (1) a "solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks," as explained by the Federal Circuit in *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014); (2) "a specific improvement to the way computers operate," as explained in *Enfish*, 822 F.3d at 1336; or (3) an "unconventional technological solution . . . to a technological problem" that "improve[s] the performance of the system itself," as explained in *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300, 1302 (Fed. Cir. 2016). Appellants also have not demonstrated their claims "improve the way a computer stores and retrieves data in memory," as did the claims in *Enfish* via a "self-referential table for a computer database." *See Enfish,* 822 F.3d at 1336, 1339. Thus, we agree with the Examiner the claims are directed to performing mathematical calculations and monitoring the use for a predictive failure analysis using a computer, not improving the performance of the computer itself.

Furthermore, determining a count value that meets or exceeds a threshold value as claimed, is merely a step of analyzing information, and as such is intangible. *See, e.g.*, *Microsoft Corp. v. AT & T Corp.*, 550 U.S. 437, 451 n.12 (2007); *Alice*, 134 S. Ct. at 2355; *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) and *Parker v. Flook*, 437 U.S. 584, 589 (1978) ("Reasoning that an algorithm, or mathematical formula, is like a law of nature, *Benson*

applied the established rule that a law of nature cannot be the subject of a patent."). Additionally, "collecting information, including when limited to particular content (which does not change its character as information)," and "analyzing information by steps people go through in their minds, or by mathematical algorithms, without more," are "within the realm of abstract ideas." *Elec. Power Grp.*, 830 F.3d at 1353–54; *see also Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1349 (Fed. Cir. 2015); and *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) ("Data in its ethereal, non-physical form is simply information that does not fall under any of the categories of eligible subject matter under section 101."). Thus, we determine the Examiner is correct that Appellants' claims are directed to an abstract idea.

Appellants appear to be arguing the claimed SDRAM is memory hardware and not a "generic computer;" rather, it is "an integral component" for performing the claimed operations. App. Br. 12–13. Thus, Appellants contend, "the claims are directed to the operation of memory hardware," which is patentably eligible under *Visual Memory*. App. Br. 14.

We agree with the Examiner, the "corrective action" recited in the claims merely entails displaying the results of the determination/comparison. Ans. 7; *see also id.* at 6 (citing claim 25). That is, the claims do not recite any steps that actually improve the underlying technology. The claims, instead, recite an improved method of analyzing existing technology.

We therefore concur with the Examiner that Appellants' claims are similar to those in *Electric Power Group*. Ans. 5–6. In *Electric Power Group* the claims were determined to merely entail using "off-the-shelf, conventional computer, network, and display technology for gathering,

sending, and presenting the desired information" *Electric Power Group*, 830 F.3d at 1355). On this basis, the court held the claims to be directed to an abstract idea without adding significantly more. *Id.*

Therefore, considering the elements of the claims "individually and 'as an ordered combination'" we determine there are no additional elements that transform the nature of the claim into a patent-eligible application.

DECISION

The Examiner's decision rejecting claims 20–37 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED