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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* IRA COHEN, MARINA LYAN, ODED GAZIT,  
OHAD ASSULIN, and MICHAEL ROZMAN

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Appeal 2017-006937  
Application 13/454,572  
Technology Center 2800

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Before KAREN M. HASTINGS, JAMES C. HOUSEL, and  
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

CASHION, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants<sup>1</sup> appeal under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 1, 2, and 4–21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> The real party in interest is identified as Hewlett Packard Enterprise Development, LP. App. Br. 3.

STATEMENT OF THE CASE

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A method for detecting abnormal behavior in a computing system, the method comprising:

receiving from an abnormal detection system comprising a processing device:

a mean value of a metric of the computing system at a previous time interval assembled by the abnormal detection system; and

a sum of squares of the metric of the computing system at the previous time interval assembled by the abnormal detection system;

receiving from the computing system a sample of the metric of the computing system at a current time interval;

assigning, by the abnormal detection system, a first weight to the sample and a second weight to the mean value of the metric and the sum of squares of the metric;

adjusting, by the abnormal detection system, the first weight and the second weight at the current time interval, wherein the first weight is increased and the second weight is decreased in response to a system change report indicating an addition or removal of a physical hardware component to the computing system has occurred;

calculating, by the abnormal detection system, a mean value of the metric and a sum of squares of the metric at the current time interval based on the adjusted first weight and the adjusted second weight, the calculation of the mean value of the metric at the current time interval based on the mean value of the metric at the previous time interval; and

detecting, by the abnormal detection system, abnormal behavior by comparing the sample to an outlier value based on the mean value of the metric and the sum of squares of the metric at the previous time interval.

Independent claims 6 (non-transitory computer-readable medium) and 11 (abnormal behavior system) also require causing a computer to perform/execute the steps detailed in the method of independent claim 1.

REJECTION UNDER 35 U.S.C. § 101 (*Ineligible Subject Matter*)

Appellants request review of the Examiner's rejection of claims 1, 2, and 4–21 under 35 U.S.C. § 101 as directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more. App. Br. 10; Final Act. 4.

Appellants argue independent claims 1, 6, and 11 together and present separate arguments for dependent claims 2, 4, 5, 7–10, and 12–21. *See generally* Appeal and Reply Briefs. Accordingly, we select claim 1 as representative of the subject matter before us for review on appeal with the understanding that our discussion also applies to independent claims 6 and 11. Claims 6 and 11 stand or fall with claim 1. We address the arguments for the dependent claims separately.

ANALYSIS

*Claim 1*

This rejection is based on the Examiner's determination that the subject matter of claim 1 is directed to ineligible subject matter because it recites a mathematical function and an idea itself, both of which being abstract ideas falling under the judicial exceptions under 35 U.S.C. § 101. Ans. 3–4. According to the Examiner, the claim is directed to manipulation of data held as patent-ineligible abstract ideas by our reviewing court in the

decisions of *In re Grams*, 888 F.2d 835 (Fed. Cir. 1989), *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011), and *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App'x 950 (Fed. Cir. 2014). *Id.* at 4. The Examiner also determines that claim 1 does not include additional elements that are sufficient to amount to significantly more than the judicial exception. *Id.* at 4–5.

In *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014), the Supreme Court reiterated the following two-step analysis (previously set forth in *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 566 U.S. 66, 82–84 (2012)) for distinguishing patents that claim patent-ineligible laws of nature, natural phenomenon, and abstract ideas from those that claim patent-eligible applications of those concepts:

First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, [w]hat else is there in the claims before us? . . . We have described step two of this analysis as a 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.”

*Alice*, 134 S. Ct. at 2355.

The Supreme Court in *Alice* reiterated the framework set out in *Mayo* for “distinguishing patents that claim . . . abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to determine if the claim is directed toward a patent-ineligible concept and, if so, the second step is to determine whether there are additional elements that transform the nature of the claim into a

patent-eligible application. *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at 77–80). The second step searches for an inventive concept that is sufficient to ensure that the patent amounts to significantly more than a patent on the patent-ineligible concept. *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at 71–73).

Appellants argue independent claim 1 is not a patent-ineligible abstract idea because it enhances operation of computing systems by allowing determination of whether they are exhibiting abnormal behavior based explicitly on an addition or removal of a physical hardware component to the computing system. App. Br. 13. Appellants assert that the claim at issue is analogous to the claims in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), which were found to not be directed to an abstract idea because the claims improved the way a computer stores and retrieves data in memory. App. Br. 12–13.

Appellants additionally contend independent claim 1 is not a patent-ineligible abstract idea because it addresses the technological problem specifically arising in the realm of computing performance, i.e., whether computing systems exhibit abnormal behavior. App. Br. 13; Reply Br. 4. Appellants direct our attention to Examples 1 and 2 of the USPTO Guidance on Subject Matter Eligibility<sup>2</sup> as well as to *McRO, Inc. v. Bandai Namco Games America, Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) in support of this contention. App. Br. 13–14. Appellants further argue that, as with *Enfish*,

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<sup>2</sup> In view of Appellants’ reliance on Examples 1 and 2, we determine that Appellants are referring to the 2014 USPTO Guidance on Subject Matter Eligibility.

the claims of the subject application “are directed to a specific implementation of a solution to a problem in the software arts” concerning rapid changes in the infrastructure of cloud systems with components being added and removed dynamically. Reply Br. 5 (citing *Enfish*, 822 F.3d at 1339).

We are unpersuaded by these arguments. As noted by the Examiner, the subject matter of independent claim 1 enumerates a number of steps involving the data gathering where a mean value of a metric and a sum of squares of the metric of a sample at a previous time interval and of a sample of the metric at a current time interval are calculated to diagnose an abnormal condition in a system through comparison of the sample to an outlier value based on the mean value of the metric and the sum of squares of the metric at the previous time interval. Ans. 3.

We agree with the Examiner that Appellants have not adequately explained why the subject matter of independent claim 1 is not an abstract idea. Ans. 6–7. The Federal Circuit has held claims ineligible under § 101 when directed to a process of measuring parameters indicative of a condition to determine, using an algorithm, whether the condition is abnormal. *See In re Grams*, 888 F.2d at 836–37; *see also Elec. Power Grp. LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016) (claims reciting the combination of the abstract-idea processes of gathering and analyzing information of a specified content and then displaying the results, without any particular assertedly inventive technology for performing those functions, are directed to an abstract idea); *id.* at 1354 (treating “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”); *In re Meyer*, 688 F.2d 789, 794 (CCPA 1982) (“[data-gathering] steps ‘cannot make an otherwise nonstatutory claim statutory’”), quoted in *In re Grams*, 888 F.2d at 840.

With respect to Appellants’ argument that claim 1 addresses the technological problem specifically arising in the realm of computing performance (App. Br. 13; Reply Br. 4), a patent-ineligible abstract idea of a mathematical formula is not transformed into a patent-eligible invention by “limiting the use of an abstract idea ‘to a particular technological environment.’” *Alice*, 134 S. Ct. at 2358, quoting *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010). While Appellants contend that claim 1 is analogous to the claims in *Enfish*, we agree with the Examiner’s determination that *Enfish* is not controlling because claim 1 is not directed to data structures. Ans. 6. Nor do Appellants adequately explain how the claim improves the way a computer stores data in memory. *Id.* Further, as noted by the Examiner, claim 1 does not “describe specific ways to improve the technological result of detecting abnormal behavior in computing system or an improvement to computer-related technology (i.e. computer functionality) as the *Enfish* claims.” *Id.* at 7.

The first threshold under *Alice* is met. We now turn to the second step under *Alice* to consider if there is an inventive concept that is sufficient to ensure that the patent amounts to significantly more than a patent on the

patent-ineligible concept. *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at 71–73).

Appellants argue that claim 1 recites additional features that are sufficient to transform the claimed subject matter into a patent-eligible application. App. Br. 15. According to Appellants, claim 1 may enhance the functioning of computer systems (improve a technology/technical field) by allowing determination of whether they are exhibiting abnormal behavior. *Id.* at 16. Appellants also argue that claim 1 does not preempt the general practice of diagnosing an abnormal condition and comparing information. Reply Br. 9. Appellants additionally argue the Examiner is inconsistent with respect to the determination that claim 1 is allowable over prior art by showing improvement of the abnormal behavior detection while maintaining that, under 35 U.S.C. § 101, claim 1 is not an improvement to computer-related technology because the claim is well understood, routine, and conventional. Final Act. 4, 7; Reply Br. 10.

We have considered Appellants’ arguments but are unpersuaded by them. Appellants do not direct us to “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.’” *Alice*, 134 S. Ct. at 2355. That is, Appellants do not identify nor adequately explain how the alleged additional features amount to significantly more than a patent upon the ineligible concept itself. While Appellants argue that the claim does not preempt the general practice of diagnosing an abnormal condition and comparing information (Reply Br. 9), Appellants do not explain why this is so. As determined by the Examiner, claim 1 does not

add any meaningful limits on the use of a specific algorithm or a specialized computer to improve the performance of a computer-implemented for detecting abnormal behavior in a computing system. Ans. 4–5. Thus, simply asserting that there are many meaningful and significant ways that diagnosing an abnormal condition and comparing information can be performed without being covered by the claims is insufficient to support a finding of patent-eligible subject matter.

With respect to the inconsistency regarding the Examiner’s determinations over the prior art and the patent-ineligible subject matter, the Specification itself suggests a generic computer can be used. Spec. ¶ 53 (“general . . . purpose microprocessors”). The manner with which and the type of data the conventional “computing system” gathers, analyzes, calculates and outputs may be unconventional. But a novel or nonobvious way of analyzing data would not normally render patent-eligible a claim directed to a generic computer functioning as it is always expected to. This is so because a finding of novelty or nonobviousness does not necessarily lead to the conclusion that subject matter is patentable eligible. “Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.” *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2117 (2013). The question in step two of the *Alice* framework is not whether an additional feature [i.e., the calculation] is novel but whether the implementation of the abstract idea involves “more than performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’” *Content Extraction and Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014)

(quoting *Alice*, 134 S. Ct. at 2359). This will depend on whether or not the “computing system” is simply acting as a conduit for the data-manipulating abstract idea, as novel/nonobvious as that might be. *Cf. In re TLI Communications LLC Patent Litigation*, 823 F.3d 607, 612 (Fed. Cir. 2016).

Put differently, the telephone unit itself is merely a conduit for the abstract idea of classifying an image and storing the image based on its classification. Indeed, the specification notes that it “is known” that “cellular telephones may be utilized for image transmission,” *id.* at col. 1 ll. 31–34, and existing telephone systems could transmit pictures, audio, and motion pictures and also had “graphical annotation capability,” *id.* at col. 1 ll. 52–59.

Here, the specification/claims support more strongly the view that the “computing system” is a conduit. “Taking the claim elements separately, the function performed by the computer at each step of the process is ‘[p]urely conventional.’” *Alice*, 134 S. Ct. at 2359 (citing *Mayo*, 566 U.S. at 79). *Cf. Alice*, 134 S. Ct. at 2359 (“Considered ‘as an ordered combination,’ the computer components of petitioner’s method ‘ad[d] nothing . . . that is not already present when the steps are considered separately.’”)

Thus, Appellants have not established error in the Examiner’s determination that the subject matter of representative claim 1 lacks

additional elements that transforms the subject matter of the claim into a patent-eligible application under the second step of *Alice*.

*Dependent Claims 2, 4, 5, 7–10, and 12–21*

The Examiner determines that dependent claims 2, 4, 5, 7–10, and 12–21 are not directed to patent-eligible subject matter because the additional steps/elements recite further well-understood, routine, conventional activities and/or mathematical relationships/algorithms identified in its respective parent claim. Ans. 12–13.

We note that the Examiner’s analysis for the dependent claims in the Answer is in response to Appellants’ argument that such an analysis was lacking in the Final Action. App. Br. 16–17. In the Reply Brief, Appellants relied on the arguments presented for the independent claims to address the Examiner’s analysis with respect to the dependent claims by arguing all the claims together. *See generally* Reply Br. That is, Appellants do not specifically address the Examiner’s reasons for determining that the dependent claims are directed to patent-ineligible subject matter.

Therefore, Appellants have not established error in the Examiner’s determination that the subject matter of the dependent claims is an abstract idea under the first step of *Alice* and that the dependent claims lack

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additional elements that transforms the subject matter of the claims into a patent-eligible application under the second step of *Alice*.

Accordingly, we affirm the Examiner's rejection of claims 1, 2, and 4–21 under 35 U.S.C. § 101 for the reasons presented by the Examiner and given above.

ORDER

The Examiner's rejection under 35 U.S.C. § 101 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED