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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* WALTER W. CHANG, EMRE DEMIRALP,  
SHANTANU KUMAR, and SHANSHAN XIA

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Appeal 2018-004378  
Application 14/244,665<sup>1</sup>  
Technology Center 2600

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Before TERRENCE W. McMILLIN, KARA L. SZPONDOWSKI, and  
SCOTT B. HOWARD, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–20, which constitute all of the claims pending in this Application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> Appellants identify Adobe Systems Incorporated as the real party in interest. App. Br. 3.

## THE INVENTION

The disclosed and claimed invention is directed to “[c]ontextual sentiment text analysis.” Spec. ¶ 5.<sup>2</sup>

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. In a digital medium environment including at least one computing device implementing a sentiment analysis application performing sentiment analysis of a sentence in an electronic text data format, a method, comprising:

receiving, by a word type tagging module of the sentiment analysis application, the sentence as the electronic text data communicated to the at least one computing device, the sentence including a sentiment about a subject of the sentence;

executing a run-time ensemble part-of-speech tagging system comprising multiple part-of-speech taggers each providing respective part-of-speech tags for the sentence, the run-time ensemble voting on the respective part-of-speech tags from the multiple part-of-speech taggers yielding a plurality of pre-processed part-of-speech tags;

producing, by the word type tagging module, a two-level tag structure for the sentence;

analyzing, by a sentiment terms tagging module of the sentiment analysis application, the electronic text data and the plurality of pre-processed part-of-speech tags to identify the sentiment about the subject;

determining, by a sentiment topic model module of the sentiment analysis application, a topic category of the subject of the sentence, said determining based on text categorization

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<sup>2</sup> We refer to the Specification filed Apr. 3, 2014 (“Spec.”); Final Office Action mailed June 1, 2017 (“Final Act.”); Appeal Brief filed Dec. 5, 2017 (“App. Br.”); Examiner’s Answer mailed Jan. 22, 2018 (“Ans.”); and the Reply Brief filed Mar. 20, 2018 (“Reply Br.”).

using text classifiers configured to accept the sentence and output a plurality of topic categories from which the topic category is selected;

determining, by the sentiment terms tagging module, a context of the sentiment as the sentiment pertains to the topic category of the subject in the sentence;

determining, by the sentiment terms tagging module, whether the sentiment is positive about the subject or negative about the subject based on the context of the sentiment within the topic category of the subject;

annotating, by the sentiment terms tagging module, each sentiment word as positive or negative in the two-level tag structure of the sentence;

scoring, by a sentence phrase sentiment scoring module of the sentiment analysis application, the sentiment according to whether the sentiment is positive about the subject or negative about the subject, said scoring including normalizing a sentence-level score of the sentiment based on a total number of adjectives, adverbs, and nouns in the sentence; and

storing, in memory, the electronic text data of the sentence on the at least one computing device for access by a sentiment metadata output module, the electronic text data stored in a positive list if the sentiment of the sentence is scored as a highest scoring positive sentiment, or the electronic text data stored in a negative list if the sentiment of the sentence is scored as a highest scoring negative sentiment.

## REJECTION

Claims 1–20 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to patent-ineligible subject matter. Final Act.  
5.

## ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ arguments that the Examiner erred. In reaching this decision, we have considered all evidence presented and all arguments made by Appellants. We are not persuaded by Appellants’ arguments regarding the pending claims.

### *Section 101 Rejection*

#### *The Alice/Mayo Framework Governing Patent-Eligible Subject Matter*

Patent-eligible subject matter is defined in 35 U.S.C. § 101 of the Patent Act, which recites: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

There are, however, three judicially created exceptions to the broad categories of patent-eligible subject matter in § 101: laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70–71 (2012). Although an abstract idea, itself, is patent-ineligible, an application of the abstract idea may be patent-eligible. *Alice*, 134 S. Ct. at 2355. Thus, we must consider “the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (citing *Mayo*, 566 U.S. at 79). The claim must contain elements or a combination of elements that are “sufficient to ensure that the

patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.” *Id.* (citing *Mayo*, 566 U.S. at 79).

The Supreme Court set forth a two-part “framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Id.* at 2355.

First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. [*Mayo*, 566 U.S. at 75–77]. If so, we then ask, “[w]hat else is there in the claims before us?” *Id.* . . . . To answer that question, we consider the elements of each claim both individually and “as an ordered combination” to determine whether the additional elements “transform the nature of the claim” into a patent-eligible application. *Id.*[ at 79, 77–78]. 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.” *Id.*[ at 72–73].

*Id.*

“The ‘abstract idea’ step of the inquiry calls upon us to look at the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Affinity Labs of Tex. v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016) (quoting *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). There is no definitive rule to determine what constitutes an “abstract idea.” Rather, the Federal Circuit has explained that “both [it] and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases.” *Enfish*, 822 F.3d at 1334; *see also Amdocs (Israel) Ltd. v. Openet*

*Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (explaining that, in determining whether claims are patent eligible under § 101, “the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided”).

Under the second step of the *Alice/Mayo* framework, we examine the claim limitations “more microscopically” (*Elec. Power*, 830 F.3d at 1354), to determine whether they contain “additional features” sufficient to “transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355, 2357 (quoting *Mayo*, 566 U.S. at 78). “[M]ere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea. Rather, the components must involve more than performance of ‘well-understood, routine, conventional activit[ies] previously known to the industry.’” *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016) (citing *Alice*, 134 S. Ct. at 2359).

#### *Abstract Idea*

The Examiner concludes the claims are directed to “the abstract idea of analyzing contextual sentiment of text.” Final Act. 6–7. Specifically, the Examiner finds the claims are similar to those in *Electric Power*, focusing on “collecting information, analyzing it and displaying certain results of the collection and analysis.” Ans. 6 (citing *Elec. Power Group*, 830 F.3d at 1353). According to the Examiner, the claims “collect information, which does not change its character as information,” analyze data, which “can be done by steps that goes through one’s mind . . . which is essentially mental

processes within the abstract -idea category,” and present results as “an ancillary part of collection and analysis.” *Id.*

Appellants argue “the claims at issue recite features that specify with particularity the manner in which contextual sentiment of a sentence is determined.” App. Br. 17; *see* Reply Br. 7. According to Appellants, claim 1 is directed to “a specific process of analyzing contextual sentiment of text in a sentence, and includes a technological advantage in that run-time ensemble voting on part-of-speech tags from multiple part-of-speech taggers can be done when the vocabulary size makes human review impractical” which “cannot ‘be done by a human’ and cannot ‘be done by a user’ as alleged by the Office.” *Id.* at 20; *see* Reply Br. 6. Appellants contend the claimed invention “significantly increases the part-of-speech tag accuracy resulting in improved accuracy of sentiment analysis results in subsequent processing stages.” *Id.*; *see* Reply Br. 6. According to Appellants, “the improvements of independent claim 1 are analogous to improvements made in *Enfish* in that sentiment of a sentence is determined from electronic text data when human review is impractical (e.g. when the vocabulary size is large) and with improved accuracy.” App. Br. 21.

We are not persuaded by Appellants’ arguments. We agree with the Examiner that the claims are directed to the abstract idea of sentiment analysis, which involves collecting information, analyzing it, and displaying certain results of the collection and analysis, citing to *Electric Power*. *See* Ans. 5–6. As identified by the Examiner, claim 1’s steps can be identified as collecting information (i.e., receiving sentences as electronic text data), analyzing the collected data (i.e., providing tags for the sentence data and pre-processed part-of-speech tags, producing a tag structure, analyzing the

text data and tags to identify sentiment, determining a topic category, determining context of the sentiment, determining whether the sentiment is positive or negative, annotating each sentiment word based on the determination of sentiments being positive or negative, scoring the sentiment), and displaying certain results (i.e., storing the electronic text data on a computing device in a positive or negative list). *See* Ans. 6; *see also Elec. Power Group*, 830 F.3d at 1353 (“collecting information, analyzing it, and displaying certain results of the collection and analysis” are abstract-idea processes).

Moreover, we disagree with Appellants that claim 1 is analogous to the claims in *Enfish*. The claims in *Enfish* were directed to a specific improvement in the way computers operate, embodied in a self-referential database table, and recited technical details improving how the computer was configured. *See Enfish*, 822 F.3d at 1338–1339. By contrast, claim 1 focuses on no such improvement to computer technology, but instead focuses on an abstract idea—sentiment analysis—that uses generic computing elements. *See* Ans. 2–3; *Elec. Power Group*, 830 F.3d at 1354 (explaining that claims directed to computerized collecting, analyzing, and displaying information were different from the claims in *Enfish*: “the focus of the claims is not on such an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.”). We agree with the Examiner that the claimed invention’s improvement is “a process of gathering and analyzing information of a specific content, then displaying the results, and not any particular inventive technology for performing those functions.” Ans. 6.

Appellants further argue the claimed limitations are similar to the patent-eligible claim elements in *McRO* because “the elements recited by claim 1 are a combined order of *specific rules* that identify sentiment about a subject of a sentence from pre-processed part-of-speech tags that are first generated by executing a run time ensemble voting on part-of-speech tags for the sentence” and then scoring the sentiment according to whether it is positive or negative about a subject, “including normalizing a sentence-level score of the sentiment based on a total number of adjectives, adverbs, and nouns in the sentence.” App. Br. 24 (citing *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)).

We are not persuaded by Appellants’ argument and agree with the Examiner’s conclusion that the “rules claimed in *McRO* provide improvements over the existing process, unlike the present claims.” Ans. 4. In *McRO*, the patent-eligible claim includes a computer to “perform a *distinct* process to automate a task previously performed by humans” that is “unlike *Flook*, *Bilski*, and *Alice*, where the claimed computer-automated process and the prior method were carried out in the same way.” *McRO*, 837 F.3d at 1314 (emphasis added).

Paragraph 18 of Appellants’ Specification describes that the “human curation process is feasible when the vocabulary size is consolidated and can be flagged for output,” and the “run-time ensemble can be used when the vocabulary size makes human review impractical,” and that “[i]n both cases, use of the proper ensemble part-of-speech tagging method significantly increases the part-of-speech tag accuracy resulting in improved accuracy of sentiment analysis results in the subsequent processing stages.” In other words, Appellants’ Specification describes the human process (i.e., human

curation process) and machine process (i.e., run-time ensemble) can be the same process, both benefiting from proper tagging methods. The machine process is relied on to automate the human process (i.e., to review a greater vocabulary size).

Here, the machine process (i.e., run-time ensemble process) automates the process previously performed by humans (i.e., human curation process) by performing the same analysis while handling a greater vocabulary size. However, unlike in *McRO*, the machine process is *not distinct* from the process previously performed by humans and instead the machine process and prior human process are carried out in the same way.

Accordingly, we agree with the Examiner that the claims are directed to an abstract idea.

*Significantly More*

The Examiner determines that the claims do not include additional elements that are sufficient to amount to significantly more than the judicial exception because the additional elements are all steps that “can be done by a human” or “user.” Final Act. 6–7. Specifically, the Examiner concludes the claimed invention does not “provide other benefits to the recited computing device nor does the [S]pecification serve to add significantly more because the claims are not directed to a specific improvement to computer functionality,” and instead “appear to enlarge and refine the ability of a general purpose computer to perform the analysis.” Ans. 3. According to the Examiner, the claims recite generic computer components performing generic computer functions that are well-understood, routine, and conventional activities amounting “to no more than implementing the abstract idea with a computerized system.” Ans. 7.

Appellants argue the claimed invention is a “solution [that] is rooted in computer technology,” analogous to *DDR*. App. Br. 24–25; see Reply Br. 9. According to Appellants, “claim 1 is directed to addressing a digitally-rooted challenge that is particular to computer technology, which in this instance involves executing a run-time ensemble part-of-speech tagging system voting on perspective part-of-speech tags and yielding a plurality of pre-processed part-of-speech tags when human review is impractical.” App. Br. 25.

We are not persuaded by Appellants’ arguments. Specifically, we disagree with Appellants that the claims in this case are directed to a computer-centric problem. Rather, the claims are broadly drafted to claim the general concept of sentiment analysis through the use of conventional devices. *E.g.*, *FairWarning IP, LLC v. Iatric Systems, Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016) (“requiring computer implementation of an otherwise abstract-idea process” does not make the claim patent eligible); *Affinity Labs of Texas, LLC v. DIRECTTV, LLC*, 838 F.3d 1253, 1262 (Fed. Cir. 2016) (“*DDR Holdings* dealt with a patent that required doing something *to* a web page, not simply doing something on a web page”). .

Furthermore, we agree with the Examiner’s finding that claims recite generic computer components performing generic computer functions that are well-understood, routine, and conventional activities amounting “to no more than implementing the abstract idea with a computerized system.” Ans. 7. Specifically, the Examiner finds “[n]othing in the claims, understood in light of the [S]pecification, requires anything other than off-the-shelf, conventional computer, network, and display technology for gathering, sending and presenting the desired information.” *Id.* at 6. This is

supported by Appellants' Specification, describing the computing device including "any type of computer, mobile phone, tablet device, and/or other type of computing device" that "can be implemented with various components, such as a processing system and memory." Spec. ¶ 44.

Accordingly, we sustain the Examiner's rejection of claim 1 as being directed to patent-ineligible subject matter, as well as commensurate independent claims 8 and 15, argued for the same reasons, and dependent claims 2–7, 9–14, and 16–20, not separately argued. *See* App. Br. 28–54.

#### DECISION

The Examiner's rejection of claims 1–20 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)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED