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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES RONALD BARFIELD JR. and
STEPHEN CHRISTOPHER WELCH

Appeal 2017-003028
Application 14/164,862[1]
Technology Center 3600

Before MAHSHID D. SAADAT, ERIC S. FRAHM, and
JAMES W. DEJMEK, *Administrative Patent Judges*.

DEJMEK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1, 2, and 4–21. Appellants have canceled claim 3. App. Br. 20. We have jurisdiction over the remaining pending claims under 35 U.S.C. § 6(b).

We affirm.

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[1] Appellants identify Verizon Communications Inc. and its subsidiary companies as the real parties in interest. App. Br. 3.

STATEMENT OF THE CASE

Introduction

Appellants' disclosed and claimed invention generally relates to creating a driver behavior prediction model based on driving and non-driving information. Spec. ¶ 23, Abstract. The information may be obtained from various sources, including sensors, devices, and databases. Spec. ¶ 23. In a disclosed embodiment, sensor information collected from a user device and a vehicle device may be analyzed to determine whether the user device was powered off while the vehicle was in operation. Spec. ¶¶ 62–73, Fig. 5. This behavior, referred to in the Specification as "suspicious behavior," may be used when creating a driver behavior prediction model. Spec. ¶ 73.

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

1. A system, comprising:

one or more devices configured to:

determine driving information associated with a group of users,

the driving information being based on sensor information collected by at least two of a group of user devices, a first group of vehicle devices used in association with a corresponding group of vehicles associated with the group of users, or a group of second vehicle devices installed in the corresponding group of vehicles,

when determining the driving information, the one or more devices are configured to:

determine, based on the sensor information, that a user device, of the group of user devices and associated with a user of the group of users, has been powered off for a threshold amount of time;

determine that a vehicle, of the corresponding group of vehicles and associated with the user, has been driven while the user device was powered off; and

determine, based on the user device having been powered off for the threshold amount of time, an activity of the vehicle while the user device was powered off based on the sensor information collected from at least one of the user device while the user device is powered on, a first vehicle device associated with the vehicle and included in the first group of vehicle devices, or a second vehicle device installed in the vehicle and included in the second group of vehicle devices,

where the driving information indicates the activity of the vehicle while the user device was powered off;

determine non-driving information associated with the group of users;

create a driver behavior prediction model based on the driving information and the non-driving information,

the driver behavior prediction model being based on the user device having been powered off for the threshold amount of time and the activity of the vehicle while the user device was powered off,

the driver behavior prediction model being a learning model type;

store the driver behavior prediction model,

the driver behavior prediction model permitting a driver prediction to be made regarding a particular user;

determine updated driver information associated with the group of users based on updated sensor

> information collected after collecting the sensor information;
>
> automatically update the driver behavior prediction model based on the updated driving information and the learning model type;
>
> determine a type of information, based on the driver behavior prediction model, required to generate the driver prediction for the particular user using the driver behavior prediction model;
>
> cause at least one of a user device or a vehicle device associated with the particular user to provide the type of information; and
>
> generate the driver prediction using the driver behavior prediction model based on the type of information being collected.

The Examiner's Rejection[2]

Claims 1, 2, and 4–21 stand rejected under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 3–5.

ANALYSIS[3]

Appellants dispute the Examiner's conclusion that the pending claims are directed to patent-ineligible subject matter under 35 U.S.C. § 101. App. Br. 9–16; Reply Br. 2–10. In particular, Appellants argue the Examiner

[2] The Examiner has withdrawn the rejection of claims 1, 2, and 4–21 under 35 U.S.C. § 103. Adv. Act. 2 (mailed February 2, 2016).

[3] Throughout this Decision, we have considered the Appeal Brief, filed April 18, 2016 ("App. Br."); the Reply Brief, filed December 21, 2016 ("Reply Br."); the Examiner's Answer, mailed November 2, 2016 ("Ans."); and the Final Office Action, mailed November 6, 2015 ("Final Act."), from which this Appeal is taken.

overgeneralizes the claims in concluding they are directed to an abstract idea. App. Br. 10–11; Reply Br. 5–7. Appellants contend the claims address a challenge particular to the realm of computer networks—"determining when a user device, responsible for gathering sensor data indicative of driving information, is powered off when a vehicle is driven, and determining an activity of the vehicle while the user device was powered off." App. Br. 10–11; Reply Br. 4. Appellants assert, therefore, the claims address a problem rooted in computer technology. Reply Br. 4. Additionally, Appellants assert that the claims recite significantly more than the Examiner's purported abstract idea by improving "the technical field of remotely monitoring activities of a vehicle" and/or improving the technical field of computer networks. App. Br. 12–13; Reply Br. 8–10.

The Supreme Court's two-step framework guides our analysis. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). If a claim falls within one of the statutory categories of patent eligibility (i.e., a process, machine, manufacture or composition of matter) then the first inquiry is whether the claim is directed to one of the judicially recognized exceptions (i.e., a law of nature, a natural phenomenon, or an abstract idea). *Alice*, 134 S. Ct. at 2355. If so, the second step is to determine whether any element, or combination of elements, amounts to significantly more than the judicial exception. *Alice*, 134 S. Ct. at 2355.

Although the independent claims each broadly fall within the statutory categories of patentability, the Examiner concludes the claims are directed to a judicially recognized exception—i.e., an abstract idea. Final Act. 3–5. In particular, the Examiner concludes the claims are "directed to the abstract idea of applying a usage based insurance (UBI) technique to create a driver

behavior prediction model." Final Act. 3. Further, the Examiner finds the claims recite generic computer elements (or instructions) to perform generic computer functions that are well-understood, routine, and conventional activities and, accordingly, concludes the claims do not recite significantly more to transform the abstract idea into a patent-eligible application. Final Act. 4–5.

Instead of using a definition of an abstract idea, "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." *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294 (Fed. Cir. 2016) (citing *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–54 (Fed. Cir. 2016)); *accord* United States Patent and Trademark Office, July 2015 Update: Subject Matter Eligibility 3 (July 30, 2015), https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf (instructing Examiners that "a claimed concept is not identified as an abstract idea unless it is similar to at least one concept that the courts have identified as an abstract idea."). As part of this inquiry, we must "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., LLC v. DirecTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Our reviewing court has concluded that abstract ideas include the concepts of collecting data, recognizing certain data within the collected data set, and storing the data in memory. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014); *see also Smart Sys. Innovations, LLC v. Chicago Transit Authority*, 873 F.3d

1364, 1372 (Fed. Cir. 2017) (concluding "claims directed to the collection, storage, and recognition of data are directed to an abstract idea"). Additionally, the collection of information and analysis of information (e.g., recognizing certain data within the dataset) are also abstract ideas. *Elec. Power*, 830 F.3d at 1353. Similarly, simply "collecting, displaying, and manipulating data" is an abstract idea. *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017). Also, more recently, our reviewing court has also concluded that acts of parsing, comparing, storing, and editing data are abstract ideas. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1366 (Fed. Cir. 2018).

Further, merely combining several abstract ideas does not render the combination any less abstract. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("Adding one abstract idea (math) to another abstract idea . . . does not render the claim non-abstract."); *see also FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (determining the pending claims were directed to a combination of abstract ideas).

Here, Appellants' claims are directed to the creation of a driver behavior prediction model based on driving and non-driving information. The driving information is determined by collecting and analyzing data collected from a plurality of sensors (i.e., at least two of a group of user devices, a first group of vehicle devices associated with the group of users, or a second group of vehicle devices). As part of the data analysis, a determination may be made that the driving information indicates the activity of the vehicle while the user device was powered off. Further, the driver behavior prediction model may be updated (i.e., a learning model)

based on subsequently collected sensor information. The claims also recite the driver behavior prediction model may be used to generate a driver prediction for a particular user based on determined information. Our understanding and characterization of the claims, similar to the Examiner's, is also consistent with Appellants' description. *See* Spec. ¶¶ 16–17, 162, Abstract.

Contrary to Appellants' assertions (*see, e.g.*, App. Br. 10–13; Reply Br. 2–4), the claims are not directed to addressing a challenge that is particular to the realm of computer networks. Rather, the determination that a user device was powered off while a vehicle was driven is similar to the collection, analysis, and recognition of certain data (i.e., that a device was powered off while other data indicates the vehicle had been driven) that the courts have held to be abstract. *See Elec. Power*, 830 F.3d at 1353; *see also Content Extraction*, 776 F.3d at 1347; *Smart Sys.*, 873 F.3d at 1372. Additionally, using the collected data (both driving and non-driving information) to generate a model to predict driver behavior is similar to the abstract ideas of collecting and manipulating data to customize the information and present it based on particular characteristics. *See Intellectual Ventures*, 850 F.3d at 1340; *Berkheimer*, 881 F.3d at 1366. Further, we note, analyzing information either by steps that one may perform in their mind or by mathematical algorithm has also been determined to be abstract. *Elec. Power*, 830 F.3d at 1354; *see also Digitech Image Techs., LLC v. Elec. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (concluding "a process of organizing information through mathematical correlations and is not tied to a specific structure or machine" to be abstract); *Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314,

1324 (Fed. Cir. 2016) (holding that claims are abstract where they "recite nothing more than the collection of information to generate a 'credit grading' and to facilitate anonymous loan shopping"). Thus, we agree with the Examiner that the claims, as a whole, are directed to a combination of abstract concepts.

Because we determine the claims are directed to an abstract idea or combination of abstract ideas, we analyze the claims under step two of *Alice* to determine if there are additional limitations that individually, or as an ordered combination, ensure the claims amount to "significantly more" than the abstract idea. *Alice*, 134 S. Ct. at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71–72, 77–80 (2012)). The implementation of the abstract idea involved must be "more than [the] performance of 'well-understood, routine, [and] conventional activities previously known to the industry.'" *Content Extraction*, 776 F.3d at 1347–48 (quoting *Alice*, 134 S. Ct. at 2359) (alteration in original). "Whether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent is a factual determination." *Berkheimer*, 881 F.3d at 1369.

We agree with the Examiner that the additional limitations, separately, or as an ordered combination, do not provide meaningful limitations (i.e., do not add significantly more) sufficient to transform the abstract idea into a patent-eligible application. Final Act. 4–5; Ans. 8–9.

Appellants assert, without supporting evidence, "using sensor information to determine an activity of the vehicle while the user device was powered off is not well-understood, routine, and conventional in the field of UBI techniques." App. Br. 13–14. As an initial matter, it is well settled that

mere attorney arguments and conclusory statements, which are unsupported by factual evidence, are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (attorney argument is not evidence). The Specification describes the user devices, vehicle devices, and associated sensors generically. For example, the user devices may include a smart phone, tablet computer, or a wearable computing device. Spec. ¶ 25. Sensors associated with a user device (or vehicle device) may include an accelerometer, location sensor (e.g., a GPS sensor), a camera, or an audio sensor. Spec. ¶¶ 26, 27. The devices/sensors provide their output to a controller (i.e., "a microcontroller, a processor, or another processing device") for processing. Spec. ¶¶ 33–44, Figs. 3A, 3B. We agree with the Examiner (*see* Ans. 8) that filtering the data collected by the sensors, as discussed above, does not amount to significantly more than the abstract idea itself.

Appellants' reliance on *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014) is also unavailing. *See* App. Br. 11; Reply Br. 2–3. In *DDR*, the court concluded the claims were patent eligible under step two of the *Alice* because "the claimed solution amount[ed] to an inventive concept for resolving [a] particular Internet-centric problem," i.e., a challenge unique to the Internet. *DDR Holdings*, 773 F.3d at 1257–59. However, according to the Federal Circuit, "*DDR Holdings* does not apply when . . . the asserted claims do not 'attempt to solve a challenge particular to the Internet.'" *Smart Sys. Innovations*, 873 F.3d at 1375 (quoting *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). Contrary to Appellants' assertions, the claims here do not address a similar problem and do not contain a similar inventive concept. Nor do we find

persuasive Appellants' contentions that the claims improve a technical field (i.e., remotely monitoring activities of a vehicle) or the technical field of computer networks. App. Br. 12–13; Reply Br. 8–9. Rather, we agree with the Examiner that the claims "provide a generically computer-implemented solution to a business-related or economic problem," i.e., predicting driver behavior for usage-based insurance applications. Ans. 6.

Additionally, to the extent Appellants argue the claims recite features that confine the claims to a particular application (*see* App. Br. 14), we agree with the Examiner that the additional limitations "do not add significantly more because they are simply an attempt to limit the abstract idea to a particular technological environment." Ans. 9; *see also Intellectual Ventures*, 850 F.3d at 1340 (limiting an invention to a technological environment for which to apply the underlying abstract concept does not make an abstract concept any less abstract).

For the reasons discussed *supra*, we are unpersuaded of Examiner error. Accordingly, we sustain the Examiner's rejection under 35 U.S.C. § 101 of independent claim 1. For similar reasons, we also sustain the Examiner's rejection of independent claims 8 and 15, which recite similar limitations and were not argued separately. *See* App. Br. 9–16; *see also* 37 C.F.R. § 41.37(c)(1)(iv) (2015). Additionally, we sustain the Examiner's rejection of claims 2, 4–7, 9–14, and 16–21, which depend directly or indirectly therefrom and were not argued separately. *See* App. Br. 9–16; *see also* 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner's decision rejecting claims 1, 2, and 4–21 under 35 U.S.C. § 101.

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