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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VAIBHAV KHANDUJA, SRIJAY JAYAPALAN, and
STEFAN BERGSTEIN¹

Appeal 2015-001261
Application 12/548,987
Technology Center 2100

Before BRUCE R. WINSOR, AARON W. MOORE, and
DAVID J. CUTITTA II, *Administrative Patent Judges*.

CUTITTA, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1–4, 7, 10, 13, 14, and 17–20. Claims 5, 6, 8, 9, 11, 12, 15, 16, and 19² are objected to but would be allowable if rewritten in independent form. We have jurisdiction over this appeal under 35 U.S.C. § 6(b). We AFFIRM.³

¹ According to Appellants, the real party in interest is Hewlett-Packard Development Company, LP. *See* Appeal Brief 2.

² While the Examiner indicates claim 19 is objected to but would be allowable if rewritten in independent form, we note that the Examiner also rejects claim 19 under 35 U.S.C. § 101.

³ Throughout this Opinion, we refer to: (1) Appellants' Specification filed Aug. 27, 2009 (Spec.); (2) the Final Office Action (Final Act.) mailed Jan. 2, 2014; (3) the Appeal Brief (Appeal Br.) filed May 2, 2014; (4) the

BACKGROUND

According to Appellants, the application relates to a method of processing network activity data that uses causal models, based on Bayesian probability theories, to correlate network activity and identify symptom and cause relationships between network events. Spec. ¶ 8. The relationships in the causal models may be assigned a probability representing the likelihood of a causal relationship between the symptom event and the cause event, generated at least in part based on Bayesian statistics. *Id.* Claim 1 is reproduced below with disputed limitation emphasized:

1. A method of processing network activity data, comprising:
 - receiving network activity data;
 - generating an event based on the network activity data;
 - generating a probability based at least in part on Bayesian statistics, the probability corresponding to a likelihood that the event caused or was caused by another event;* and
 - generating an event message corresponding to the event based on the probability.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal:

Nodelman et al. (hereinafter “Nodelman”)	US 2005/0021485 A1	Jan. 27, 2005
Galitsky et al. (hereinafter “Galitsky”)	US 2009/0089252 A1	Apr. 2, 2009

Examiner’s Answer (Ans.) mailed August 25, 2014; and (5) the Reply Brief (Reply Br.) mailed October 21, 2014.

REJECTIONS

Claims 18–20 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Final Act. 2.

Claims 1–4, 7, 10, 13, 14, 17, 18, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nodelman and Galitsky. Final Act. 3–15.

Our review in this appeal is limited only to the above rejections and issues raised by the Appellants. We have not considered other possible issues that have not been raised by Appellants and which are, therefore, not before us. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2013).

ISSUES

1. Has the Examiner erred in concluding the invention, as recited in claim 18, is directed to non-statutory subject matter?

2. Did the Examiner err in finding the combination of Nodelman and Galitsky teaches or suggests “generating a probability based at least in part on Bayesian statistics, the probability corresponding to a likelihood that the event caused or was caused by another event,” as recited in claim 1?

DISCUSSION

35 U.S.C. § 101: Claims 18–20

The Examiner rejects claims 18–20 under 35 U.S.C. § 101 as directed to non-statutory subject matter because the broadest reasonable interpretation of the claims in view of Appellants’ Specification “would include signals and/or carrier waves and therefore these claims are considered patent ineligible.” Final Act. 2; Ans. 3.

We agree with the Examiner’s conclusion. Claim 18 recites “[a] tangible, computer-readable medium, comprising code.” Appeal Br. 21 (Claims Appendix). We first note that the recited “tangible, computer-readable medium” is not claimed as non-transitory. *Id.* Second, limiting the computer-readable medium as tangible does not exclude a signal per se, because a signal can be physical or tangible while still being transitory and therefore non-statutory subject matter. *See In re Nuijten*, 500 F.3d 1346, 1353–57 (Fed. Cir. 2007) (tangible but transitory embodiments are not directed to statutory subject matter). Third, the Specification does not specifically define “tangible, computer-readable medium” to exclude signal propagation medium or transitory medium. *See* Spec. ¶ 27.

Appellants contend the Specification describes only a list of tangible, non-transitory media and, accordingly, “a broadest reasonable interpretation of this list cannot be extended to include transitory media such as signals and/or carrier waves.” Appeal Br. 8 (citing Spec. ¶ 27).

We are not persuaded by Appellants’ argument. Appellants’ Specification states “[t]he tangible, machine-readable medium 300 can comprise RAM, a hard disk drive, an array of hard disk drives, an optical drive, an array of optical drives, a non-volatile memory, a USB drive, a DVD, a CD, *and the like*.” Spec. ¶ 27 (emphasis added). Thus, Appellants have not narrowly defined the computer readable storage medium, but, instead, have described the term in an open-ended manner.

Accordingly, we find that the broadest reasonable interpretation of the term “tangible, computer-readable medium,” in view of Appellants’ Specification, includes transitory propagating signals. *See Ex parte Mewherter*, 107 USPQ2d 1857, 1862 (PTAB 2013) (precedential) (holding

that where a specification does not limit the term “machine readable storage medium” expressly to exclude signals, carrier waves, and other transitory media, the term encompasses transitory propagating signals).

Appellants are not precluded from amending these claims to overcome this rejection. Guidance on this point is provided in U.S. Patent & Trademark Office, Subject Matter Eligibility of Computer Readable Media, 1351 Off. Gaz. Pat. Office 212 (Feb. 23, 2010) (“A claim drawn to such a computer readable medium that covers both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by adding the limitation ‘non-transitory’ to the claim.”). *See also* U.S. Patent & Trademark Office, Evaluating Subject Matter Eligibility Under 35 USC § 101 (August 2012 Update) (pp. 11–14), available at http://www.uspto.gov/patents/law/exam/101_training_aug2012.pdf (noting that while the recitation “non-transitory” is a viable option for overcoming the presumption that those media encompass signals or carrier waves, merely indicating that such media are “physical” or “tangible” will not overcome such presumption).

Accordingly, because we are not persuaded the invention as recited is limited to statutory subject matter, we sustain the rejection of claims 18–20 under 35 U.S.C. § 101.

35 U.S.C. § 103: Claims 1–4, 7, 10, 13, 14, 17, 18, and 20

After review of Appellants’ arguments and the Examiner’s findings and reasoning, we determine that Appellants have not identified error in the Examiner’s rejection of claim 1. Accordingly, we affirm the rejection for

reasons set forth by the Examiner in the Final Office Action and the Answer. *See* Final Act. 3–5; Ans. 4–9. We add the following for emphasis.

Appellants assert their invention is not obvious over Nodelman and Galitsky (Appeal Br. 9–13). Specifically, Appellants contend “to the extent that the probabilistic inferences of Nodelman are based on events, such probabilistic inferences do not determine causation between events.”

Appeal Br. 13 (citing Nodelman ¶¶ 12 and 13).

We disagree, noting the Examiner correctly finds that Nodelman’s discussion of using “inferences,” obtained from continuous time Bayesian networks, to construct “new events or actions from a set of observed events” “teaches or suggests generating a . . . probability corresponding to a likelihood that the event caused or was caused by another event.” Final Act. 3–4; Ans. 4–6. Illustrating that the Examiner correctly applied the cited passages of Nodelman in discussing the use of learning models such as the Bayesian learning models, Nodelman indicates that “rather than a more thorough probabilistic approach, *deterministic assumptions* can also be employed (e.g., no desktop activity for X amount of time may imply by rule that user is not at work).” Nodelman ¶ 41 (emphasis added). Thus, one of ordinary skill in the art would have understood Nodelman’s teachings to be directed at determining causal relationships between a caused event (i.e., desktop inactivity) and a causing event (i.e., user is not at work), whether by a probabilistic approach or deterministic assumptions. Accordingly, the Examiner correctly finds that Nodelman teaches using Bayesian statistics to determine that an event caused or was caused by another event (Ans. 4–6) such as no desktop activity being determined as caused by the user not being at work. Appellants further contend the “Examiner appears to assert that the

Bayesian statistics inherently discloses determining a causal relationship between events.” Appeal Br. 13. The Examiner clarifies, however, that she does not rely on a theory of inherency. Ans. 4. We agree that the Examiner need not rely on inherency to establish that Nodelman teaches or suggests determining a causal relationship between events, as discussed above with respect to Nodelman’s teaching of “deterministic assumptions” in lieu of a probabilistic approach. *See, e.g.*, Nodelman ¶ 41.

Appellants contend that Nodelman fails to teach “receiving network activity data.” Appeal Br. 12. Specifically, Appellants state “to the extent that Nodelman discloses collecting activity data, such activity data are merely related to the activity of users interacting with various devices.” *Id.*

We disagree, noting the Examiner correctly finds data-acquisition component 210 detects, *inter alia*, “computer usage activity 214” on multiple computers, components, or devices that a user is likely to employ. Ans. 5 (citing Nodelman ¶ 52). Nodelman indicates that at least one of the computers or components may be networked. Nodelman ¶ 46. Nodelman further discusses that the continuous time Bayesian networks may use the acquired usage activity to predict system “resource requirements.” Nodelman ¶ 28. Accordingly, we agree with the Examiner’s finding that Nodelman teaches or suggests “receiving network activity data,” as claimed. Final Act. 3.

Appellants contend that Nodelman fails to teach “generating an event based on the network activity data,” as defined by the Specification, because Nodelman instead discusses “user activity and events.” Appeal Br. 11–12. Appellants’ arguments regarding Nodelman are not persuasive because the Examiner relies upon Galitsky to teach or suggest the disputed claim

elements and thus the arguments are unresponsive to the rejection. Final Act. 4.

Accordingly, we sustain the Examiner's 35 U.S.C. § 103(a) rejection of claim 1. We also sustain the Examiner's 35 U.S.C. § 103(a) rejection of claims 10 and 18, which Appellants argue are patentable for similarly unpersuasive reasons. App. Br. 16–17.

Appellants do not make any other substantive argument regarding the rejection of dependent claims 2–4, 7, 13, 14, 17, and 20. *Id.* Therefore, we likewise sustain the rejections of these dependent claims under 35 U.S.C. § 103(a).

DECISION

The Examiner's rejection of claims 18–20 under 35 U.S.C. § 101 as being directed to non-statutory subject matter is affirmed.

The Examiner's rejection of claims 1–4, 7, 10, 13, 14, 17, 18, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Nodelman and Galitsky 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