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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARTIN O'CONNOR, QIANQIU ZHU, and DANIEL RICHARD[1]

Appeal 2017-006141
Application 13/729,901
Technology Center 2100

Before CARLA M. KRIVAK, BRADLEY W. BAUMEISTER, and NABEEL U. KHAN, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–25. *See* App. Br. 2 and 24–25.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] Equifax, Inc. is listed as the real party in interest. App. Br. 2.

[2] Rather than repeat the Examiner's positions and Appellants' arguments in their entirety, we refer to the following documents for their respective details: the Final Action mailed January 21, 2016 ("Final Act."); the Appeal Brief filed August 22, 2016 ("App. Br."); the Examiner's Answer mailed December 21, 2016 ("Ans."); and the Reply Brief filed February 20, 2017 ("Reply Br.").

STATEMENT OF THE CASE

Appellants describe the present invention as follows:

> Various embodiments of the present invention provide systems, methods, and computer-program products for fusing at least two scores. In various embodiments, at least two scores are received in which each score predicts the probability of an outcome associated with a particular unit. In particular embodiments, [a] mass and a distance are calculated between two objects based on the at least two scores in which the first of the two objects is a constant and the second of the two objects comprises one or more characteristics of the particular unit. Further, in particular embodiments, a gravitational force between the two objects is calculated based on the mass and the distance and this gravitational force is used as a fused score for the at least two scores.

Abstract.

Independent claim 1, reproduced below, is illustrative of the appealed claims:

> 1. A method for determining the creditworthiness of an individual, said method comprising said steps of:
>
> receiving, via one or more processors, at least two scores, wherein each score represents a different aspect of the creditworthiness of an individual;
>
> calculating, via the one or more processors, a mass and a distance between two objects based on said at least two scores, wherein said mass of a first of said two objects is identified based at least in part on a constant and said mass of a second of said two objects is identified based at least in part on said at least two scores and said second of said two objects comprises one or more characteristics of said individual;
>
> calculating, via the one or more processors, a gravitational force between said two objects based on said mass of said first of said two objects, said mass of said second of said two objects, and said distance, wherein said gravitational force is used as a fused score for said at least two scores; and

> determining, via the one or more processors, whether said individual is likely to qualify for a financial product based on said fused score for said at least two scores.

Claims 1–25 stand rejected under 35 U.S.C. § 101 as being directed to patent ineligible subject matter. Final Act. 3–5.

Claims 1, 2, 7–10, 15–18, and 23–25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Zarikian (US 2010/0145847 A1; published June 10, 2010) and Wolman (US 6,968,342 B2; issued Nov. 22, 2005). Final Act. 8–13.[3]

We review the appealed rejections for error based upon the issues Appellants identified, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

THE NON-STATUTORY SUBJECT MATTER REJECTION

Findings and Contentions

The Examiner rejects claims 1–25 as being directed to patent ineligible subject matter because the claims as a whole are directed to an abstract idea. Final Act. 4. Specifically, the Examiner finds that the present claims are directed to the abstract idea of deciding credit worthiness, which is similar to the claimed abstract idea of hedging to manage risk, which the *Bilski* Court found to be patent ineligible. *Id.* (citing *Bilski v. Kappos*, 561 U.S. 593 (2010). The Examiner further finds that the claims do not include additional elements that are sufficient to amount to significantly more than

[3] The Final Action's heading of the rejection omits claim 25 from the list of claims subject to the obviousness rejection. Final Act. 8. We find this omission to constitute harmless error because claim 25 is expressly addressed in the body of the obviousness rejection. *See* Final Act. 12.

the abstract idea of deciding credit worthiness. *Id.* Rather, the additional elements, in the Examiner's opinion, merely are directed to modeling of mathematical predictions about future behavior or abstract mathematical optimization techniques. *Id.* at 5.

Arguing all of the claims together as a single group (App. Br. 9–16), Appellants argue, for example,

> the claims are directed to a highly computer-specific system for determining the creditworthiness of an individual utilizing computer-specific features and/or steps. Specifically, . . . one or more computing applications are utilized for receiving the various scores for a particular individual, and for ultimately performing the score fusion process for each of the received scores. . . . The computing entities performing the score fusion process are configured to receive data indicative of the scores to be fused from various sources, including various predictive score applications configured to provide various scores having a low correlation therebetween. . . . The computing entity performing the score fusion process thereafter fuses multiple scores in a single score fusion process, thereby minimizing the computing resources necessary to complete the score fusion process.

App. Br. 12 (citing Spec. ¶¶ 49, 52–53).

Analysis

Appellants' contentions do not persuade us of error. We adopt as our own (1) the findings and reasons set forth by the Examiner in the Final Action from which the appeal is taken and (2) the reasons set forth by the Examiner in the Examiner's Answer in response to Appellants' Appeal Brief. We likewise concur with the conclusions reached by the Examiner.

As a matter of completeness, we additionally note that claim 1 merely recites a step of receiving data into a computer, two steps of performing mathematical calculations on the inputted data, and a final step of using a computer to calculate a result or determine "whether said individual is likely

to qualify for a financial product based on said fused score for said at least two [input] scores." *See* claim 1. Even assuming *arguendo* that the mathematical formulas used in the calculations are novel, that fact would not cause the claims to be directed to a computer-specific or inherently technological problem. In such a case, the claims still would be directed merely to a method of using common computers in their conventional and typical manner of performing mathematical calculations based on whatever mathematical formulas are programmed or stored on the computer.

We disagree with Appellants' assertion that the present claims are analogous to those in *DDR Holdings, LLC v. Hotels.cm, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). App. Br. 15. We find insufficient evidence that the present claims relate to a problem specifically arising in the realm of computer networks, much less that the claims are directed to, or rooted in, computer technology that overcomes such computer-related problems. Appellants do not point to any passage of the Specification in support of their assertion (App. Br. 12) that the present invention minimizes computer resources. As explained above, the claims instead are directed to using mathematical algorithms to make business decisions about whether to offer to contract with an individual (i.e., decide whether to offer an individual a financial product based upon on a calculated risk).

For the foregoing reasons, Appellants have not persuaded us of error in the Examiner's conclusion that the claims are directed to patent ineligible abstract ideas. Accordingly, we sustain the Examiner's rejection under 35 U.S.C. § 101 of claims 1–25. *See* 37 C.F.R. § 41.37(c)(1)(iv):

> When multiple claims subject to the same ground of rejection are argued as a group or subgroup by appellant, the Board may select a single claim from the group or subgroup and may decide the

> appeal as to the ground of rejection with respect to the group or subgroup on the basis of the selected claim alone.

THE OBVIOUSNESS REJECTION

Findings and Contentions

The Examiner finds that Zarikian discloses all of the limitations of independent claim 1 except that "Zarikian does[] not explicitly disclose calculating, via the one or more processors, a mass and a distance between two objects based on said at least two scores." Final Act. 9–10. The Examiner additionally finds that "Zarikian does[] not explicitly disclose calculating, via the one or more processors, a gravitational force between said two objects based on said mass and said distance, wherein said gravitational force is used as a fused score for said at least two scores." *Id.* at 10.

The Examiner finds that Wolman, in contrast, teaches calculating a mass. *Id.* (citing Wolman col. 8, ll. 1–12 for teaching weight matrices). The Examiner finds that Wolman teaches calculating a distance between two objects. Final Act. 10 (citing Wolman col. 8, ll. 36–45 for teaching generalized gravitational clustering measures that include a distance function). The Examiner also finds that Wolman teaches these calculated distances are based on two scores. Final Act. 10 (citing Wolman col. 8, ll. 1–12 for teaching "*[d]ifferences between individual configurations are expressed in terms of this characteristic object with these differences encoded in the weight matrices*").

The Examiner further finds that "Zarikian does[] not explicitly disclose calculating, via the one or more processors, a gravitational force between said two objects based on said mass and said distance, wherein said

gravitational force is used as a fused score for said at least two scores." Final Act. 10. The Examiner finds that Wolman teaches this missing limitation. Final Act. 10–11 (citing Wolman col. 2, ll. 23–32; col. 6, l. 59–col. 7, l. 11; col. 7, l. 60–col. 8, l. 63; Examples D and E (cols. 11–15); col. 15, ll. 25–35; col. 8, ll. 1–12). The Examiner concludes

> It would have been obvious . . . to modify the teachings of Zarikian by incorporating the step of calculating[] a gravitational force between said two objects based on said mass and said distance, wherein said gravitational force is used as a fused score for said at least two scores as taught by Wolman for the purpose of providing to an effective tool for merging or fusion of ordinal data which results in a ratio measurement level merged value.

Final Act. 11 (citing Wolman col. 1, ll. 15–20).

Appellants argue, *inter alia*,

> *Wolman* is directed to systems and methods for merging multiple data sets into a single data set. The Examiner effectively suggests that merging sets of data into another compressed set is "close enough" to concepts for merging a plurality of individual scores into one, single fused score that is reflective of the creditworthiness of an individual. A closer consideration of *Wolman's* disclosure, however, reveals that utilizing *Wolman's* matrix fusion process to produce individual fused scores for various individuals would result in an utterly worthless set of data comprising multiple numbers that are not indicative of the creditworthiness of any one individual. *Wolman's* methodology would appear to suggest that scores from multiple individuals could be combined to create a variety of numbers that each incorporate aspects of several individuals' predictive scores, rather than providing a single score that incorporates aspects of a single individual's creditworthiness.

App. Br. 18.

The Examiner responds to Appellants' argument with the following reasoning:

> Wolman, *(in column 2 lines 23–45; column 6 line 59 to column 7 line 11; column 7 line 60 to column 8 line 63; column*

> *8 lines 1-12)* shows a generalized gravitational model computations-wherein the collection of input data structures, whose values (i.e. score) are fused through energy minimization to create a compressed representations of the input data structures, energy minimization is based on the gravitational model. These collections of input data structures (i.e. multiple scores) are construed as individual scores and the compressed data (Note that it could be single value or vector) produced from these data structures (i.e. scores) by an energy minimization Technique is construed as the fused score because energy minimization is based on the gravitational model which is analogous to the claimed limitation of generating a single fused score based on at least two scores.

Ans. 10.

Analysis

Even if we were to assume that Zarikian's invention hypothetically could be modified by Wolman's teachings so as to result in the present invention, as claimed, we nonetheless conclude that the Examiner has not established sufficient motivation existed to combine the references in a manner recited by the claimed method.

We agree with Appellants that "*Wolman*'s disclosure focuses primarily on systems and methods for merging multiple data sets into a single data set. Wolman includes nothing more than passing references to a generic gravitational model, and does not provide any detail regarding how such a model may be used to merge any data types." Reply Br. 13.

As such, the Examiner has not provided sufficient reasoning for why one who is designing an adjusted credit risk score process according to Zarikian, would have used Wolman's superficially mentioned generalized gravitation clustering model specifically in the manner recited by the independent claims. The rejection's manner of combining the cited

references appears to be the product of the Examiner using Appellants' claims as a roadmap. Such bases for combining references constitutes impermissible hindsight.

DECISION

The Examiner's decision rejecting claims 1–25 under 35 U.S.C. § 101 is affirmed.

The Examiner's decision rejecting claims 1, 2, 7–10, 15–18, and 23–25 under 35 U.S.C. § 103(a) is reversed.

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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED