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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAJESH BALCHANDRAN,
LEONID RACHEVSKY, and BHUVANA RAMABHADRAN

Appeal 2016-000499
Application 13/251,322¹
Technology Center 2600

Before DEBRA K. STEPHENS, KARA L. SZPONDOWSKI, and
SHARON FENICK *Administrative Patent Judges.*

FENICK, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's non-final rejection of claims 1–7 and 9–13. Claim 8 has been canceled. (Claims App'x.) We have jurisdiction under 35 U.S.C. § 6(b)(1).

We affirm.

Invention

Appellants' invention relates to the automatic processing of text data. Tags are developed to characterize the text data, and then higher order

¹ Appellants identify Samsung Electronics Co., Ltd. as the real party in interest. (Appeal Br. 4.)

entities are determined which are characteristic of patterns in the data tags.
(Abstract.)

Representative Claim

Claim 1, reproduced below, is representative:

1. A method of automatically processing text data comprising:

developing an initial set of data tags characterizing text data in a text database;

automatically determining higher order entities characteristic of patterns in the data tags, the higher order entities including user intentions present within the text data; and

automatically tagging the text data based on the higher order entities.

References and Rejections

The Examiner rejects claims 1, 2, 7, 11 (when dependent from claims 1, 2, or 7), 12 (when dependent from claims 1, 2, or 7), and 13 under 35 U.S.C. § 102(b) as anticipated by Mao et al. (“Mao”) (US 2002/0151294 A1; Oct. 17, 2002). (Non-Final Action 3–9.)

The Examiner rejects claims 3–5, 9, 11 (when dependent from claims 3–5 or 9), and 12 (when dependent from claims 3–5 or 9) under 35 U.S.C. § 103(a) as unpatentable over Mao and Houghton (US 2010/0293195 A1; Nov. 18, 2010). (Non-Final Action 9–11.)

The Examiner rejects claims 6, 11 (when dependent from claim 6), and 12 (when dependent from claim 6) under 35 U.S.C. § 103(a) as unpatentable over Mao, Houghton, and Okimoto et al. (US 2005/0256715 A1; Nov. 17, 2005). (Non-Final Action 11–12.)

The Examiner rejects claims 10, 11 (when dependent from claim 10), and 12 (when dependent from claim 10) under 35 U.S.C. § 103(a) as unpatentable over Mao and Murata et al. (US 2009/0210411 A; Aug. 20, 2009). (Non-Final Action 13–14.)

Issues

(A) Did the Examiner err in finding Mao discloses “higher order entities characteristic of patterns in the data tags,” as recited in claim 1?

(B) Did the Examiner err in finding Mao discloses “higher order entities including user intentions present within the text data,” as recited in claim 1?

ANALYSIS

(A) “higher order entities characteristic of patterns in the data tags”

The Examiner finds that Mao discloses all the elements of claim 1, including the determination of higher order entities. (Non-Final Action 4.)

Mao is directed towards the determination, given a cluster of words and phrases extracted from a document, of dominant concepts for the given cluster. (Mao ¶¶ 27, 47–61, Fig. 3.) During this process, word sense disambiguation is performed for words which have more than one possible usage. (*Id.* ¶ 52.) To do this, “definition vectors” representing the possible word senses are determined for each word, and definition vectors are selected to represent the most similar senses for the words. (*Id.*) After this, the selected definition vectors are clustered to determine “dominant concepts” among the words and phrases. (*Id.* ¶¶ 53–58.) A lexical database is used to generate a term for dominant concepts, which may be grouped into a hierarchy of concepts. (*Id.* ¶¶ 60–61.)

Appellants argue Mao does not disclose in its definition vectors “higher order entities,” and specifically, that definition vectors are not higher order entities because they are not distinct from the original words and phrases (“data tags” in the Specification.) (Appeal Br. 8–9.) Appellants additionally argue the definition vectors do not meet the claim limitation that higher order entities be “characteristic of patterns in the data tags.” (*Id.* 9.)

In finding Mao discloses the claimed subject matter, the Examiner cites the grouping of disambiguated definition vectors into clusters. (Non-Final Action 4, citing Mao ¶ 53, element 105 of Fig. 3.) We agree with the Examiner’s finding that the clusters of Mao are higher order entities. While we do not agree, as Appellants argue, the claim includes any limitation that the claimed higher order entities be distinct from original words and phrases, Mao teaches that “the lexical database is used to generate a term for each . . . dominant concept,” (Mao ¶¶ 49, 60) and thus, Mao’s clusters additionally are labeled with terms from the lexical database, not from the original words and phrases from the document. Mao’s discussion of the clusters describes how concepts are generated based on support in the definition vectors contained in the cluster. (*Id.* ¶¶ 27–28, 53–58.) Therefore, we find no error in the Examiner’s finding that the division of definition vectors into groups or clusters discloses the claimed higher order entities characteristic of patterns in the data tags.

(B) “higher order entities including user intentions present within the text data”

The Examiner finds Mao discloses higher order entities including user intentions present within the text data, in Mao’s disclosure that dominant concepts are related to a majority of words in the cluster. (Non-Final Action 4 (citing Mao ¶ 58.)) Appellants argue that the Examiner’s focus on the user

specification of parameters regarding the process is the only teaching or suggestion of user intention, and that these do not relate to user intentions present in the text data. (Appeal Br. 9.) However, Appellants do not address the Examiner's findings regarding Mao's clusters being characteristic of patterns in the original corpus of words and phrases, and with dominant concepts in each cluster, related to a majority of words in that cluster, being identified and used as labels for the cluster. (Non-Final Action 4.)

With respect to "user intentions" we find no express definition in the Specification for this term, and only passing mention of user intentions (e.g. as a "key concept" in input data) in the Specification. (Spec. ¶¶ 6, 17; originally-filed claim 8.) Mao variously discloses that the classification of documents is intended to determine the pertinence of documents (Mao ¶ 4), the "essence" of documents (*id* ¶ 6), or the "context, essence or the import" of documents (*id* ¶ 7). We agree with the Examiner, taking a broad, but reasonable interpretation in light of Appellants' Specification, that Mao's identification of dominant concepts discloses the claimed inclusion of "user intentions present within the text data" in the identification of the pertinence/essence/import of a document via determination of dominant concepts.

Thus, we are not convinced the Examiner erred in rejecting claim 1, or dependent claims 2–7 and 9–13 argued on the same bases, and we sustain the Examiner's rejection of these claims under 35 U.S.C. § 102(b) (claims 1, 2, 7, 11 (when dependent from claims 1, 2, or 7), 12 (when dependent from claims 1, 2, or 7), and 13) as anticipated by Mao; and under 35 U.S.C. § 103(a) (claims 3–6, 9, 10, 11 (when dependent from claims 3–5, 9, or 10),

and 12 (when dependent from claims 3–5, 9, or 10)) as obvious over Mao in various combinations with the other cited prior art.

DECISION

We affirm the Examiner’s rejection of claims 1, 2, 7, 11 (when dependent from claims 1, 2, or 7), 12 (when dependent from claims 1, 2, or 7), and 13 under 35 U.S.C. § 102(b) as anticipated.

We affirm the Examiner’s rejection of claims 3–6, 9, 10, 11 (when dependent from claims 3–5, 9, or 10), and 12 (when dependent from claims 3–5, 9, or 10) under 35 U.S.C. § 103(a) as unpatentable.

Pursuant to 37 C.F.R. § 1.136(a)(1)(iv), no time period for taking any subsequent action in connection with this appeal may be extended.

AFFIRMED