Exhibit 28

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK
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NETWORK-1 TECHNOLOGIES, INC.,)
)
Plaintiff,)
) Civ. No.
vs.) 1:14-cv-02396
) (PGG)
GOOGLE, INC. and YOUTUBE, LLC,)
)
Defendants.)
----------X
June 12, 2015
9:00 a.m.

* C O N F I D E N T I A L *
UNDER THE PROTECTIVE ORDER

VIDEOTAPED DEPOSITION OF INGEMAR J. COX, Ph.D., taken by Defendants, held at the offices of Amster Rothstein & Ebenstein LLP, 90 Park Avenue, New York, New York, pursuant to Notice, before Mayleen Cintrsn Ahmed a Registered Merit Reporter, Certified Realtime Reporter, and Notary Public of the State of New York.

Job No. CS2079659

A P P E A R A N C E S:

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BY: DOUGLAS R. NEMEC, ESQ.
ANDREW GISH, ESQ.

ALSO PRESENT:
JAMES ROBERTS, Legal video specialist

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THE VIDEOGRAPHER: Good morning. We are now on the record.

Please note that the microphones are sensitive and may pick up whispering and private conversations.

Please turn off all cell phones or place them away from the microphones as they can interfere with the deposition audio.

Recording will continue until all parties agree to go off the record.

My name is Jim Roberts representing Veritext Corporate Services with offices in New York City, New York.

Today's date is June 12, 2015. The time is approximately 9:00 a.m.

The deposition is being held at Amster Rothstein & Ebenstein located at 90 Park Avenue, New York City, New York and is being taken by counsel for the Defendant.

The caption of the case is Network-1 Technologies, Incorporated

versus Google, Incorporated and YouTube LLC.

The case is held in the U.S. District Court, Southern District of New York, Case No. 1:14-cv-02396-PGG.

The name of the witness is Ingemar J. Cox.

Counsel will, please, state their appearances for the record.

MR. NEMEC: Douglas Nemec and Andrew Gish from Skadden Arps for the Defendants, Google and YouTube.

MR. LEDAHL: And Brian Ledahl of Russ August & Kabat on behalf of the Plaintiff, Network-1.

THE VIDEOGRAPHER: Our court reporter, Mayleen Ahmed, also of Veritext will please swear in the witness.

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I N G E M A R J. C O X,
called as a witness, having been duly sworn by a Notary Public, was examined and testified as follows:

extraction, correct?
A. Yes.
Q. And the examples that are enumerated, for example, between about lines 20 and 43, those are techniques for feature extraction that were known prior to your invention, correct?
A. About between 20 and 43, you said?
Q. Roughly.
A. I believe that this represents a sort of general description of -- of what features could, could be and what have been used in the past, yes.
Q. All right. Had you personally used any of those enumerated feature extraction techniques prior to filing your patent application?
A. I may have done in, in the context of, for example, a Pic Hunter work.
Q. Do you remember what, what type of feature extraction technique you used in Pic Hunter?
A. No. The short answer is I have to look at the Pic Hunter paper. I mean, I have

some vague recollections, but I -- I don't want to guess.
Q. Do you have a recollection of what these enumerated types of feature extraction techniques were generally used for prior to your patent application?
A. I think they could be used for a range of possibilities. So no, nothing specific.
Q. You're not aware of any specifics within that range of possibility?
A. Well, for example, you know, something like a discrete cosine transform, you know, would be used for MPEG compression, for example.
Q. Okay. Have you ever used discrete cosine transformation for MPEG transmission in your work prior to your invention?
A. I believe we did in the context of digital watermarking.
Q. Had you ever used principal component analysis for feature extraction in your work at -- in your work, in your work anywhere prior to your invention?

A. I can't remember, but I have a vague feeling that I may have done.
Q. Do you recall ever having used Fourier frequency decompositions in connection with feature extraction prior to your invention?
A. I'm almost certain that I would have done, but I don't have any specific recollection of where I used it. It's a very common technique.
Q. In connection with your invention, did you develop any new techniques for feature extraction?
A. So, I don't -- I don't think I describe any, any new techniques for, for feature extraction.
Q. In line -- it's around line 32 in column 7, there's a reference to recognition literature.
(Witness perusing document.)
A. Line which?
Q. Around line 32.
A. Okay. "The recognition literature contains..."

Q. Do you understand what's -- what's meant by "recognition literature" there?
A. Well, I'll be thinking of literature in the scientific domain that describes, you know, ways to, to recognize objects or sounds or video.
Q. So that -- that recognition literature, would that include pattern recognition?
A. I think it would, yes.
Q. And content recognition as well?
A. Yes.
Q. Is there a difference in your mind between content recognition and pattern recognition?
A. Not a strong one. I mean, I'm not -- I haven't given it a lot of consideration. I mean, I have to give that some thought, I think, if there was a -- was or was not a distinction.
Q. Would there at least be some overlap between pattern recognition and content recognition?
A. Probably.

A. I can't remember. I'm sorry.
Q. Take a look, if you would, at column 22 in the '988 patent.
Does column 2 describe any technique for neighbor searching within the context of your application, your patent?
MR. LEDAHL: I'm sorry. 2 or 22?
MR. NEMEC: I meant to say 22. I may have said 2.
MR. LEDAHL: That's okay. I just wanted to make sure.
A. And the question again, please?
Q. Does column 22 describe techniques for neighbor searching within the context of your invention?
A. Let me just, again, take a look at it.
(Witness perusing document.)
A. And one more time, the question? Sorry.
Q. Does the text in that column describe examples of neighbor searching techniques within the context of your invention?

A. Yes, I think it does.
Q. What specific neighbor searching techniques are called out there?
A. Well, I'm just reading from the paragraph here. But I mean, it says a number of possible data structures are applicable, kd-trees, vantage point trees, excluded middle vantage point forest. Those are the only ones I, I see at the moment.
Q. And you understand those to be examples of neighbor searching for use in connection with your invention, correct?
A. Well, I'm -- I'm hesitating due just to, to know whether there's specific examples of a nearest neighbor or a neighbor, and I can't remember, you know, which, which ones are which at the moment.
Q. Okay. But do you, do you recall ever using kd-trees for either neighbor searching or nearest neighbor searching prior to your invention?
A. Not that I can remember.
Q. Do you recall ever using vantage point trees for either neighbor searching or

nearest neighbor searching prior to your invention?
A. Not that I can remember.
Q. Since, since you made a distinction here, I should re-ask a question that I posed earlier differently.
Prior to your invention, had you ever used nearest neighbor searching in any of your research?
A. Again, I'm not sure. But -- I'm not sure.
Q. And what, what --
Why is it that you're drawing a distinction between neighbor searching and nearest neighbor searching here when I'm asking about kd-trees and vantage point trees?
A. Well, again, going back to the example of a reference point and then other points. So, you know, if you're given, for example, this threshold that we talked about, you can image that you have a -- have a reference point and a circle around it. And so any points within that circle are

considered to be a neighbor. Excuse me.
One of those points will be closest, so that will be the nearest neighbor. But the other, other points that are slightly further away perhaps are still neighbors, it's just not the nearest neighbor.
Q. So your -- just to make sure I understand.
Your hesitation over whether kd-trees and vantage point trees are techniques for neighbor searching is that you don't recall whether they're used to identify that nearest point or to identify the others that may be within the circle but further out than that nearest point?
A. That's correct.
Q. And there's some descriptions starting at line 24 of column 22 in the '988 of an excluded middle vantage point forest. Do you see that?
A. Again? Column 24, line?
Q. Column 22, line 24.
A. I'm sorry. Line 24.

(Witness perusing document.)
A. Yes. I see a reference to excluded middle vantage point forest, yes.
Q. And do you understand excluded middle vantage point forest to be a technique for neighbor searching in the context of your invention?
A. I can't remember. I can't remember.
Q. Do you know if it's a technique for nearest neighbor searching?
A. I haven't looked at these, these algorithms for years, so I'm just -- don't want to make a mistake and say one is one and another is another.
Q. Okay. Do you propose in your -- in your patent, in the '988 patent, any techniques for neighbor searching that were not known prior to your invention?
A. I don't believe that I did, no.
Q. Do you pose any techniques for nearest neighbor searching that were not known prior to your invention?
A. I don't remember doing so. Do you

mind if we take a break?
Q. Sure. That will be fine. This is a good time.
THE VIDEOGRAPHER: Going off the record at 10:36 a.m. This is the end of disc one in the deposition of Ingemar J. Cox.
(Whereupon, a short recess was taken.)
THE VIDEOGRAPHER: Going back on the record. 10:48 a.m. This is the beginning of disc two in the deposition of Ingemar J. Cox.
BY MR. NEMEC:
Q. Dr. Cox, before the break we were talking about some of the terminology that appears in your patents, and I want to turn to another term.
The term "non-exhaustive search" is used in the context of your patents, correct?
A. Yes.
Q. For example, in the '988 patent, the term "non-exhaustive search" appears in

Claim 15, correct?
A. So we're on Exhibit 17?
Q. We are, yes.
A. And we're on --
Q. I gave Claim 15 as an example.
(Witness perusing document.)
A. Yes. I see that term in there.
Q. What's your understanding of the term "non-exhaustive search" as it's used in your patents?
A. So maybe it should be easier to start with what I mean by -- what's meant by an exhaustive search.
So, for example, if you have a, say, a series of documents and they're just all, all randomly on the table and you're asked -- you're given a document and you're asked to find the most similar document, then, you know, the al -- the algorithm that you would use would presumably be that you can pair it with the first document on the table, then the second, then the third, and look at all -- all the documents. So that would be an exhaustive look at all the

documents.
And even that same algorithm, I mean, it might be that you could stop before you see, see the end in that if you found an identical document, you know, at that point, you know, it would not be -- no point in trying to look for something more similar than an identical one. So you could stop. But still, in principle the algorithm would be, you know, exhaustive in that, you know, you would have to look at all of documents.
In contrast, you know, a non-exhaustive example, example might be one where the documents are in piles where -- I don't know. Perhaps they're given in their title. So the A documents in one pile, the B documents, et cetera.
Now you're given a query with a document that starts with the letter C and, you know, because of that, you're able to just look at the documents in pile C so, so you would never look at all of the documents in the database. So that would be a non-exhaustive search.

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