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(54) **Title:** COLLECTION OF MACHINE LEARNING TRAINING DATA FOR EXPRESSION RECOGNITION

(57) **Abstract:** Apparatus, methods, and articles of manufacture for implementing crowdsourcing pipelines that generate training examples for machine learning expression classifiers. Crowdsourcing providers actively generate images with expressions, according to cues or goals. The cues or goals may be to mimic an expression or appear in a certain way, or to "break" an existing expression recognizer. The images are collected and rated by same or different crowdsourcing providers, and the images that meet a first quality criterion are then vetted by expert(s). The vetted images are then used as positive or negative examples in training machine learning expression classifiers.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 2014/015654

<p>A. CLASSIFICATION OF SUBJECT MATTER</p> <p style="text-align: center;">G06K 9/62 (2006.01)</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>																	
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols)</p> <p style="text-align: center;">G06K 9/00, 9/62, 9/64, 9/66, 9/68, 9/70, G06T 7/00, G06F 15/00, 15/16</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)</p> <p>PatSearch (RUPTO internal), USPTO, PAJ, Esp@cenet, DWPI, EAPATIS, PATENTSCOPE, Information Retrieval System of FIPS</p>																	
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 2012/0182447 A1 (CHANAN GABAY) 19.07.2012, [0042] -[0043], [0049]-[0051], [0069], [0071], [0152]-[0165]</td> <td>1-20</td> </tr> <tr> <td>Y</td> <td>US 2009/0285456 A1 (HANKYU MOON et al.) 19.1 1.2009, [001 1], [0044], [0064], [0066], [0076], [0077], [0084]-[0093], claim 1</td> <td>1-20</td> </tr> <tr> <td>A</td> <td>US 8219438 B1 (VIDEOMINING CORPORATION) 10.07.2012</td> <td>1-20</td> </tr> <tr> <td>A</td> <td>US 2009/0299824 A1 (MELVIN L. BARNES, JR.) 03. 12.2009</td> <td>1-20</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2012/0182447 A1 (CHANAN GABAY) 19.07.2012, [0042] -[0043], [0049]-[0051], [0069], [0071], [0152]-[0165]	1-20	Y	US 2009/0285456 A1 (HANKYU MOON et al.) 19.1 1.2009, [001 1], [0044], [0064], [0066], [0076], [0077], [0084]-[0093], claim 1	1-20	A	US 8219438 B1 (VIDEOMINING CORPORATION) 10.07.2012	1-20	A	US 2009/0299824 A1 (MELVIN L. BARNES, JR.) 03. 12.2009	1-20
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<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier document but published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier document but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed						
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<p>Date of the actual completion of the international search</p> <p style="text-align: center;">16 July 2013 (16.07.2013)</p>		<p>Date of mailing of the international search report</p> <p style="text-align: center;">18 September 2014 (18.09.2014)</p>															
<p>Name and mailing address of the ISA/RU:</p> <p>FIPS, Russia. 123995, Moscow, G-59, GSP-5, Berezhkovskaya nab., 30-! Facsimile No. +7 (499) 243-33-37</p>		<p>Authorized officer</p> <p style="text-align: center;">V. Volodin</p> <p>Telephone No. 499-240-25-91</p>															