

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/077590

A. CLASSIFICATION OF SUBJECT MATTER

G10L 15/06(2013.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G10L 15

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI; CNTXT; 百度学术; IEEE:: 损失, 汉字, 字符, 音素, 拼音, 联合, 结合, 融合, loss, combine, fusion, phoneme, character, CTC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 108510983 A (BAIDU USA LLC.) 07 September 2018 (2018-09-07) description, paragraphs [0028]-[0105], figures 1-5	1-12
X	Hairong Liu et al. "Gram-CTC: Automatic Unit Selection and Target Decomposition for Sequence" <i>dearXiv:1703.00096v2</i> , 12 August 2017 (2017-08-12), parts 3-5	1-12
A	CN 108510985 A (BAIDU USA LLC.) 07 September 2018 (2018-09-07) entire document	1-12
A	CN 106328127 A (SAMSUNG ELECTRONICS CO., LTD.) 11 January 2017 (2017-01-11) entire document	1-12
A	US 10229672 B1 (GOOGLE LLC) 12 March 2019 (2019-03-12) entire document	1-12
A	CN 107016994 A (ALIBABA GROUP HOLDING LIMITED) 04 August 2017 (2017-08-04) entire document	1-12

 Further documents are listed in the continuation of Box C.
 See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

27 May 2020

Date of mailing of the international search report

09 June 2020

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2020/077590

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	108510983	A	07 September 2018	US	2018247639	A1	30 August 2018
				US	10373610	B2	06 August 2019
CN	108510985	A	07 September 2018	US	2018247643	A1	30 August 2018
CN	106328127	A	11 January 2017	US	2017004824	A1	05 January 2017
				JP	2017016131	A	19 January 2017
				EP	3113176	B1	03 April 2019
				JP	6637848	B2	29 January 2020
				KR	20170003246	A	09 January 2017
				EP	3113176	A1	04 January 2017
US	10229672	B1	12 March 2019	None			
CN	107016994	A	04 August 2017	None			