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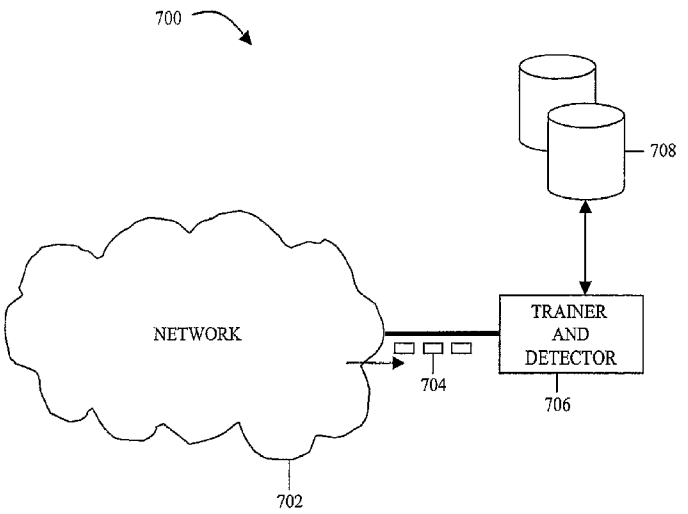
(54) Title: SYSTEMS, METHODS, AND MEDIA FOR OUTPUTTING A DATASET BASED UPON ANOMALY DETECTION



(57) Abstract: Systems, methods, and media for outputting a dataset based upon anomaly detection are provided. In some embodiments, methods for outputting a dataset based upon anomaly detection: receive a training dataset having a plurality of n-grams, which plurality includes a first plurality of distinct training n-grams each being a first size; compute a first plurality of appearance frequencies, each for a corresponding one of the first plurality of distinct training n-grams; receive an input dataset including first input n-grams each being the first size; define a first window in the input dataset; identify as being first matching n-grams, the first input n-grams in the first window that correspond to the first plurality of distinct training n-grams; compute a first anomaly detection score for the input dataset using the first matching n-grams and the first plurality of appearance frequencies; and output the input dataset based on the first anomaly detection score.

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A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 12/14 (2007.01)
USPC - 726/22
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)
726/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 714/100; 714/709; 717/124

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST - terms: output dataset, anomaly, anomaly detection, training dataset, n-gram, secret basis, secret, random, pseudo-random, pseudo random, count, hash function, processor, match, matching, network data, probability, classify, classification, malicious, malicious code, consistency, score, predetermine, etc ...

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2003/0182310 A1 (CHARNOCK, et al.) 25 September 2003 (25.09.2003), abstract and para [0066], [0068]-[0072], [0099]-[0101], [0139], [0150], [0191], [0204], [0228], [0233], [0246], [0248], [0252]-[0253], [0297], [0304]-[0305], [0365], [0445], [0449], [0453]-[0455], [0457], [0481], [0495], [0500]-[0503], [0511], [0513]-[0514], [0533], [0550], [0661], [0707], [0723], [0730], [0733], [0735], [0741], [0846], [0857], [0862], [0868], [0873], [0887], [0893].	1-4, 6, 8, 11-15, 18-35, 37, 39, 42-46, 49-66, 68, 70, 73-77 and 80-93 --- 5, 7, 9-10, 16-17, 36, 38, 40-41, 47-48, 67, 69, 71-72 and 78-79
Y	US 2004/0111410 A1 (BURGOON, et al.) 10 June 2004 (10.06.2004), abstract and para [0161]-[0165].	5, 36 and 67
Y	US 2006/0015630 A1 (STOLFO, et al.) 19 January 2006 (19.01.2006), abstract and para [0091]-[0093].	7, 16-17, 38, 47-48, 69 and 78-79
Y	US 2005/0249214 A1 (PENG) 10 November 2005 (10.11.2005), abstract and para [0071].	9-10, 40-41 and 71-72
A	US 2003/0014662 A1 (GUPTA, et al.) 16 January 2003 (16.01.2003), entire document, especially abstract and para [0042]-[0048], [0050]-[0058], [0069]-[0076], [0081]-[0084], [0164]-[0168].	1-93

☐ Further documents are listed in the continuation of Box C. ☐

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"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
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"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	Date of mailing of the international search report
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