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HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG,
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NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
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(54) Title: MACHINE VISION-BASED DETECTING AND PROCESSING OF TABLE GAME EVENTS

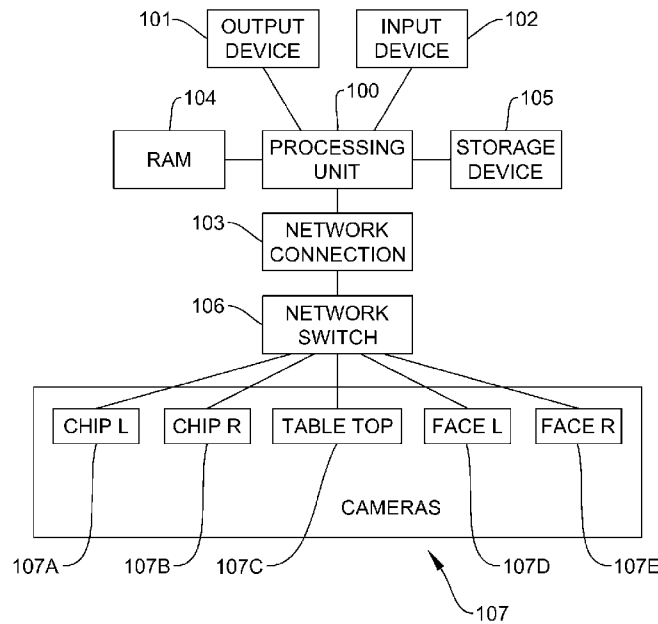


FIG. 1

(57) Abstract: Systems and methods are provided to capture and analyze events in a casino using approaches that efficiently manage computing resources. One or more cameras are positioned proximate to a gaming table. Image data from the cameras can be analyzed using machine learning models to understand the events occurring at the gaming table. A first machine learning model is maintained at an edge server that can be positioned within a gaming environment, for example. The machine learning model on the edge server can be a copy of machine learning model on a cloud-based server. Through ongoing testing and training activities, the machine learning model on the cloud-based server can be updated for the purposes of improving object detection accuracy. Once the machine learning model has been updated, such updates can be provided to the machine learning model on the edge server.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC - INV. G07F 17/32, G06N 20/00 (2024.01)
 ADD. G06T 7/00 (2024.01)

CPC - INV. G07F 17/322, G06N 20/00

ADD. G06T 7/00

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)
 See Search History document

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2022/000023 A1 (Sensen Networkd Group PTY LTD) 06 January 2022 (06.01.2022) entire document, especially abstract and para [0093]-[0095]	1-3, 10-14, 17-20
Y	US 2021/0117859 A1 (Nvidia Corporation) 22 April 2021 (22.04.2021) entire document, especially abstract and para [0139]-[0140]	1-3, 10-14, 17-20
Y	US 2020/0242801 A1 (VISUALIMITS LLC) 30 July 2020 (30.07.2020) entire document, especially abstract and para [0186]	2, 3/2
Y	US 2021/0365690 A1 (ARB LABS INC) 25 November 2021 (25.11.2021) entire document, especially abstract and para [0349]-[0350]	14, 18-19, 20/(18-19)

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
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"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Kari Rodriguez Telephone No. PCT Helpdesk: 571-272-4300
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 24/32374

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

- 2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

- 3. Claims Nos.: 4-9, 15-16
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

- 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
- 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

- 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.