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Ji et al.

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(54) **METHOD AND SYSTEM OF SPARSE CODE
BASED OBJECT CLASSIFICATION WITH
SENSOR FUSION**

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(51) **Int. Cl.**

H04N 7/18 (2006.01)
G06F 15/16 (2006.01)

(52) **U.S. Cl.** **348/115**

(58) **Field of Classification Search** 348/113-118
See application file for complete search history.

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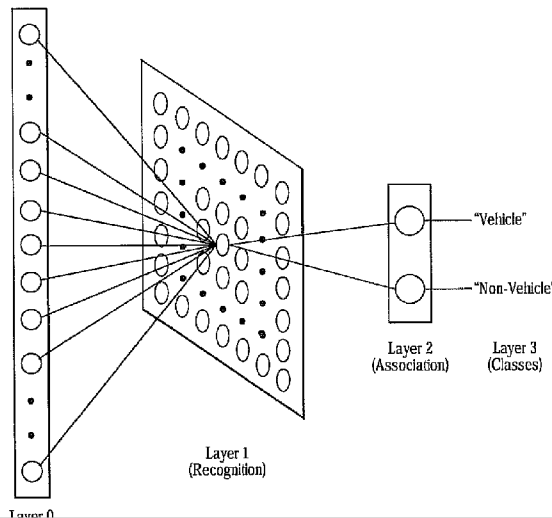
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Anderson & Citkowski, P.C.

(57) **ABSTRACT**

A system and method for object classification based upon the
fusion of a radar system and a natural imaging device using
sparse code representation. The radar system provides a
means of detecting the presence of an object within a prede-
termined path of a vehicle. Detected objects are then fused
with the image gathered by the camera and then isolated in an
attention window. The attention window is then transformed
into a sparse code representation of the object. The sparse
code representation is then compared with known sparse code
representation of various objects. Each known sparse code
representation is given a predetermined variance and subse-
quent sparse code represented objects falling within said vari-
ance will be classified as such. The system and method also
includes an associative learning algorithm wherein classified
sparse code representations are stored and used to help clas-
sifying subsequent sparse code representation.

4 Claims, 5 Drawing Sheets



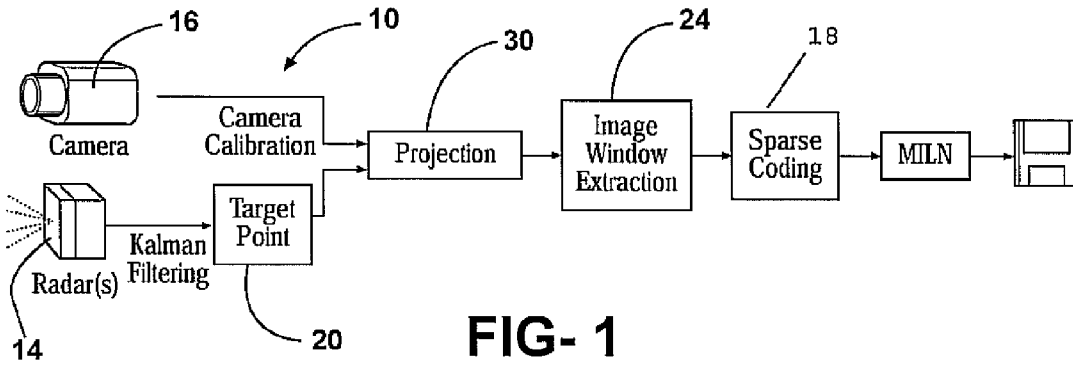


FIG- 1

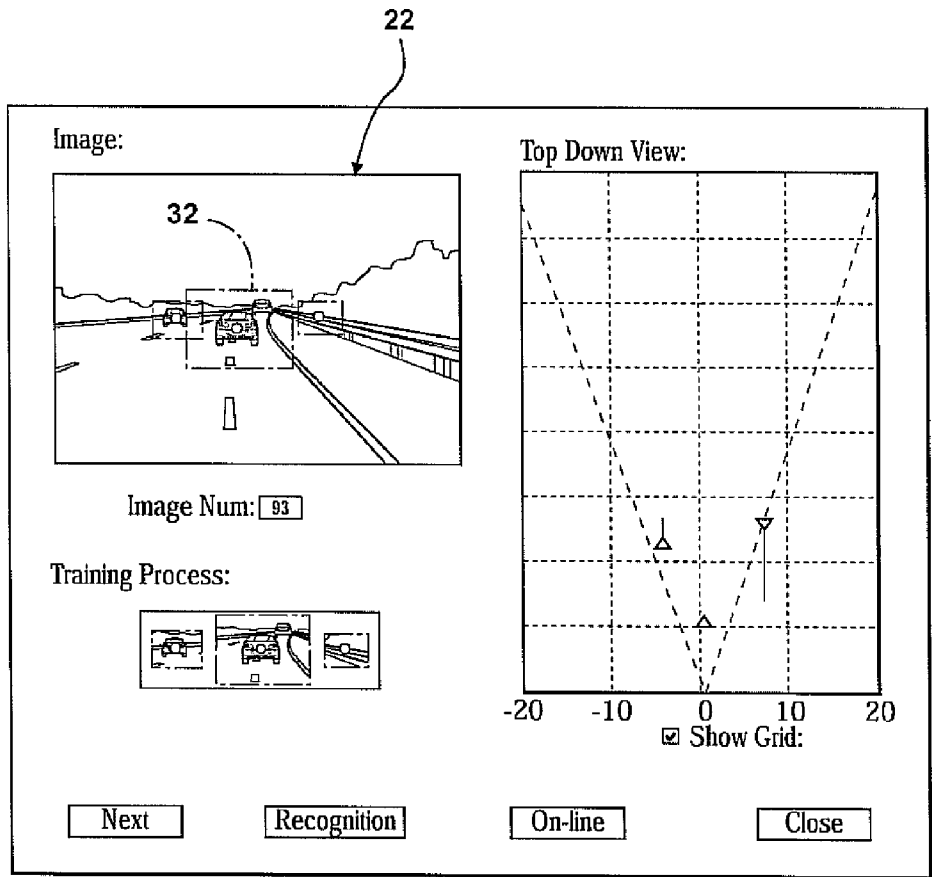


FIG - 2

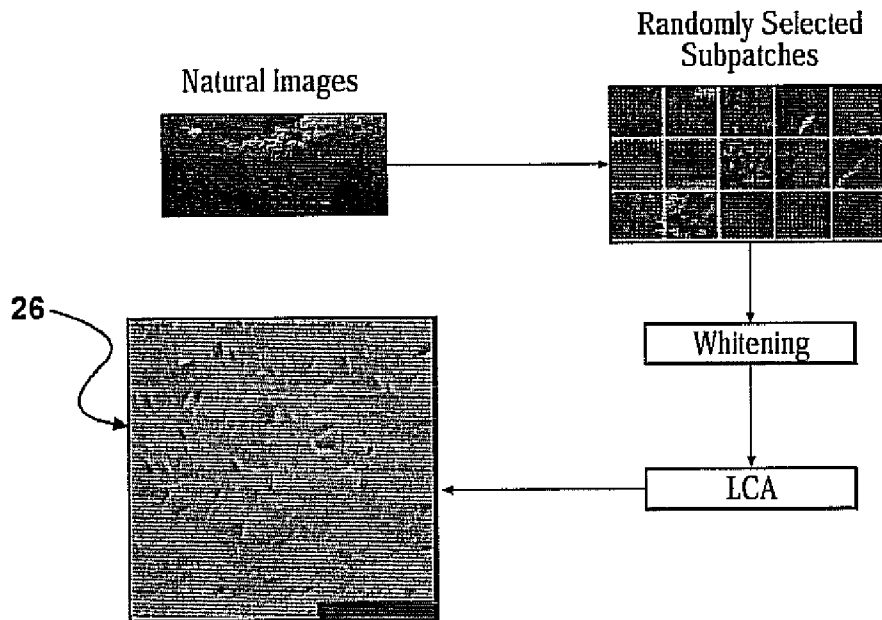
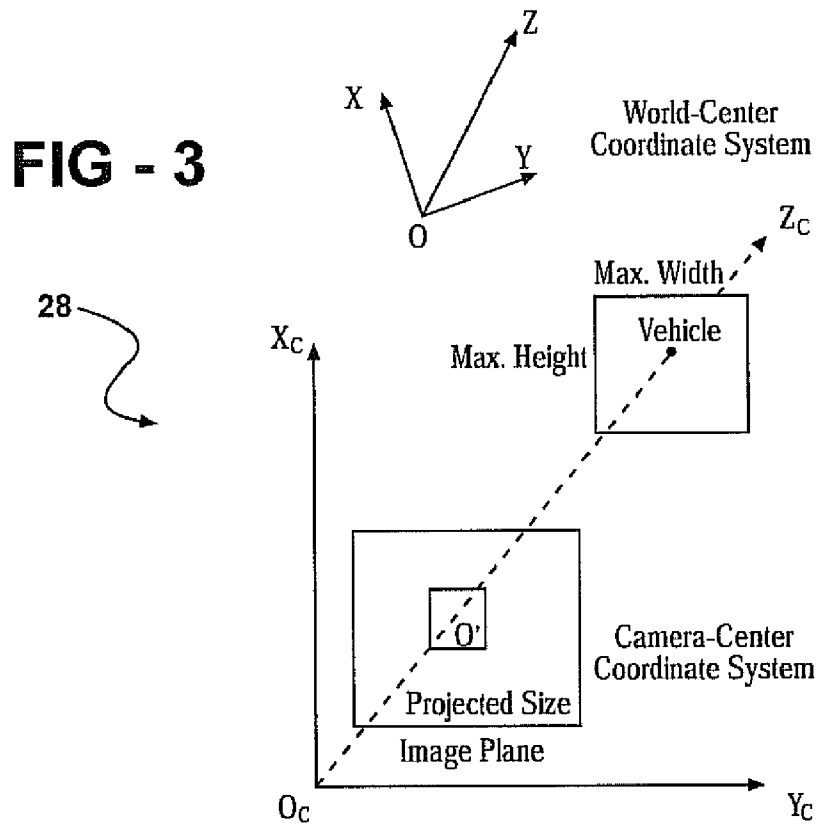


FIG - 4

FIG - 5

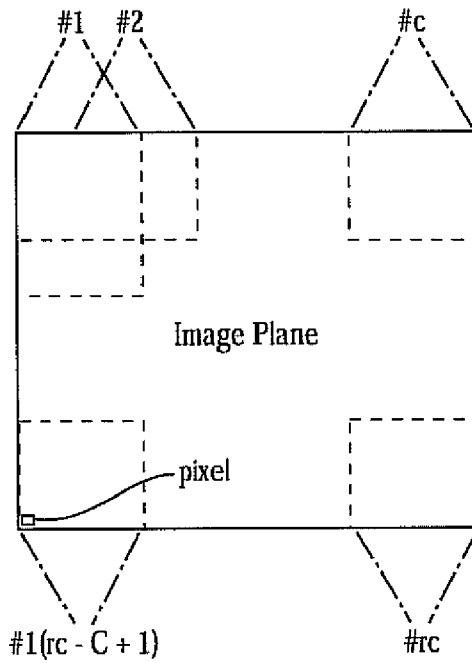
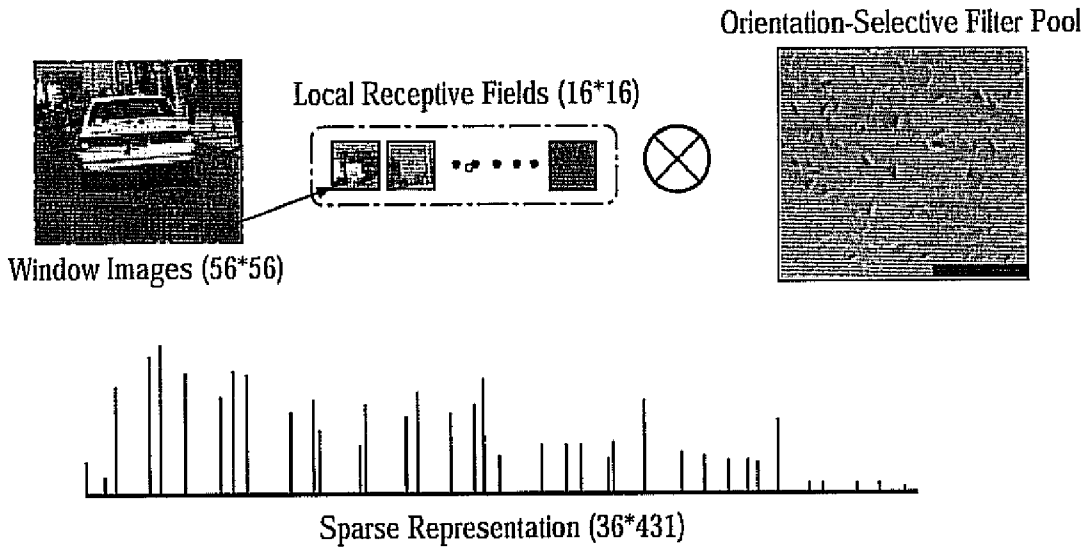


FIG - 6



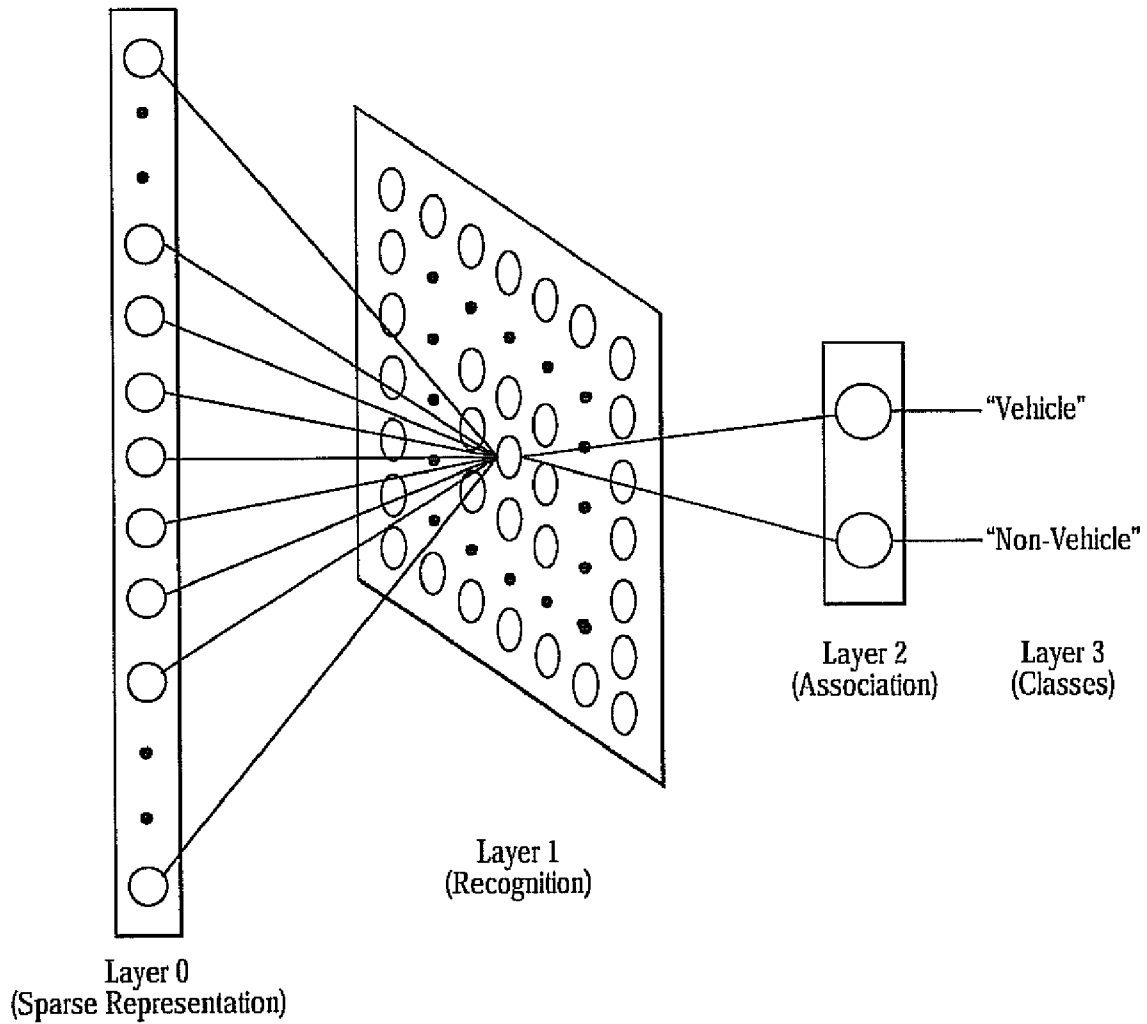


FIG - 7

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