PATTERN RECOGNITION (EVOLUTION OF DETECTORS) USING GP
GENETICALLY EVOLVED RECOGNIZER WITH DYNAMICALLY DEFINED DETECTORS
(AUTOMATICALLY DEFINED FUNCTIONS)

(PROGN
  (DEFUN ADF0 ()
    (VALUES (OR (AND W SE) (OR (AND S (AND X NW)) (AND (OR (NOT S) (AND W SE)))
           (OR (OR S X) (NOT N))))))
  (DEFUN ADF1 ()
    (VALUES (AND (AND (NOT (NOT X)) (NOT (OR S X))) (NOT (OR S X)))))
  (DEFUN ADF2 ()
    (VALUES (OR (AND (NOT (AND W E)) (OR (AND NW W) (NOT NW))) (OR (AND N E) (AND S SE))
           (OR (AND W (NOT NW)) (OR SE NE))))))
  (DEFUN ADF3 ()
    (VALUES (AND (NOT (AND (NOT SE) (OR W SW))) (OR (NOT (OR NW (NOT NW)))
           (AND SE X)) (OR (AND (AND (NOT SE) (OR W SW))) (AND (NOT S) (OR (NOT (NOT NW))
           (NOT SE)))))
  (DEFUN ADF4 ()
    (VALUES (AND (NOT (OR (OR W SW) (OR NW NW))) (AND (AND (AND X N)
           (NOT NE)) (AND (NOT (OR (OR E SW) (OR NW NW))) (AND (AND (AND (AND X N)
           (NOT NE)) (NOT NE)) (OR (OR N SE) (OR X E))))))))
  (VALUES
    (IF (OR (NOT (ADF4)) (AND (OR (NOT (AND (GO-S) (GO-S)))) (AND (OR
      (NOT (AND (GO-S) (GO-S))) (AND (NOT (ADF3) (ADF3)))) (HOMING
      (GO-S))) (OR (NOT (ADF4)) (AND (OR (NOT (AND (GO-S) (GO-S))) (AND (ADF3)
      (ADF3)))) (HOMING (GO-N))) (OR (NOT (ADF4)) (AND (OR (NOT (AND (GO-S) (GO-
      S))) (AND (ADF3) (ADF3)))) (HOMING (GO-N))) (OR (NOT (AND (GO-S) (GO-S)))
    (AND (NOT (ADF3) (ADF3)) (HOMING (GO-N))))))))
    (ANTecedent of outermost IF
     (IF (HOMING (AND (GO-S) (ADF0))) (IF (GO-S) NIL L) (IF (HOMING
       (GO-S)) (IF (ADF1) L I) (IF (ADF1) L NIL))); then-part of outermost IF
     (IF (OR (OR (GO-E) (ADF3)) (AND (OR (NOT (ADF4)) (AND (NOT
       (ADF3)) (OR (NOT (AND (GO-S) (GO-S))) (AND (NOT (GO-S)) (AND (ADF3)
       (ADF3))))) (HOMING (GO-N)))) (IF (ADF2) (IF (GO-S) L NIL) (IF (GO-
       S) (IF (ADF3) L NIL) (IF (GO-S NIL L))))) (IF (NOT (ADF1)) (IF (GO-
       E) NIL I) (IF (ADF1) L L))); else-part of outermost IF
  )).
ARRANGEMENT OF PIXELS REQUIRED TO CAUSE $ADF_4$ TO RETURN $T$

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ARRANGEMENT OF PIXELS REQUIRED TO CAUSE \texttt{ADF3} TO RETURN A VALUE OF $T$

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ARRANGEMENT OF PIXELS REQUIRED TO CAUSE ADF2 TO RETURN A VALUE OF NIL

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