

# CPC COOPERATIVE PATENT CLASSIFICATION

## G PHYSICS (NOTES omitted)

### INSTRUMENTS

## G06 COMPUTING; CALCULATING OR COUNTING (NOTES omitted)

## G06V IMAGE OR VIDEO RECOGNITION OR UNDERSTANDING

### NOTES

1. This subclass covers:
  - methods or arrangements for pattern recognition or machine learning specially adapted for images or video.
2. In this subclass, the following terms or expressions are used with the meaning indicated:
  - "pattern recognition" means detection, categorisation, authentication and identification of patterns for explanatory purposes or to derive a certain meaning in images or video, by acquiring, preprocessing or extracting distinctive features and matching, clustering or classifying these features or representations thereof;
  - "feature extraction" means deriving descriptive or quantitative measures from images or video;
  - "clustering" means grouping or separating patterns according to their (dis)similarity or closeness;
  - "classification" means the identification of an object/feature as belonging to a class of objects/features by assigning of a label.
3. In this subclass, subject matter classified in groups [G06V 20/00](#) - [G06V 40/00](#) is also classified in groups [G06V 10/10](#) or [G06V 10/20](#) respectively, if recognition relies on specific processing at the stages of acquisition or preprocessing.

**10/00 Arrangements for image or video recognition or understanding** ([character recognition in images or video G06V 30/10](#))

### WARNING

Groups [G06V 10/00](#), [G06V 10/74](#), [G06V 10/77](#), [G06V 10/7792](#), [G06V 10/82](#) and [G06V 10/86](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

**10/10** . Image acquisition ([document image scanning and transmission H04N 1/00](#); [control of digital cameras H04N 23/60](#))

### WARNING

Group [G06V 10/10](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/10](#) is also impacted by reclassification into groups [G06V 10/00](#), [G06V 10/70](#) - [G06V 10/87](#), [G06V 10/88](#) - [G06V 10/92](#), [G06V 30/14](#) - [G06V 30/158](#), [G06V 30/199](#) and [G06V 30/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

**10/12** . . Details of acquisition arrangements; Constructional details thereof

### WARNING

Group [G06V 10/12](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/12](#) is also impacted by reclassification into groups [G06V 10/14](#) and [G06V 30/142](#).

All groups listed in this Warning should be considered in order to perform a complete search.

**10/14** . . . Optical characteristics of the device performing the acquisition or on the illumination arrangements

### WARNING

Group [G06V 10/14](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 10/12](#).

Groups [G06F 18/00](#), [G06V 10/12](#) and [G06V 10/14](#) should be considered in order to perform a complete search.

10/141 . . . . Control of illumination

**WARNING**

Group [G06V 10/141](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/141](#) is also impacted by reclassification into group [G06V 30/1431](#).

Groups [G06F 18/00](#), [G06V 10/141](#) and [G06V 30/1431](#) should be considered in order to perform a complete search.

10/143 . . . . Sensing or illuminating at different wavelengths

**WARNING**

Group [G06V 10/143](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/143](#) is also impacted by reclassification into group [G06V 30/1429](#).

Groups [G06F 18/00](#), [G06V 10/143](#) and [G06V 30/1429](#) should be considered in order to perform a complete search.

10/145 . . . . Illumination specially adapted for pattern recognition, e.g. using gratings

**WARNING**

Group [G06V 10/145](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/145](#) is also impacted by reclassification into group [G06V 30/1434](#).

Groups [G06F 18/00](#), [G06V 10/145](#) and [G06V 30/1434](#) should be considered in order to perform a complete search.

10/147 . . . . Details of sensors, e.g. sensor lenses (fingerprint or palmprint sensors [G06V 40/13](#); vascular sensors [G06V 40/145](#); eye sensors [G06V 40/19](#))

**WARNING**

Group [G06V 10/147](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/147](#) is also impacted by reclassification into groups [G06V 30/1429](#) and [G06V 30/1437](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/16 . . {using multiple overlapping images; Image stitching}

**WARNING**

Group [G06V 10/16](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/16](#) is also impacted by reclassification into group [G06V 30/141](#).

Groups [G06F 18/00](#), [G06V 10/16](#) and [G06V 30/141](#) should be considered in order to perform a complete search.

10/17 . . {using hand-held instruments}

**WARNING**

Group [G06V 10/17](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/17](#) is also impacted by reclassification into group [G06V 30/142](#).

Groups [G06F 18/00](#), [G06V 10/17](#) and [G06V 30/142](#) should be considered in order to perform a complete search.

10/19 . . {by sensing codes defining pattern positions}

**WARNING**

Group [G06V 10/19](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/19](#) is also impacted by reclassification into group [G06V 30/1426](#).

Groups [G06F 18/00](#), [G06V 10/19](#) and [G06V 30/1426](#) should be considered in order to perform a complete search.

10/20 . Image preprocessing

**WARNING**

Group [G06V 10/20](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/20](#) is also impacted by reclassification into groups [G06V 10/00](#), [G06V 10/70](#) - [G06V 10/87](#), [G06V 10/88](#) - [G06V 10/92](#), [G06V 30/16](#) - [G06V 30/168](#), [G06V 30/199](#) and [G06V 30/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/22 . . by selection of a specific region containing or referencing a pattern; Locating or processing of specific regions to guide the detection or recognition

**WARNING**

Group [G06V 10/22](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/22](#) is also impacted by reclassification into group [G06V 30/1444](#).

Groups [G06F 18/00](#), [G06V 10/22](#) and [G06V 30/1444](#) should be considered in order to perform a complete search.

- 10/225 . . . {based on a marking or identifier characterising the area}

**WARNING**

Group [G06V 10/225](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/225](#) is also impacted by reclassification into group [G06V 30/1448](#).

Groups [G06F 18/00](#), [G06V 10/225](#) and [G06V 30/1448](#) should be considered in order to perform a complete search.

- 10/23 . . . {based on positionally close patterns or neighbourhood relationships}

**WARNING**

Group [G06V 10/23](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/23](#) is also impacted by reclassification into group [G06V 30/1452](#).

Groups [G06F 18/00](#), [G06V 10/23](#) and [G06V 30/1452](#) should be considered in order to perform a complete search.

- 10/235 . . . {based on user input or interaction}

**WARNING**

Group [G06V 10/235](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/235](#) is also impacted by reclassification into group [G06V 30/1456](#).

Groups [G06F 18/00](#), [G06V 10/235](#) and [G06V 30/1456](#) should be considered in order to perform a complete search.

- 10/24 . . Aligning, centring, orientation detection or correction of the image

**WARNING**

Group [G06V 10/24](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/24](#) is also impacted by reclassification into group [G06V 30/146](#).

Groups [G06F 18/00](#), [G06V 10/24](#) and [G06V 30/146](#) should be considered in order to perform a complete search.

- 10/242 . . . {by image rotation, e.g. by 90 degrees}

**WARNING**

Group [G06V 10/242](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/242](#) is also impacted by reclassification into group [G06V 30/1463](#).

Groups [G06F 18/00](#), [G06V 10/242](#) and [G06V 30/1463](#) should be considered in order to perform a complete search.

- 10/243 . . . {by compensating for image skew or non-uniform image deformations}

**WARNING**

Group [G06V 10/243](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/243](#) is also impacted by reclassification into group [G06V 30/1475](#).

Groups [G06F 18/00](#), [G06V 10/243](#) and [G06V 30/1475](#) should be considered in order to perform a complete search.

- 10/245 . . . {by locating a pattern; Special marks for positioning}

**WARNING**

Group [G06V 10/245](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/245](#) is also impacted by reclassification into groups [G06V 30/1448](#), [G06V 30/1465](#), [G06V 30/1468](#), [G06V 30/1475](#) and [G06V 30/1478](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/247 . . . {by affine transforms, e.g. correction due to perspective effects; Quadrilaterals, e.g. trapezoids}

**WARNING**

Group [G06V 10/247](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/247](#) is also impacted by reclassification into group [G06V 30/1607](#).

Groups [G06F 18/00](#), [G06V 10/247](#) and [G06V 30/1607](#) should be considered in order to perform a complete search.

- 10/248 . . . {by interactive preprocessing or interactive shape modelling, e.g. feature points assigned by a user}
- WARNING**
- Group [G06V 10/248](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/248](#) is also impacted by reclassification into group [G06V 30/1613](#).
- Groups [G06F 18/00](#), [G06V 10/248](#) and [G06V 30/1613](#) should be considered in order to perform a complete search.
- 10/25 . . Determination of region of interest [ROI] or a volume of interest [VOI]
- WARNING**
- Group [G06V 10/25](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/25](#) is also impacted by reclassification into group [G06V 30/147](#).
- Groups [G06F 18/00](#), [G06V 10/25](#) and [G06V 30/147](#) should be considered in order to perform a complete search.
- 10/255 . . {Detecting or recognising potential candidate objects based on visual cues, e.g. shapes}
- WARNING**
- Group [G06V 10/255](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/255](#) is also impacted by reclassification into group [G06V 30/1473](#).
- Groups [G06F 18/00](#), [G06V 10/255](#) and [G06V 30/1473](#) should be considered in order to perform a complete search.
- 10/26 . . Segmentation of patterns in the image field; Cutting or merging of image elements to establish the pattern region, e.g. clustering-based techniques; Detection of occlusion
- WARNING**
- Group [G06V 10/26](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/26](#) is also impacted by reclassification into group [G06V 30/148](#).
- Groups [G06F 18/00](#), [G06V 10/26](#) and [G06V 30/148](#) should be considered in order to perform a complete search.
- 10/267 . . . {by performing operations on regions, e.g. growing, shrinking or watersheds}
- WARNING**
- Group [G06V 10/267](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/267](#) is also impacted by reclassification into group [G06V 30/15](#).
- Groups [G06F 18/00](#), [G06V 10/267](#) and [G06V 30/15](#) should be considered in order to perform a complete search.
- 10/273 . . . {removing elements interfering with the pattern to be recognised}
- WARNING**
- Group [G06V 10/273](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/273](#) is also impacted by reclassification into group [G06V 30/155](#).
- Groups [G06F 18/00](#), [G06V 10/273](#) and [G06V 30/155](#) should be considered in order to perform a complete search.
- 10/28 . . Quantising the image, e.g. histogram thresholding for discrimination between background and foreground patterns
- WARNING**
- Group [G06V 10/28](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/28](#) is also impacted by reclassification into group [G06V 30/162](#).
- Groups [G06F 18/00](#), [G06V 10/28](#) and [G06V 30/162](#) should be considered in order to perform a complete search.
- 10/30 . . Noise filtering
- WARNING**
- Group [G06V 10/30](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/30](#) is also impacted by reclassification into group [G06V 30/164](#).
- Groups [G06F 18/00](#), [G06V 10/30](#) and [G06V 30/164](#) should be considered in order to perform a complete search.
- 10/32 . . Normalisation of the pattern dimensions
- WARNING**
- Group [G06V 10/32](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/32](#) is also impacted by reclassification into group [G06V 30/166](#).
- Groups [G06F 18/00](#), [G06V 10/32](#) and [G06V 30/166](#) should be considered in order to perform a complete search.

- 10/34 . . Smoothing or thinning of the pattern;  
Morphological operations; Skeletonisation

**WARNING**

Group [G06V 10/34](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/34](#) is also impacted by reclassification into group [G06V 30/168](#).

Groups [G06F 18/00](#), [G06V 10/34](#) and [G06V 30/168](#) should be considered in order to perform a complete search.

- 10/36 . . Applying a local operator, i.e. means to operate on image points situated in the vicinity of a given point; Non-linear local filtering operations, e.g. median filtering

**WARNING**

Group [G06V 10/36](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/36](#) is also impacted by reclassification into group [G06V 30/20](#).

Groups [G06F 18/00](#), [G06V 10/36](#) and [G06V 30/20](#) should be considered in order to perform a complete search.

- 10/40 . Extraction of image or video features

**WARNING**

Group [G06V 10/40](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/40](#) is also impacted by reclassification into groups [G06V 10/54](#) and [G06V 30/18](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/42 . . Global feature extraction by analysis of the whole pattern, e.g. using frequency domain transformations or autocorrelation

**WARNING**

Group [G06V 10/42](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/42](#) is also impacted by reclassification into group [G06V 30/186](#).

Groups [G06F 18/00](#), [G06V 10/42](#) and [G06V 30/186](#) should be considered in order to perform a complete search.

- 10/421 . . . {by analysing segments intersecting the pattern}

**WARNING**

Group [G06V 10/421](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/421](#) is also impacted by reclassification into group [G06V 30/184](#).

Groups [G06F 18/00](#), [G06V 10/421](#) and [G06V 30/184](#) should be considered in order to perform a complete search.

- 10/422 . . . for representing the structure of the pattern or shape of an object therefor

**WARNING**

Group [G06V 10/422](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/422](#) is also impacted by reclassification into group [G06V 30/18162](#).

Groups [G06F 18/00](#), [G06V 10/422](#) and [G06V 30/18162](#) should be considered in order to perform a complete search.

- 10/424 . . . . Syntactic representation, e.g. by using alphabets or grammars

**WARNING**

Group [G06V 10/424](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/424](#) is also impacted by reclassification into group [G06V 30/18171](#).

Groups [G06F 18/00](#), [G06V 10/424](#) and [G06V 30/18171](#) should be considered in order to perform a complete search.

- 10/426 . . . . Graphical representations

**WARNING**

Group [G06V 10/426](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/426](#) is also impacted by reclassification into group [G06V 30/18181](#).

Groups [G06F 18/00](#), [G06V 10/426](#) and [G06V 30/18181](#) should be considered in order to perform a complete search.

- 10/431 . . . {Frequency domain transformation; Autocorrelation}

**WARNING**

Group [G06V 10/431](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/431](#) is also impacted by reclassification into group [G06V 30/187](#).

Groups [G06F 18/00](#), [G06V 10/431](#) and [G06V 30/187](#) should be considered in order to perform a complete search.

10/435 . . . {Computation of moments}

#### **WARNING**

Group [G06V 10/435](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/435](#) is also impacted by reclassification into group [G06V 30/188](#).

Groups [G06F 18/00](#), [G06V 10/435](#) and [G06V 30/188](#) should be considered in order to perform a complete search.

10/44 . . Local feature extraction by analysis of parts of the pattern, e.g. by detecting edges, contours, loops, corners, strokes or intersections; Connectivity analysis, e.g. of connected components

#### **WARNING**

Group [G06V 10/44](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/44](#) is also impacted by reclassification into groups [G06V 30/1801](#), [G06V 30/182](#), [G06V 30/1823](#), [G06V 30/1826](#), [G06V 30/1829](#), [G06V 30/1831](#), [G06V 30/1834](#) and [G06V 30/1837](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/443 . . . {by matching or filtering}

#### **WARNING**

Group [G06V 10/443](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/443](#) is also impacted by reclassification into group [G06V 30/18019](#).

Groups [G06F 18/00](#), [G06V 10/443](#) and [G06V 30/18019](#) should be considered in order to perform a complete search.

10/446 . . . . {using Haar-like filters, e.g. using integral image techniques}

#### **WARNING**

Group [G06V 10/446](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/446](#) is also impacted by reclassification into group [G06V 30/18029](#).

Groups [G06F 18/00](#), [G06V 10/446](#) and [G06V 30/18029](#) should be considered in order to perform a complete search.

10/449 . . . . {Biologically inspired filters, e.g. difference of Gaussians [DoG] or Gabor filters}

#### **WARNING**

Group [G06V 10/449](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/449](#) is also impacted by reclassification into group [G06V 30/18038](#).

Groups [G06F 18/00](#), [G06V 10/449](#) and [G06V 30/18038](#) should be considered in order to perform a complete search.

10/451 . . . . . {with interaction between the filter responses, e.g. cortical complex cells}

#### **WARNING**

Group [G06V 10/451](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/451](#) is also impacted by reclassification into group [G06V 30/18048](#).

Groups [G06F 18/00](#), [G06V 10/451](#) and [G06V 30/18048](#) should be considered in order to perform a complete search.

10/454 . . . . . {Integrating the filters into a hierarchical structure, e.g. convolutional neural networks [CNN]}

#### **WARNING**

Group [G06V 10/454](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/454](#) is also impacted by reclassification into group [G06V 30/18057](#).

Groups [G06F 18/00](#), [G06V 10/454](#) and [G06V 30/18057](#) should be considered in order to perform a complete search.

10/457 . . . . {by analysing connectivity, e.g. edge linking, connected component analysis or slices}

#### **WARNING**

Group [G06V 10/457](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/457](#) is also impacted by reclassification into group [G06V 30/18076](#).

Groups [G06F 18/00](#), [G06V 10/457](#) and [G06V 30/18076](#) should be considered in order to perform a complete search.



- 10/46 . . Descriptors for shape, contour or point-related descriptors, e.g. scale invariant feature transform [SIFT] or bags of words [BoW]; Salient regional features ([colour feature extraction G06V 10/56](#))

**WARNING**

Group [G06V 10/46](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/46](#) is also impacted by reclassification into group [G06V 30/182](#).

Groups [G06F 18/00](#), [G06V 10/46](#) and [G06V 30/182](#) should be considered in order to perform a complete search.

- 10/462 . . . {Salient features, e.g. scale invariant feature transforms [SIFT]}

**WARNING**

Group [G06V 10/462](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/462](#) is also impacted by reclassification into group [G06V 30/18143](#).

Groups [G06F 18/00](#), [G06V 10/462](#) and [G06V 30/18143](#) should be considered in order to perform a complete search.

- 10/464 . . . . {using a plurality of salient features, e.g. bag-of-words [BoW] representations}

**WARNING**

Group [G06V 10/464](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/464](#) is also impacted by reclassification into group [G06V 30/18152](#).

Groups [G06F 18/00](#), [G06V 10/464](#) and [G06V 30/18152](#) should be considered in order to perform a complete search.

- 10/467 . . . {Encoded features or binary features, e.g. local binary patterns [LBP]}

**WARNING**

Group [G06V 10/467](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/467](#) is also impacted by reclassification into group [G06V 30/18133](#).

Groups [G06F 18/00](#), [G06V 10/467](#) and [G06V 30/18133](#) should be considered in order to perform a complete search.

- 10/469 . . . {Contour-based spatial representations, e.g. vector-coding}

**WARNING**

Group [G06V 10/469](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/469](#) is also impacted by reclassification into group [G06V 30/1823](#).

Groups [G06F 18/00](#), [G06V 10/469](#) and [G06V 30/1823](#) should be considered in order to perform a complete search.

- 10/471 . . . . {using approximation functions}

**WARNING**

Group [G06V 10/471](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/471](#) is also impacted by reclassification into group [G06V 30/1829](#).

Groups [G06F 18/00](#), [G06V 10/471](#) and [G06V 30/1829](#) should be considered in order to perform a complete search.

- 10/473 . . . . {using gradient analysis}

**WARNING**

Group [G06V 10/473](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/473](#) is also impacted by reclassification into group [G06V 30/1831](#).

Groups [G06F 18/00](#), [G06V 10/473](#) and [G06V 30/1831](#) should be considered in order to perform a complete search.

- 10/476 . . . . {using statistical shape modelling, e.g. point distribution models}

**WARNING**

Group [G06V 10/476](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/476](#) is also impacted by reclassification into group [G06V 30/1834](#).

Groups [G06F 18/00](#), [G06V 10/476](#) and [G06V 30/1834](#) should be considered in order to perform a complete search.

- 10/478 . . . {Contour-based spectral representations or scale-space representations, e.g. by Fourier analysis, wavelet analysis or curvature scale-space [CSS]}

**WARNING**

Group [G06V 10/478](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/478](#) is also impacted by reclassification into groups [G06V 30/1826](#) and [G06V 30/1837](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/48 . . by mapping characteristic values of the pattern into a parameter space, e.g. Hough transformation

**WARNING**

Group [G06V 10/48](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/48](#) is also impacted by reclassification into group [G06V 30/18067](#).

Groups [G06F 18/00](#), [G06V 10/48](#) and [G06V 30/18067](#) should be considered in order to perform a complete search.

- 10/50 . . by performing operations within image blocks; by using histograms, e.g. histogram of oriented gradients [HoG]; by summing image-intensity values; Projection analysis

**WARNING**

Group [G06V 10/50](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/50](#) is also impacted by reclassification into group [G06V 30/18086](#).

Groups [G06F 18/00](#), [G06V 10/50](#) and [G06V 30/18086](#) should be considered in order to perform a complete search.

- 10/507 . . . {Summing image-intensity values; Histogram projection analysis}

**WARNING**

Group [G06V 10/507](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/507](#) is also impacted by reclassification into group [G06V 30/18095](#).

Groups [G06F 18/00](#), [G06V 10/507](#) and [G06V 30/18095](#) should be considered in order to perform a complete search.

- 10/513 . . {Sparse representations}

**WARNING**

Group [G06V 10/513](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/513](#) is also impacted by reclassification into group [G06V 30/1819](#).

Groups [G06F 18/00](#), [G06V 10/513](#) and [G06V 30/1819](#) should be considered in order to perform a complete search.

- 10/52 . . Scale-space analysis, e.g. wavelet analysis (multi-scale boundary representations [G06V 10/42](#))

**WARNING**

Group [G06V 10/52](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/52](#) is also impacted by reclassification into group [G06V 30/189](#).

Groups [G06F 18/00](#), [G06V 10/52](#) and [G06V 30/189](#) should be considered in order to perform a complete search.

- 10/54 . . relating to texture

**WARNING**

Group [G06V 10/54](#) is incomplete pending reclassification of documents from group [G06V 10/40](#).

Groups [G06V 10/40](#) and [G06V 10/54](#) should be considered in order to perform a complete search.

- 10/56 . . relating to colour

**WARNING**

Group [G06V 10/56](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/56](#) is also impacted by reclassification into group [G06V 30/18105](#).

Groups [G06F 18/00](#), [G06V 10/56](#) and [G06V 30/18105](#) should be considered in order to perform a complete search.

- 10/58 . . relating to hyperspectral data

**WARNING**

Group [G06V 10/58](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/58](#) is also impacted by reclassification into group [G06V 30/18114](#).

Groups [G06F 18/00](#), [G06V 10/58](#) and [G06V 30/18114](#) should be considered in order to perform a complete search.

- 10/60 . . relating to illumination properties, e.g. using a reflectance or lighting model

**WARNING**

Group [G06V 10/60](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 10/60](#) is also impacted by reclassification into group [G06V 30/18124](#).

Groups [G06F 18/00](#), [G06V 10/60](#) and [G06V 30/18124](#) should be considered in order to perform a complete search.

- 10/62 . . relating to a temporal dimension, e.g. time-based feature extraction; Pattern tracking

**WARNING**

Group [G06V 10/62](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Groups [G06F 18/00](#) and [G06V 10/62](#) should be considered in order to perform a complete search.



- 10/70 . . . . . using pattern recognition or machine learning (optical pattern recognition or electronic computations therefor [G06V 10/88](#))
- WARNING**
- Groups [G06V 10/70](#) and [G06V 10/766](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/00](#), [G06F 18/21](#), [G06V 10/10](#), [G06V 10/20](#) and [G06V 30/194](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/72 . . . . . Data preparation, e.g. statistical preprocessing of image or video features
- WARNING**
- Group [G06V 10/72](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/10](#), [G06V 10/10](#) and [G06V 10/20](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/74 . . . . . Image or video pattern matching; Proximity measures in feature spaces
- 10/75 . . . . . Organisation of the matching processes, e.g. simultaneous or sequential comparisons of image or video features; Coarse-fine approaches, e.g. multi-scale approaches; using context analysis; Selection of dictionaries
- WARNING**
- Group [G06V 10/75](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/22](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/75](#) is also impacted by reclassification into groups [G06V 30/19007](#), [G06V 30/192](#), [G06V 30/196](#) and [G06V 30/198](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/751 . . . . . {Comparing pixel values or logical combinations thereof, or feature values having positional relevance, e.g. template matching}
- WARNING**
- Group [G06V 10/751](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/751](#) is also impacted by reclassification into group [G06V 30/19013](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/7515 . . . . . {Shifting the patterns to accommodate for positional errors}
- WARNING**
- Group [G06V 10/7515](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/7515](#) is also impacted by reclassification into group [G06V 30/1902](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/752 . . . . . {Contour matching}
- WARNING**
- Group [G06V 10/752](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/752](#) is also impacted by reclassification into group [G06V 30/19027](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/753 . . . . . {Transform-based matching, e.g. Hough transform}
- WARNING**
- Group [G06V 10/753](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/753](#) is also impacted by reclassification into group [G06V 30/19033](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/754 . . . . . {involving a deformation of the sample pattern or of the reference pattern; Elastic matching}
- WARNING**
- Group [G06V 10/754](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/754](#) is also impacted by reclassification into group [G06V 30/1904](#).
- All groups listed in this Warning should be considered in order to perform a complete search.

10/755 . . . . {Deformable models or variational models, e.g. snakes or active contours}

#### **WARNING**

Group [G06V 10/755](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/755](#) is also impacted by reclassification into group [G06V 30/19047](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/7553 . . . . {based on shape, e.g. active shape models [ASM]}

#### **WARNING**

Group [G06V 10/7553](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/7553](#) is also impacted by reclassification into group [G06V 30/19053](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/7557 . . . . {based on appearance, e.g. active appearance models [AAM]}

#### **WARNING**

Group [G06V 10/7557](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/7557](#) is also impacted by reclassification into group [G06V 30/1906](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/757 . . . . {Matching configurations of points or features}

#### **WARNING**

Group [G06V 10/757](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/757](#) is also impacted by reclassification into group [G06V 30/19067](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/758 . . . . {Involving statistics of pixels or of feature values, e.g. histogram matching}

#### **WARNING**

Group [G06V 10/758](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/758](#) is also impacted by reclassification into group [G06V 30/19073](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/759 . . . . {Region-based matching}

#### **WARNING**

Group [G06V 10/759](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/759](#) is also impacted by reclassification into group [G06V 30/1908](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/76 . . . . {based on eigen-space representations, e.g. from pose or different illumination conditions; Shape manifolds}

#### **WARNING**

Group [G06V 10/76](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/76](#) is also impacted by reclassification into group [G06V 30/19087](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/761 . . . . {Proximity, similarity or dissimilarity measures}

#### **WARNING**

Group [G06V 10/761](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/22](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/762 . . . using clustering, e.g. of similar faces in social networks

#### **WARNING**

Group [G06V 10/762](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/23](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7625 . . . {Hierarchical techniques, i.e. dividing or merging patterns to obtain a tree-like representation; Dendograms}

#### **WARNING**

Group [G06V 10/7625](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/231](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/763 . . . {Non-hierarchical techniques, e.g. based on statistics of modelling distributions}

#### **WARNING**

Group [G06V 10/763](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/232](#), [G06F 18/2321](#), [G06F 18/23211](#), [G06F 18/23213](#), [G06F 18/2321](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7635 . . . {based on graphs, e.g. graph cuts or spectral clustering}

#### **WARNING**

Group [G06V 10/7635](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/2323](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/764 . . . using classification, e.g. of video objects

#### **WARNING**

Group [G06V 10/764](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/24](#), [G06F 18/241](#), [G06F 18/2411](#), [G06F 18/2413](#), [G06F 18/24133](#), [G06F 18/24137](#), [G06F 18/2414](#), [G06F 18/24143](#), [G06F 18/24147](#), [G06F 18/2415](#), [G06F 18/24155](#), [G06F 18/243](#), [G06F 18/2431](#), [G06F 18/24317](#), [G06F 18/24323](#), [G06F 18/2433](#), [G06F 18/245](#), [G06F 18/2451](#), [G06F 18/2453](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/765 . . . {using rules for classification or partitioning the feature space}

#### **WARNING**

Group [G06V 10/765](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/24765](#), [G06F 18/2163](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/766 . . . using regression, e.g. by projecting features on hyperplanes

- 10/768 . . . {using context analysis, e.g. recognition aided by known co-occurring patterns}

#### **WARNING**

Group [G06V 10/768](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).

Group [G06V 10/768](#) is also impacted by reclassification into group [G06V 30/262](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/77 . . . Processing image or video features in feature spaces; using data integration or data reduction, e.g. principal component analysis [PCA] or independent component analysis [ICA] or self-organising maps [SOM]; Blind source separation
- 10/771 . . . Feature selection, e.g. selecting representative features from a multi-dimensional feature space

#### **WARNING**

Group [G06V 10/771](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/211](#), [G06F 18/2111](#), [G06F 18/2113](#), [G06F 18/2115](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7715 . . . {Feature extraction, e.g. by transforming the feature space, e.g. multi-dimensional scaling [MDS]; Mappings, e.g. subspace methods}

#### **WARNING**

Group [G06V 10/7715](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/213](#), [G06F 18/2132](#), [G06F 18/21322](#), [G06F 18/21324](#), [G06F 18/21326](#), [G06F 18/21328](#), [G06F 18/2133](#), [G06F 18/2134](#), [G06F 18/21342](#), [G06F 18/21343](#), [G06F 18/21345](#), [G06F 18/21347](#), [G06F 18/21348](#), [G06F 18/2135](#), [G06F 18/21355](#), [G06F 18/2136](#), [G06F 18/2137](#), [G06F 18/21375](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/772 . . . Determining representative reference patterns, e.g. averaging or distorting patterns; Generating dictionaries

#### **WARNING**

Group [G06V 10/772](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/28](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/774 . . . Generating sets of training patterns; Bootstrap methods, e.g. bagging or boosting

#### **WARNING**

Group [G06V 10/774](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/214](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7747 . . . {Organisation of the process, e.g. bagging or boosting}

#### **WARNING**

Group [G06V 10/7747](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/2148](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7753 . . . {Incorporation of unlabelled data, e.g. multiple instance learning [MIL]}

#### **WARNING**

Group [G06V 10/7753](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/2155](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/776 . . . Validation; Performance evaluation

#### **WARNING**

Group [G06V 10/776](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/217](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/778 . . . Active pattern-learning, e.g. online learning of image or video features

#### **WARNING**

Group [G06V 10/778](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/217](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7784 . . . {based on feedback from supervisors}

#### **WARNING**

Group [G06V 10/7784](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/2178](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7788 . . . {the supervisor being a human, e.g. interactive learning with a human teacher}

#### **WARNING**

Group [G06V 10/7788](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/41](#), [G06F 18/2185](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 10/7792 . . . {the supervisor being an automated module, e.g. "intelligent oracle"}

10/7796 . . . . {based on specific statistical tests}

#### **WARNING**

Group [G06V 10/7796](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/2193](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/80 . . . Fusion, i.e. combining data from various sources at the sensor level, preprocessing level, feature extraction level or classification level (multimodal speaker identification or verification [G10L 17/10](#))

#### **WARNING**

Group [G06V 10/80](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/25](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/803 . . . . {of input or preprocessed data}

#### **WARNING**

Group [G06V 10/803](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/251](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/806 . . . . {of extracted features}

#### **WARNING**

Group [G06V 10/806](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/253](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/809 . . . . {of classification results, e.g. where the classifiers operate on the same input data}

#### **WARNING**

Group [G06V 10/809](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/254](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/811 . . . . {the classifiers operating on different input data, e.g. multi-modal recognition}

#### **WARNING**

Group [G06V 10/811](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/256](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/814 . . . . {using belief theory, e.g. Dempster-Shafer}

#### **WARNING**

Group [G06V 10/814](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/257](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/817 . . . . {by voting}

#### **WARNING**

Group [G06V 10/817](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/259](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/82 . . using neural networks

10/84 . . using probabilistic graphical models from image or video features, e.g. Markov models or Bayesian networks

#### **WARNING**

Group [G06V 10/84](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/29](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/85 . . . {Markov-related models; Markov random fields}

#### **WARNING**

Group [G06V 10/85](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/295](#), [G06V 10/10](#) and [G06V 10/20](#).

All groups listed in this Warning should be considered in order to perform a complete search.

10/86 . . using syntactic or structural representations of the image or video pattern, e.g. symbolic string recognition; using graph matching

- 10/87 . . {using selection of the recognition techniques, e.g. of a classifier in a multiple classifier system}
- WARNING**
- Group [G06V 10/87](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/285](#), [G06V 10/10](#) and [G06V 10/20](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/88 . Image or video recognition using optical means, e.g. reference filters, holographic masks, frequency domain filters or spatial domain filters
- WARNING**
- Group [G06V 10/88](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/88](#) is also impacted by reclassification into groups [G06V 30/199](#) and [G06V 30/20](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/89 . . {using frequency domain filters, e.g. Fourier masks implemented on spatial light modulators}
- WARNING**
- Group [G06V 10/89](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/89](#) is also impacted by reclassification into group [G06V 30/199](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/893 . . . {characterised by the kind of filter}
- WARNING**
- Group [G06V 10/893](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/893](#) is also impacted by reclassification into group [G06V 30/199](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/895 . . . . {the filter being related to phase processing, e.g. phase-only filters}
- WARNING**
- Group [G06V 10/895](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/895](#) is also impacted by reclassification into group [G06V 30/199](#).
- All groups listed in this Warning should be considered in order to perform a complete search.

- 10/898 . . . . {combination of filters, e.g. phase-only filters}
- WARNING**
- Group [G06V 10/898](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/898](#) is also impacted by reclassification into group [G06V 30/199](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/92 . . {using spatial domain filters, e.g. joint transform correlators}
- WARNING**
- Group [G06V 10/92](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 10/20](#).
- Group [G06V 10/92](#) is also impacted by reclassification into group [G06V 30/199](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/94 . Hardware or software architectures specially adapted for image or video understanding
- WARNING**
- Groups [G06V 10/94](#), [G06V 10/95](#) and [G06V 10/955](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 10/945 . . {User interactive design; Environments; Toolboxes}
- WARNING**
- Group [G06V 10/945](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06F 18/40](#).
- Groups [G06F 18/00](#), [G06F 18/40](#) and [G06V 10/945](#) should be considered in order to perform a complete search.
- 10/95 . . {structured as a network, e.g. client-server architectures}
- 10/955 . . {using specific electronic processors}
- 10/96 . Management of image or video recognition tasks
- WARNING**
- Group [G06V 10/96](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Groups [G06F 18/00](#) and [G06V 10/96](#) should be considered in order to perform a complete search.



- 10/98 . Detection or correction of errors, e.g. by rescanning the pattern or by human intervention; Evaluation of the quality of the acquired patterns
- WARNING**
- Group [G06V 10/98](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 10/98](#) is also impacted by reclassification into group [G06V 30/12](#).
- Groups [G06F 18/00](#), [G06V 10/98](#) and [G06V 30/12](#) should be considered in order to perform a complete search.
- 10/987 . . {with the intervention of an operator}
- WARNING**
- Group [G06V 10/987](#) is impacted by reclassification into group [G06V 30/127](#).
- Groups [G06V 10/987](#) and [G06V 30/127](#) should be considered in order to perform a complete search.
- 10/993 . . {Evaluation of the quality of the acquired pattern}
- WARNING**
- Group [G06V 10/993](#) is impacted by reclassification into group [G06V 30/133](#).
- Groups [G06V 10/993](#) and [G06V 30/133](#) should be considered in order to perform a complete search.
- 20/00 Scenes; Scene-specific elements (control of digital cameras [H04N 23/60](#))**
- NOTE**
- In this group, the following term is used with the meaning indicated:
- "scene" is a visual representation of the world or of some elements of it, as captured by a sensor or generated by a computer.
- WARNING**
- Group [G06V 20/00](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 20/00](#) is also impacted by reclassification into groups [G06V 20/05](#), [G06V 20/50](#), [G06V 20/60](#), [G06V 20/66](#), [G06V 20/69](#), [G06V 20/693](#), [G06V 20/695](#), [G06V 20/698](#) and [G06V 20/70](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 20/05 . Underwater scenes
- WARNING**
- Group [G06V 20/05](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 20/00](#).
- Groups [G06F 18/00](#), [G06V 20/00](#) and [G06V 20/05](#) should be considered in order to perform a complete search.
- 20/10 . Terrestrial scenes ([scenes under surveillance with static cameras \[G06V 20/52\]\(#\)](#); [scenes perceived from the exterior of a vehicle \[G06V 20/56\]\(#\)](#); [scenes perceived from the interior of a vehicle \[G06V 20/59\]\(#\)](#))
- WARNING**
- Groups [G06V 20/10](#), [G06V 20/176](#), [G06V 20/182](#), [G06V 20/188](#) and [G06V 20/194](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 20/13 . . Satellite images
- WARNING**
- Group [G06V 20/13](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Group [G06V 20/13](#) is also impacted by reclassification into group [G06V 20/17](#).
- Groups [G06F 18/00](#), [G06V 20/13](#) and [G06V 20/17](#) should be considered in order to perform a complete search.
- 20/17 . . taken from planes or by drones
- WARNING**
- Group [G06V 20/17](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 20/13](#).
- Groups [G06F 18/00](#), [G06V 20/13](#) and [G06V 20/17](#) should be considered in order to perform a complete search.
- 20/176 . . {Urban or other man-made structures}
- 20/182 . . {Network patterns, e.g. roads or rivers}
- 20/188 . . {Vegetation}
- 20/194 . . {using hyperspectral data, i.e. more or other wavelengths than RGB}
- 20/20 . in augmented reality scenes
- WARNING**
- Group [G06V 20/20](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Groups [G06F 18/00](#) and [G06V 20/20](#) should be considered in order to perform a complete search.
- 20/30 . in albums, collections or shared content, e.g. social network photos or video
- WARNING**
- Group [G06V 20/30](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).
- Groups [G06F 18/00](#) and [G06V 20/30](#) should be considered in order to perform a complete search.

- 20/35 . {Categorising the entire scene, e.g. birthday party or wedding scene}

**WARNING**

Groups [G06V 20/35](#), [G06V 20/36](#), [G06V 20/38](#) and [G06V 20/39](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 20/36 . . {Indoor scenes}  
 20/38 . . {Outdoor scenes}  
 20/39 . . . {Urban scenes}  
 20/40 . in video content (extracting overlay text [G06V 20/62](#); video retrieval [G06F 16/70](#); processing of video elementary streams in video servers [H04N 21/234](#); processing of video elementary streams in video clients [H04N 21/44](#))

**WARNING**

Groups [G06V 20/40](#), [G06V 20/41](#), [G06V 20/42](#), [G06V 20/43](#), [G06V 20/44](#), [G06V 20/46](#), [G06V 20/47](#), [G06V 20/48](#) and [G06V 20/49](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 20/41 . . {Higher-level, semantic clustering, classification or understanding of video scenes, e.g. detection, labelling or Markovian modelling of sport events or news items (segmenting video sequences [G06V 20/49](#))}  
 20/42 . . . {of sport video content}  
 20/43 . . . {of news video content}  
 20/44 . . {Event detection}  
 20/46 . . {Extracting features or characteristics from the video content, e.g. video fingerprints, representative shots or key frames}  
 20/47 . . . {Detecting features for summarising video content}  
 20/48 . . {Matching video sequences}  
 20/49 . . {Segmenting video sequences, i.e. computational techniques such as parsing or cutting the sequence, low-level clustering or determining units such as shots or scenes}  
 20/50 . Context or environment of the image

**WARNING**

Group [G06V 20/50](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 20/00](#).

Groups [G06F 18/00](#), [G06V 20/00](#) and [G06V 20/50](#) should be considered in order to perform a complete search.

- 20/52 . . Surveillance or monitoring of activities, e.g. for recognising suspicious objects ([recognising microscopic objects G06V 20/69](#))

**WARNING**

Groups [G06V 20/52](#), [G06V 20/53](#) and [G06V 20/54](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 20/53 . . . {Recognition of crowd images, e.g. recognition of crowd congestion}  
 20/54 . . . of traffic, e.g. cars on the road, trains or boats  
 20/56 . . exterior to a vehicle by using sensors mounted on the vehicle

**WARNING**

Groups [G06V 20/56](#), [G06V 20/58](#), [G06V 20/582](#), [G06V 20/584](#), [G06V 20/586](#) and [G06V 20/588](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 20/58 . . . Recognition of moving objects or obstacles, e.g. vehicles or pedestrians; Recognition of traffic objects, e.g. traffic signs, traffic lights or roads  
 20/582 . . . . {of traffic signs}  
 20/584 . . . . {of vehicle lights or traffic lights}  
 20/586 . . . . {of parking space}  
 20/588 . . . {Recognition of the road, e.g. of lane markings; Recognition of the vehicle driving pattern in relation to the road}  
 20/59 . . inside of a vehicle, e.g. relating to seat occupancy, driver state or inner lighting conditions

**WARNING**

Groups [G06V 20/59](#), [G06V 20/593](#) and [G06V 20/597](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 20/593 . . . {Recognising seat occupancy}  
 20/597 . . . {Recognising the driver's state or behaviour, e.g. attention or drowsiness}

- 20/60 . Type of objects  
**WARNING**  
Groups [G06V 20/60](#), [G06V 20/66](#), [G06V 20/69](#), [G06V 20/693](#), [G06V 20/695](#) and [G06V 20/698](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 20/00](#).  
All groups listed in this Warning should be considered in order to perform a complete search.
- 20/62 . . Text, e.g. of license plates, overlay texts or captions on TV images  
**WARNING**  
Groups [G06V 20/62](#), [G06V 20/625](#), [G06V 20/63](#) and [G06V 20/635](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).  
All groups listed in this Warning should be considered in order to perform a complete search.
- 20/625 . . . {License plates}
- 20/63 . . . {Scene text, e.g. street names}
- 20/635 . . . {Overlay text, e.g. embedded captions in a TV program}
- 20/64 . . Three-dimensional objects  
**WARNING**  
Groups [G06V 20/64](#), [G06V 20/647](#) and [G06V 20/653](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).  
All groups listed in this Warning should be considered in order to perform a complete search.
- 20/647 . . . {by matching two-dimensional images to three-dimensional objects}
- 20/653 . . . {by matching three-dimensional models, e.g. conformal mapping of Riemann surfaces}
- 20/66 . . Trinkets, e.g. shirt buttons or jewellery items ([recognising microscopic objects G06V 20/69](#))
- 20/68 . . Food, e.g. fruit or vegetables  
**WARNING**  
Group [G06V 20/68](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).  
Groups [G06F 18/00](#) and [G06V 20/68](#) should be considered in order to perform a complete search.
- 20/69 . . Microscopic objects, e.g. biological cells or cellular parts
- 20/693 . . . {Acquisition}
- 20/695 . . . {Preprocessing, e.g. image segmentation}
- 20/698 . . . {Matching; Classification}
- 20/70 . Labelling scene content, e.g. deriving syntactic or semantic representations  
**WARNING**  
Group [G06V 20/70](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 20/00](#).  
Groups [G06F 18/00](#), [G06V 20/00](#) and [G06V 20/70](#) should be considered in order to perform a complete search.
- 20/80 . Recognising image objects characterised by unique random patterns  
**WARNING**  
Group [G06V 20/80](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).  
Groups [G06F 18/00](#) and [G06V 20/80](#) should be considered in order to perform a complete search.
- 20/90 . Identifying an image sensor based on its output data  
**WARNING**  
Group [G06V 20/90](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).  
Groups [G06F 18/00](#) and [G06V 20/90](#) should be considered in order to perform a complete search.
- 20/95 . {Pattern authentication; Markers therefor; Forgery detection}
- 30/00 Character recognition; Recognising digital ink; Document-oriented image-based pattern recognition** ([scanning, transmission or reproduction of documents or the like H04N 1/00](#))  
**NOTE**  
This group covers recognition of characters or digital ink, where the characters or the digital ink can include representations in three dimensions, e.g. as written by performing gestures in the air.  
**WARNING**  
Groups [G06V 30/00](#), [G06V 30/412](#), [G06V 30/413](#), [G06V 30/414](#), [G06V 30/416](#), [G06V 30/418](#), [G06V 30/42](#), [G06V 30/422](#) and [G06V 30/424](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).  
All groups listed in this Warning should be considered in order to perform a complete search.

30/10

- Character recognition

**WARNING**

Group [G06V 30/10](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 30/10](#) is also impacted by reclassification into groups [G06V 30/12](#), [G06V 30/127](#), [G06V 30/133](#), [G06V 30/14](#), [G06V 30/141](#), [G06V 30/142](#), [G06V 30/1423](#), [G06V 30/1426](#), [G06V 30/1429](#), [G06V 30/1431](#), [G06V 30/1434](#), [G06V 30/1437](#), [G06V 30/144](#), [G06V 30/1444](#), [G06V 30/1448](#), [G06V 30/1452](#), [G06V 30/1456](#), [G06V 30/146](#), [G06V 30/1463](#), [G06V 30/1465](#), [G06V 30/1468](#), [G06V 30/147](#), [G06V 30/1473](#), [G06V 30/1475](#), [G06V 30/1478](#), [G06V 30/148](#), [G06V 30/15](#), [G06V 30/153](#), [G06V 30/155](#), [G06V 30/158](#), [G06V 30/16](#), [G06V 30/1607](#), [G06V 30/1613](#), [G06V 30/162](#), [G06V 30/164](#), [G06V 30/166](#), [G06V 30/168](#), [G06V 30/18](#), [G06V 30/1801](#), [G06V 30/18019](#), [G06V 30/18029](#), [G06V 30/18038](#), [G06V 30/18048](#), [G06V 30/18057](#), [G06V 30/18067](#), [G06V 30/18076](#), [G06V 30/18086](#), [G06V 30/18095](#), [G06V 30/18105](#), [G06V 30/18114](#), [G06V 30/18124](#), [G06V 30/18133](#), [G06V 30/18143](#), [G06V 30/18152](#), [G06V 30/18162](#), [G06V 30/18171](#), [G06V 30/18181](#), [G06V 30/1819](#), [G06V 30/182](#), [G06V 30/1823](#), [G06V 30/1826](#), [G06V 30/1829](#), [G06V 30/1831](#), [G06V 30/1834](#), [G06V 30/1837](#), [G06V 30/184](#), [G06V 30/186](#), [G06V 30/187](#), [G06V 30/188](#), [G06V 30/189](#), [G06V 30/19](#), [G06V 30/19007](#), [G06V 30/19013](#), [G06V 30/1902](#), [G06V 30/19027](#), [G06V 30/19033](#), [G06V 30/1904](#), [G06V 30/19047](#), [G06V 30/19053](#), [G06V 30/1906](#), [G06V 30/19067](#), [G06V 30/19073](#), [G06V 30/1908](#), [G06V 30/19087](#), [G06V 30/19093](#), [G06V 30/191](#), [G06V 30/19107](#), [G06V 30/19113](#), [G06V 30/1912](#), [G06V 30/19127](#), [G06V 30/19133](#), [G06V 30/1914](#), [G06V 30/19147](#), [G06V 30/19153](#), [G06V 30/1916](#), [G06V 30/19167](#), [G06V 30/19173](#), [G06V 30/1918](#), [G06V 30/19187](#), [G06V 30/19193](#), [G06V 30/192](#), [G06V 30/194](#), [G06V 30/195](#), [G06V 30/196](#), [G06V 30/198](#), [G06V 30/1983](#), [G06V 30/1985](#), [G06V 30/1988](#), [G06V 30/199](#), [G06V 30/20](#), [G06V 30/22](#), [G06V 30/222](#), [G06V 30/224](#), [G06V 30/2247](#), [G06V 30/2253](#), [G06V 30/226](#), [G06V 30/2264](#), [G06V 30/2268](#), [G06V 30/2272](#), [G06V 30/2276](#), [G06V 30/228](#), [G06V 30/24](#), [G06V 30/242](#), [G06V 30/244](#), [G06V 30/2445](#), [G06V 30/245](#), [G06V 30/2455](#), [G06V 30/246](#), [G06V 30/248](#), [G06V 30/2504](#), [G06V 30/2528](#), [G06V 30/2552](#), [G06V 30/26](#), [G06V 30/262](#), [G06V 30/268](#), [G06V 30/274](#), [G06V 30/28](#), [G06V 30/287](#), [G06V 30/293](#), [G06V 30/30](#), [G06V 30/302](#), [G06V 30/304](#), [G06V 30/32](#), [G06V 30/333](#), [G06V 30/347](#), [G06V 30/36](#), [G06V 30/373](#) and [G06V 30/387](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/12

- Detection or correction of errors, e.g. by rescanning the pattern

**WARNING**

Group [G06V 30/12](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/98](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/127

- {with the intervention of an operator}

**WARNING**

Group [G06V 30/127](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/987](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/133

- {Evaluation of quality of the acquired characters}

**WARNING**

Group [G06V 30/133](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/993](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/14

- Image acquisition

**WARNING**

Groups [G06V 30/14](#), [G06V 30/1423](#), [G06V 30/144](#), [G06V 30/153](#) and [G06V 30/158](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/141

- {using multiple overlapping images; Image stitching}

**WARNING**

Group [G06V 30/141](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/16](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/142 . . . using hand-held instruments; Constructional details of the instruments

#### **WARNING**

Group [G06V 30/142](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/12](#), [G06V 10/17](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1423 . . . . {the instrument generating sequences of position coordinates corresponding to handwriting (preprocessing or recognising digital ink [G06V 30/32](#))}

- 30/1426 . . . . {by sensing position defining codes on a support}

#### **WARNING**

Group [G06V 30/1426](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/19](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1429 . . . . {Identifying or ignoring parts by sensing at different wavelengths}

#### **WARNING**

Group [G06V 30/1429](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/143](#), [G06V 10/147](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1431 . . . . {Illumination control}

#### **WARNING**

Group [G06V 30/1431](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/141](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1434 . . . . {Special illumination such as grating, reflections or deflections, e.g. for characters with relief}

#### **WARNING**

Group [G06V 30/1434](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/145](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1437 . . . . {Sensor details, e.g. position, configuration or special lenses ([G06V 30/1429](#) takes precedence)}

#### **WARNING**

Group [G06V 30/1437](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/147](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/144 . . . . using a slot moved over the image; using discrete sensing elements at predetermined points; using automatic curve following means

- 30/1444 . . . . {Selective acquisition, locating or processing of specific regions, e.g. highlighted text, fiducial marks or predetermined fields}

#### **WARNING**

Group [G06V 30/1444](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/22](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1448 . . . . {based on markings or identifiers characterising the document or the area}

#### **WARNING**

Group [G06V 30/1448](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/225](#), [G06V 10/245](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1452 . . . . {based on positionally close symbols, e.g. amount sign or URL-specific characters}

#### **WARNING**

Group [G06V 30/1452](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/23](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1456 . . . . {based on user interactions}

#### **WARNING**

Group [G06V 30/1456](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/235](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/146 . . . Aligning or centring of the image pick-up or image-field

**WARNING**

Group [G06V 30/146](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/24](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1463 . . . . {Orientation detection or correction, e.g. rotation of multiples of 90 degrees}

**WARNING**

Group [G06V 30/1463](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/242](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1465 . . . . {by locating a pattern ([G06V 30/1475](#) takes precedence; centring within a document with a marking [G06V 30/1448](#))}

**WARNING**

Groups [G06V 30/1465](#) and [G06V 30/1468](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/245](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1468 . . . . . {Special marks for positioning}  
30/147 . . . . {Determination of region of interest}

**WARNING**

Group [G06V 30/147](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/25](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1473 . . . . {Recognising objects as potential recognition candidates based on visual cues, e.g. shapes}

**WARNING**

Group [G06V 30/1473](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/255](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1475 . . . . {Inclination or skew detection or correction of characters or of image to be recognised}

**WARNING**

Group [G06V 30/1475](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/243](#), [G06V 10/245](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/1478 . . . . . {of characters or characters lines}

**WARNING**

Group [G06V 30/1478](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/245](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/148 . . . Segmentation of character regions

**WARNING**

Group [G06V 30/148](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/26](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/15 . . . . {Cutting or merging image elements, e.g. region growing, watershed or clustering-based techniques}

**WARNING**

Group [G06V 30/15](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/267](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/153 . . . . {using recognition of characters or words}

- 30/155 . . . . {Removing patterns interfering with the pattern to be recognised, such as ruled lines or underlines}

**WARNING**

Group [G06V 30/155](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/273](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/158 . . . . {using character size, text spacings or pitch estimation}



## 30/16 . . . Image preprocessing

**WARNING**

Group [G06V 30/16](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/1607 . . . {Correcting image deformation, e.g. trapezoidal deformation caused by perspective}

**WARNING**

Group [G06V 30/1607](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#), [G06V 10/247](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/1613 . . . {Interactive preprocessing or shape modelling, e.g. assignment of feature points by a user}

**WARNING**

Group [G06V 30/1613](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#), [G06V 10/248](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/162 . . . Quantising the image signal

**WARNING**

Group [G06V 30/162](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#), [G06V 10/28](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/164 . . . Noise filtering

**WARNING**

Group [G06V 30/164](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#), [G06V 10/30](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/166 . . . Normalisation of pattern dimensions

**WARNING**

Group [G06V 30/166](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#), [G06V 10/32](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/168 . . . Smoothing or thinning of the pattern; Skeletonisation

**WARNING**

Group [G06V 30/168](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/20](#), [G06V 10/34](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/18 . . . Extraction of features or characteristics of the image

**WARNING**

Group [G06V 30/18](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/40](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1801 . . . {Detecting partial patterns, e.g. edges or contours, or configurations, e.g. loops, corners, strokes or intersections (extracting features by contour coding [G06V 30/182](#))}**WARNING**

Group [G06V 30/1801](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/18019 . . . . {by matching or filtering}

**WARNING**

Group [G06V 30/18019](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/443](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

## 30/18029 . . . . {filtering with Haar-like subimages, e.g. computation thereof with the integral image technique}

**WARNING**

Group [G06V 30/18029](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/446](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18038 . . . . . {Biologically-inspired filters, e.g. difference of Gaussians [DoG], Gabor filters}

#### **WARNING**

Group [G06V 30/18038](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/449](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18048 . . . . . {with interaction between the responses of different filters, e.g. cortical complex cells}

#### **WARNING**

Group [G06V 30/18048](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/451](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18057 . . . . . {Integrating the filters into a hierarchical structure, e.g. convolutional neural networks [CNN]}

#### **WARNING**

Group [G06V 30/18057](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/454](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18067 . . . . . {by mapping characteristic values of the pattern into a parameter space, e.g. Hough transformation}

#### **WARNING**

Group [G06V 30/18067](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/48](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18076 . . . . . {by analysing connectivity, e.g. edge linking, connected component analysis or slices}

#### **WARNING**

Group [G06V 30/18076](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/457](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18086 . . . . . {by performing operations within image blocks or by using histograms}

#### **WARNING**

Group [G06V 30/18086](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/50](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18095 . . . . . {Summing image-intensity values; Projection and histogram analysis}

#### **WARNING**

Group [G06V 30/18095](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/507](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18105 . . . . . {related to colour}

#### **WARNING**

Group [G06V 30/18105](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/56](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18114 . . . . . {involving specific hyperspectral computations of features}

#### **WARNING**

Group [G06V 30/18114](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/58](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18124 . . . . . {related to illumination properties, e.g. according to a reflectance or lighting model}

#### **WARNING**

Group [G06V 30/18124](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/60](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18133 . . . {regional/local feature not essentially salient, e.g. local binary pattern}

#### **WARNING**

Group [G06V 30/18133](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/467](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18143 . . . {Extracting features based on salient regional features, e.g. scale invariant feature transform [SIFT] keypoints}

#### **WARNING**

Group [G06V 30/18143](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/462](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18152 . . . {Extracting features based on a plurality of salient regional features, e.g. "bag of words"}

#### **WARNING**

Group [G06V 30/18152](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/464](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18162 . . . {related to a structural representation of the pattern}

#### **WARNING**

Group [G06V 30/18162](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/422](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18171 . . . {Syntactic representation, e.g. using a grammatical approach}

#### **WARNING**

Group [G06V 30/18171](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/424](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/18181 . . . {Graphical representation, e.g. directed attributed graph}

#### **WARNING**

Group [G06V 30/18181](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/426](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1819 . . . {sparse representations}

#### **WARNING**

Group [G06V 30/1819](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/513](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/182 . . . by coding the contour of the pattern

#### **WARNING**

Group [G06V 30/182](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/46](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1823 . . . {using vector-coding}

#### **WARNING**

Group [G06V 30/1823](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/469](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1826 . . . {analysing the spectrum of the contour, e.g. Fourier expansion}

#### **WARNING**

Group [G06V 30/1826](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/478](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1829 . . . {using an approximation function}

#### **WARNING**

Group [G06V 30/1829](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/471](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1831 . . . . {using gradient analysis}

**WARNING**

Group [G06V 30/1831](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/473](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1834 . . . . {using statistical shape modelling, e.g. point distribution model}

**WARNING**

Group [G06V 30/1834](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/476](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1837 . . . . {using wavelet analysis}

**WARNING**

Group [G06V 30/1837](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/44](#), [G06V 10/478](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/184 . . . . by analysing segments intersecting the pattern

**WARNING**

Group [G06V 30/184](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/421](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/186 . . . . by deriving mathematical or geometrical properties from the whole image

**WARNING**

Group [G06V 30/186](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/42](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/187 . . . . {Frequency domain transformation; Autocorrelation}

**WARNING**

Group [G06V 30/187](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/431](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/188 . . . . {Computation of moments}

**WARNING**

Group [G06V 30/188](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/435](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/189 . . . . {Scale-space domain transformation, e.g. with wavelet analysis}

**WARNING**

Group [G06V 30/189](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/52](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19 . . . Recognition using electronic means

**WARNING**

Group [G06V 30/19](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/00](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19007 . . . . {Matching; Proximity measures}

**WARNING**

Group [G06V 30/19007](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/22](#), [G06V 10/75](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19013 . . . . {Comparing pixel values or logical combinations thereof, or feature values having positional relevance, e.g. template matching (specially adapted for image segmentation [G06T 7/10](#); specially adapted for the analysis of motion [G06T 7/20](#); specially adapted for image alignment [G06T 7/30](#); specially adapted for the calculation of depth from stereo images [G06T 7/50](#); specially adapted for position determination [G06T 7/70](#))}**WARNING**

Group [G06V 30/19013](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/751](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1902 . . . . . {Shifting or otherwise transforming the patterns to accommodate for positional errors}

#### **WARNING**

Group [G06V 30/1902](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/7515](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19027 . . . . . {Matching of contours}

#### **WARNING**

Group [G06V 30/19027](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/752](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19033 . . . . . {by mapping curve parameters onto an accumulator array, e.g. generalised Hough Transform}

#### **WARNING**

Group [G06V 30/19033](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/753](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1904 . . . . . {involving a deformation of the sample or reference pattern; Elastic matching}

#### **WARNING**

Group [G06V 30/1904](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/754](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19047 . . . . . {based on a local optimisation criterion, e.g. "snakes", i.e. active contour models of the pattern to be recognised}

#### **WARNING**

Group [G06V 30/19047](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/755](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19053 . . . . . {based on shape statistics, e.g. active shape models of the pattern to be recognised}

#### **WARNING**

Group [G06V 30/19053](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/7553](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1906 . . . . . {based also on statistics of image patches, e.g. active appearance models of the pattern to be recognised}

#### **WARNING**

Group [G06V 30/1906](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/7557](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19067 . . . . . {Matching configurations of points or features, e.g. constellation matching}

#### **WARNING**

Group [G06V 30/19067](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/757](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19073 . . . . . {Comparing statistics of pixel or of feature values, e.g. histogram matching}

#### **WARNING**

Group [G06V 30/19073](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/758](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1908 . . . . . {Region based matching}

#### **WARNING**

Group [G06V 30/1908](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/759](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19087 . . . . {based on parametric eigenspace representations, e.g. eigenspace representations using pose or illumination parameters; Shape manifold}

#### **WARNING**

Group [G06V 30/19087](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/76](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19093 . . . . {Proximity measures, i.e. similarity or distance measures}

#### **WARNING**

Group [G06V 30/19093](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/22](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/191 . . . . {Design or setup of recognition systems or techniques; Extraction of features in feature space; Clustering techniques; Blind source separation}

#### **WARNING**

Group [G06V 30/191](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/21](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19107 . . . . {Clustering techniques}

#### **WARNING**

Group [G06V 30/19107](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/23](#), [G06F 18/231](#), [G06F 18/232](#), [G06F 18/2321](#), [G06F 18/23211](#), [G06F 18/23213](#), [G06F 18/2323](#), [G06F 18/2321](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19113 . . . . {Selection of pattern recognition techniques, e.g. of classifiers in a multi-classifier system}

#### **WARNING**

Group [G06V 30/19113](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/285](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1912 . . . . {Selecting the most significant subset of features ([G06V 30/19127](#) takes precedence)}

#### **WARNING**

Group [G06V 30/1912](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/211](#), [G06F 18/2111](#), [G06F 18/2113](#), [G06F 18/2115](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19127 . . . . {Extracting features by transforming the feature space, e.g. multidimensional scaling; Mappings, e.g. subspace methods}

#### **WARNING**

Group [G06V 30/19127](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/213](#), [G06F 18/2132](#), [G06F 18/21322](#), [G06F 18/21324](#), [G06F 18/21326](#), [G06F 18/21328](#), [G06F 18/2133](#), [G06F 18/2134](#), [G06F 18/21342](#), [G06F 18/21343](#), [G06F 18/21345](#), [G06F 18/21347](#), [G06F 18/21348](#), [G06F 18/2135](#), [G06F 18/21355](#), [G06F 18/2136](#), [G06F 18/2137](#), [G06F 18/21375](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19133 . . . . {Interactive pattern learning with a human teacher}

#### **WARNING**

Group [G06V 30/19133](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/41](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1914 . . . . {Determining representative reference patterns, e.g. averaging or distorting patterns; Generating dictionaries, e.g. user dictionaries}

#### **WARNING**

Group [G06V 30/1914](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/28](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.



30/19147 . . . . {Obtaining sets of training patterns;  
Bootstrap methods, e.g. bagging or boosting}

#### **WARNING**

Group [G06V 30/19147](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/214](#), [G06F 18/2148](#), [G06F 18/2155](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19153 . . . . {using rules for classification or partitioning the feature space}

#### **WARNING**

Group [G06V 30/19153](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/24765](#), [G06F 18/2163](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1916 . . . . {Validation; Performance evaluation}

#### **WARNING**

Group [G06V 30/1916](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/217](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19167 . . . . {Active pattern learning}

#### **WARNING**

Group [G06V 30/19167](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/217](#), [G06F 18/2178](#), [G06F 18/2185](#), [G06F 18/2193](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19173 . . . . {Classification techniques}

#### **WARNING**

Group [G06V 30/19173](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/24](#), [G06F 18/241](#), [G06F 18/2411](#), [G06F 18/2413](#), [G06F 18/24133](#), [G06F 18/24137](#), [G06F 18/2414](#), [G06F 18/24143](#), [G06F 18/24147](#), [G06F 18/2415](#), [G06F 18/24155](#), [G06F 18/243](#), [G06F 18/2431](#), [G06F 18/24317](#), [G06F 18/24323](#), [G06F 18/2433](#), [G06F 18/245](#), [G06F 18/2451](#), [G06F 18/2453](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/1918 . . . . {Fusion techniques, i.e. combining data from various sources, e.g. sensor fusion}

#### **WARNING**

Group [G06V 30/1918](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/25](#), [G06F 18/251](#), [G06F 18/253](#), [G06F 18/254](#), [G06F 18/256](#), [G06F 18/257](#), [G06F 18/259](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19187 . . . . {Graphical models, e.g. Bayesian networks or Markov models}

#### **WARNING**

Group [G06V 30/19187](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/29](#), [G06F 18/295](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

30/19193 . . . . {Statistical pre-processing, e.g. techniques for normalisation or restoring missing data}

#### **WARNING**

Group [G06V 30/19193](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/10](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/192 . . . using simultaneous comparisons or correlations of the image signals with a plurality of references
- WARNING**
- Group [G06V 30/192](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/75](#) and [G06V 30/10](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/194 . . . . References adjustable by an adaptive method, e.g. learning
- WARNING**
- Group [G06V 30/194](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).
- Group [G06V 30/194](#) is also impacted by reclassification into groups [G06V 10/70](#) and [G06V 10/766](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/195 . . . . {using a resistor matrix}
- WARNING**
- Group [G06V 30/195](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).
- Groups [G06F 18/00](#), [G06V 30/10](#) and [G06V 30/195](#) should be considered in order to perform a complete search.
- 30/196 . . . using sequential comparisons of the image signals with a plurality of references
- WARNING**
- Groups [G06V 30/196](#) and [G06V 30/198](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/75](#) and [G06V 30/10](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/198 . . . . the selection of the next reference depending on the result of the preceding comparison
- 30/1983 . . . . {Syntactic or structural pattern recognition, e.g. symbolic string recognition}
- WARNING**
- Groups [G06V 30/1983](#), [G06V 30/1985](#) and [G06V 30/1988](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/1985 . . . . . {Syntactic analysis, e.g. using a grammatical approach (syntactic image representation [G06V 30/18171](#))}
- 30/1988 . . . . . {Graph matching (graphical image representation [G06V 30/18181](#))}
- 30/199 . . Arrangements for recognition using optical reference masks, e.g. holographic masks
- WARNING**
- Group [G06V 30/199](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/20](#), [G06V 10/88](#), [G06V 10/89](#), [G06V 10/893](#), [G06V 10/895](#), [G06V 10/898](#), [G06V 10/92](#) and [G06V 30/10](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/20 . . Combination of acquisition, preprocessing or recognition functions
- WARNING**
- Group [G06V 30/20](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/10](#), [G06V 10/20](#), [G06V 10/36](#), [G06V 10/88](#) and [G06V 30/10](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/22 . . characterised by the type of writing
- WARNING**
- Groups [G06V 30/22](#), [G06V 30/222](#), [G06V 30/226](#), [G06V 30/2264](#), [G06V 30/2268](#), [G06V 30/2272](#), [G06V 30/2276](#) and [G06V 30/228](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/222 . . . of characters separated by spaces
- 30/224 . . . of printed characters having additional code marks or containing code marks
- WARNING**
- Groups [G06V 30/224](#), [G06V 30/2247](#) and [G06V 30/2253](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 30/10](#) and [G06V 30/40](#).
- All groups listed in this Warning should be considered in order to perform a complete search.
- 30/2247 . . . . {Characters composed of bars, e.g. CMC-7}
- 30/2253 . . . . {Recognition of characters printed with magnetic ink ([G06V 30/2247](#) takes precedence)}
- 30/226 . . . of cursive writing
- 30/2264 . . . . {using word shape}
- 30/2268 . . . . {using stroke segmentation}
- 30/2272 . . . . . {with lexical matching}

- 30/2276 . . . . {with probabilistic networks, e.g. hidden Markov models}
- 30/228 . . . of three-dimensional handwriting, e.g. writing in the air
- 30/24 . . characterised by the processing or recognition method (segmentation of character regions [G06V 30/148](#))

**WARNING**

Groups [G06V 30/24](#), [G06V 30/242](#), [G06V 30/244](#), [G06V 30/2445](#), [G06V 30/245](#), [G06V 30/2455](#), [G06V 30/246](#), [G06V 30/248](#), [G06V 30/2504](#), [G06V 30/2528](#) and [G06V 30/2552](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/242 . . . Division of the character sequences into groups prior to recognition; Selection of dictionaries
- 30/244 . . . . using graphical properties, e.g. alphabet type or font
- 30/2445 . . . . {Alphabet recognition, e.g. Latin, Kanji or Katakana}
- 30/245 . . . . {Font recognition}
- 30/2455 . . . . {Discrimination between machine-print, hand-print and cursive writing}
- 30/246 . . . . using linguistic properties, e.g. specific for English or German language
- 30/248 . . . {involving plural approaches, e.g. verification by template match; Resolving confusion among similar patterns, e.g. "O" versus "Q" ([G06V 30/242](#) takes precedence)}
- 30/2504 . . . . {Coarse or fine approaches, e.g. resolution of ambiguities or multiscale approaches}
- 30/2528 . . . . {Combination of methods, e.g. classifiers, working on the same input data}
- 30/2552 . . . . {Combination of methods, e.g. classifiers, working on different input data, e.g. sensor fusion}
- 30/26 . . Techniques for post-processing, e.g. correcting the recognition result

**WARNING**

Groups [G06V 30/26](#), [G06V 30/268](#) and [G06V 30/274](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/262 . . . using context analysis, e.g. lexical, syntactic or semantic context

**WARNING**

Group [G06V 30/262](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06V 10/768](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/268 . . . . {Lexical context}

- 30/274 . . . . {Syntactic or semantic context, e.g. balancing}
- 30/28 . . specially adapted to the type of the alphabet, e.g. Latin alphabet

**WARNING**

Groups [G06V 30/28](#), [G06V 30/287](#) and [G06V 30/293](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/287 . . . {of Kanji, Hiragana or Katakana characters}
- 30/293 . . . {of characters other than Kanji, Hiragana or Katakana}
- 30/30 . . based on the type of data

**WARNING**

Groups [G06V 30/30](#) and [G06V 30/304](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/302 . . . Images containing characters for discriminating human versus automated computer access

**WARNING**

Group [G06V 30/302](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#), [G06F 18/217](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/304 . . . Music notations
- 30/32 . . Digital ink

**WARNING**

Groups [G06V 30/32](#), [G06V 30/333](#), [G06V 30/347](#), [G06V 30/36](#), [G06V 30/373](#) and [G06V 30/387](#) are incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/333 . . . {Preprocessing; Feature extraction}
- 30/347 . . . . {Sampling; Contour coding; Stroke extraction}
- 30/36 . . . {Matching; Classification}
- 30/373 . . . . {using a special pattern or subpattern alphabet}
- 30/387 . . . . {using human interaction, e.g. selection of the best displayed recognition candidate}

- 30/40 . Document-oriented image-based pattern recognition

#### **WARNING**

Group [G06V 30/40](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 30/40](#) is also impacted by reclassification into groups [G06V 30/224](#), [G06V 30/2247](#), [G06V 30/2253](#) and [G06V 30/41](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 30/41 . . Analysis of document content ([recognition of printed characters based on code marks G06V 30/224](#))

#### **WARNING**

Group [G06V 30/41](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 30/40](#).

Groups [G06F 18/00](#), [G06V 30/40](#) and [G06V 30/41](#) should be considered in order to perform a complete search.

- 30/412 . . . Layout analysis of documents structured with printed lines or input boxes, e.g. business forms or tables
- 30/413 . . . Classification of content, e.g. text, photographs or tables
- 30/414 . . . Extracting the geometrical structure, e.g. layout tree; Block segmentation, e.g. bounding boxes for graphics or text
- 30/416 . . . Extracting the logical structure, e.g. chapters, sections or page numbers; Identifying elements of the document, e.g. authors
- 30/418 . . . Document matching, e.g. of document images
- 30/42 . . based on the type of document
- 30/422 . . . Technical drawings; Geographical maps
- 30/424 . . . Postal images, e.g. labels or addresses on parcels or postal envelopes
- 30/43 . . {[Editing text-bitmaps, e.g. alignment, spacing; Semantic analysis of bitmaps of text without OCR](#)}

40/00

### **Recognition of biometric, human-related or animal-related patterns in image or video data**

#### **WARNING**

Groups [G06V 40/00](#), [G06V 40/10](#), [G06V 40/103](#), [G06V 40/107](#), [G06V 40/11](#), [G06V 40/113](#), [G06V 40/117](#), [G06V 40/12](#), [G06V 40/1306](#), [G06V 40/1312](#), [G06V 40/1318](#), [G06V 40/1324](#), [G06V 40/1329](#), [G06V 40/1335](#), [G06V 40/1341](#), [G06V 40/1347](#), [G06V 40/1353](#), [G06V 40/1359](#), [G06V 40/1365](#), [G06V 40/1371](#), [G06V 40/1376](#), [G06V 40/1382](#), [G06V 40/1388](#), [G06V 40/1394](#), [G06V 40/14](#), [G06V 40/15](#), [G06V 40/155](#), [G06V 40/16](#), [G06V 40/161](#), [G06V 40/162](#), [G06V 40/164](#), [G06V 40/165](#), [G06V 40/166](#), [G06V 40/167](#), [G06V 40/168](#), [G06V 40/169](#), [G06V 40/171](#), [G06V 40/172](#), [G06V 40/173](#), [G06V 40/174](#), [G06V 40/175](#), [G06V 40/176](#), [G06V 40/178](#), [G06V 40/179](#), [G06V 40/18](#), [G06V 40/19](#), [G06V 40/193](#), [G06V 40/197](#), [G06V 40/20](#), [G06V 40/23](#), [G06V 40/25](#), [G06V 40/28](#), [G06V 40/30](#), [G06V 40/33](#), [G06V 40/37](#), [G06V 40/376](#), [G06V 40/382](#), [G06V 40/388](#), [G06V 40/394](#), [G06V 40/40](#), [G06V 40/45](#), [G06V 40/50](#), [G06V 40/53](#), [G06V 40/55](#), [G06V 40/58](#), [G06V 40/60](#), [G06V 40/63](#), [G06V 40/67](#) and [G06V 40/70](#) are incomplete pending reclassification of documents from group [G06F 18/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- 40/10 . Human or animal bodies, e.g. vehicle occupants or pedestrians; Body parts, e.g. hands
- 40/103 . . {[Static body considered as a whole, e.g. static pedestrian or occupant recognition](#)}
- 40/107 . . {[Static hand or arm](#)}
- 40/11 . . . {[Hand-related biometrics; Hand pose recognition](#)}
- 40/113 . . . {[Recognition of static hand signs](#)}
- 40/117 . . . {[Biometrics derived from hands](#)}
- 40/12 . . Fingerprints or palmprints
- 40/13 . . . Sensors therefor

#### **WARNING**

Group [G06V 40/13](#) is incomplete pending reclassification of documents from group [G06F 18/00](#).

Group [G06V 40/13](#) is also impacted by reclassification into group [G06V 40/145](#).

Groups [G06F 18/00](#), [G06V 40/13](#) and [G06V 40/145](#) should be considered in order to perform a complete search.

- 40/1306 . . . . {[non-optical, e.g. ultrasonic or capacitive sensing](#)}
- 40/1312 . . . . {[direct reading, e.g. contactless acquisition](#)}
- 40/1318 . . . . {[using electro-optical elements or layers, e.g. electroluminescent sensing](#)}
- 40/1324 . . . . {[by using geometrical optics, e.g. using prisms \(G06V 40/1312 takes precedence\)](#)}
- 40/1329 . . . . {[Protecting the fingerprint sensor against damage caused by the finger](#)}

- 40/1335 . . . {Combining adjacent partial images (e.g. slices) to create a composite input or reference pattern; Tracking a sweeping finger movement}
- 40/1341 . . . {Sensing with light passing through the finger}
- 40/1347 . . . {Preprocessing; Feature extraction}
- 40/1353 . . . . {Extracting features related to minutiae or pores}
- 40/1359 . . . . {Extracting features related to ridge properties; Determining the fingerprint type, e.g. whorl or loop}
- 40/1365 . . . {Matching; Classification}
- 40/1371 . . . . {Matching features related to minutiae or pores}
- 40/1376 . . . . {Matching features related to ridge properties or fingerprint texture}
- 40/1382 . . . {Detecting the live character of the finger, i.e. distinguishing from a fake or cadaver finger}
- 40/1388 . . . . {using image processing}
- 40/1394 . . . . {using acquisition arrangements}
- 40/14 . . Vascular patterns
- 40/145 . . . Sensors therefor

**WARNING**

Group [G06V 40/145](#) is incomplete pending reclassification of documents from groups [G06F 18/00](#) and [G06V 40/13](#).

Groups [G06F 18/00](#), [G06V 40/13](#) and [G06V 40/145](#) should be considered in order to perform a complete search.

- 40/15 . . {Biometric patterns based on physiological signals, e.g. heartbeat, blood flow}
- 40/155 . . {use of biometric patterns for forensic purposes}
- 40/16 . . Human faces, e.g. facial parts, sketches or expressions
- 40/161 . . . {Detection; Localisation; Normalisation}
- 40/162 . . . . {using pixel segmentation or colour matching}
- 40/164 . . . . {using holistic features}
- 40/165 . . . . {using facial parts and geometric relationships}
- 40/166 . . . . {using acquisition arrangements}
- 40/167 . . . . {using comparisons between temporally consecutive images}
- 40/168 . . . {Feature extraction; Face representation}
- 40/169 . . . . {Holistic features and representations, i.e. based on the facial image taken as a whole}
- 40/171 . . . . {Local features and components; Facial parts ([eye characteristics G06V 40/18](#)); Occluding parts, e.g. glasses; Geometrical relationships}
- 40/172 . . . {Classification, e.g. identification}
- 40/173 . . . . {face re-identification, e.g. recognising unknown faces across different face tracks}
- 40/174 . . . {Facial expression recognition}
- 40/175 . . . . {Static expression}
- 40/176 . . . . {Dynamic expression}
- 40/178 . . . {estimating age from face image; using age information for improving recognition}
- 40/179 . . . {metadata assisted face recognition}
- 40/18 . . Eye characteristics, e.g. of the iris
- 40/19 . . . Sensors therefor
- 40/193 . . . {Preprocessing; Feature extraction}

- 40/197 . . . {Matching; Classification}
- 40/20 . . Movements or behaviour, e.g. gesture recognition ([recognition of facial expressions G06V 40/16](#))
- 40/23 . . {Recognition of whole body movements, e.g. for sport training}
- 40/25 . . . {Recognition of walking or running movements, e.g. gait recognition}
- 40/28 . . {Recognition of hand or arm movements, e.g. recognition of deaf sign language ([static hand signs G06V 40/113](#))}
- 40/30 . . Writer recognition; Reading and verifying signatures
- 40/33 . . {based only on signature image, e.g. static signature recognition}
- 40/37 . . {based only on signature signals such as velocity or pressure, e.g. dynamic signature recognition}
- 40/376 . . . {Acquisition}
- 40/382 . . . {Preprocessing; Feature extraction}
- 40/388 . . . . {Sampling; Contour coding; Stroke extraction}
- 40/394 . . . {Matching; Classification}
- 40/40 . . Spoof detection, e.g. liveness detection
- 40/45 . . {Detection of the body part being alive}
- 40/50 . . Maintenance of biometric data or enrolment thereof
- 40/53 . . {Measures to keep reference information secret, e.g. cancellable biometrics}
- 40/55 . . {Performing matching on a personal external card, e.g. to avoid submitting reference information}
- 40/58 . . {Solutions for unknown imposter distribution}
- 40/60 . . Static or dynamic means for assisting the user to position a body part for biometric acquisition
- 40/63 . . {by static guides}
- 40/67 . . {by interactive indications to the user}
- 40/70 . . Multimodal biometrics, e.g. combining information from different biometric modalities

**2201/00 Indexing scheme relating to image or video recognition or understanding**

- 2201/01 . . Solutions for problems related to non-uniform document background
- 2201/02 . . Recognising information on displays, dials, clocks
- 2201/03 . . Recognition of patterns in medical or anatomical images
- 2201/031 . . . of internal organs
- 2201/032 . . . of protuberances, polyps nodules, etc.
- 2201/033 . . . of skeletal patterns
- 2201/034 . . . of medical instruments
- 2201/04 . . Recognition of patterns in DNA microarrays
- 2201/05 . . Recognition of patterns representing particular kinds of hidden objects, e.g. weapons, explosives, drugs
- 2201/06 . . Recognition of objects for industrial automation
- 2201/07 . . Target detection
- 2201/08 . . Detecting or categorising vehicles
- 2201/09 . . Recognition of logos
- 2201/10 . . Recognition assisted with metadata
- 2201/11 . . Technique with transformation invariance effect
- 2201/12 . . Acquisition of 3D measurements of objects
- 2201/121 . . . using special illumination
- 2201/122 . . . Computational image acquisition in electron microscopy
- 2201/13 . . Type of disclosure document
- 2201/131 . . . Book

## G06V

2201/132	.	.	Book chapter
2201/133	.	.	Survey article
2201/134	.	.	Technical report or standard
2201/135	.	.	Master, PhD or other thesis
2201/136	.	.	Tutorial