## Sample questions for Computer Vision

### True (T) or False (F):

- 1. Image registration consists of computing the geometric transformation between two data sets T
- 2. Good interest point detectors should detect most of the inliers' set of points T
- 3. In RS, the sensed image is transformed over the reference one according to a mapping model T
- 4. CBIR systems support search by either an example or a sketch or both of them together with text search
- 5. Local feature detection means extracting feature vector descriptor surrounding each interest point F
- 6. Nearest neighbor and linear or cubic interpolation are examples of feature extraction methods F
- 7. Outliers represent the true matches between two sets of detected points F
- 8. The similarity check between two feature descriptors can be done using Manhattan distance as a metric
- 9. Control points is another name for interest keypoints T
- 10. When both Eigen values are small and E is almost constant in all directions, the point represents an edge F
- 11. Satellite imagery includes panchromatic and multispectral images | T
- 12. Image transformation means removing some features or components of the image F
- 13. SIFT Algorithm is robust against illumination changes but not against noise
- 14. Haar Wavelets decomposition can be used to extract texture feature from images
- 15. NNS algorithm is used to match two key-point descriptors T
- 16. Image fusion is required for obtaining good image registration F
- 17. Multimodal registration includes overlaying images taken from different view points F
- 18. Human perception is one problem of text-based image and video retrieval T
- 19. Aircraft and satellites are major platforms for the sensors T
- 20. The use of simple features like color, shape or texture is usually enough for good images matching

#### **Important topics:**

- 1. Aperture problem
- 2. Gradient vector & magnitude
- 3. Computer vision applications
- 4. Global and local features
- 5. CBIR and Text-based image retrieval
- 6. Convolution and Correlation
- 7. Feature detection and description
- 8. Optical and radar images
- 9. Interest point detector.
- 10. Eigen values and Eigen vectors
- 11. Image registration
- 12. Image fusion
- 13. Remote sensing
- 14. SIFT and Harris detectors
- 15. Precision and Recall

## Matching:

1	OpenCV	A	is the overlaying two or more images of the same scene taken at different times
2	Active sensing	В	is used to build an automatic extraction of features from images
3	Image Fusion	С	smooth function that has infinite number of derivatives
4	CBIR	D	emitted and reflected radiation is detected and measured
5	Passive sensing	E	is the problem of finding a related meaning between high & low level image features
6	Image matching	F	should be robust against noise and illumination changes
7	Panchromatic	G	a library of programming functions mainly aimed at real-time computer vision
8	Gaussian Filter	Н	the acquisition of information about an object without physical contact
9	Multi-temporal registration	I	a high resolution grayscale image
10	Semantic gap	J	finding correspondence between descriptors in two views
11	Remote sensing	K	sun's energy that is reflected as thermal infrared wavelengths
12	Interest point detectors	L	putting together information coming from different sources / data

# Some MCQ will be sent to you later

- 1 G 2 D 3 L 4 B 5 K 6 J 7 I 8 C 9 A 10 E 11 H 12 F