Computer Vision

About the course:

The goal of this course is to introduce students to computer vision, starting from basics and then turning to more modern deep learning models.

Course contents:

1. The three R's of computer vision
2. Geometry of image formation
3. Two view geometry
4. Planar scenes and homography
5. Interest point detection
6. Robust correspondence estimation
7. Edge detection
8. Image filtering
9. Hough transform
10. 2D transformations
11. Camera calibration
12. Calibrated 3D reconstruction
13. Stereo rectification
14. Images as vectors
15. Bag of words
16. Constellations of parts
17. Face detection
18. Deep learning: Design and learning
19. Image segmentation
20. Feature tracking & motion layers
21. Example based methods in computer vision
22. Image based rendering