

TUTORIAL
OBJECT AND SCENE RECOGNITION, A MACHINE LEARNING VIEW.

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In the last years we have witnessed the first successful attempts to cross the uncanny valley of visual scene understanding. The development of more robust and faster feature and region detectors has facilitated the application of machine learning techniques to the computer vision arena. In effect, the successful development of computer vision algorithms based on techniques borrowed from the area of machine learning, such as Boosting and Probabilistic Graphical Models, has opened a new promising paradigm to build robust computer based seeing machines. The marriage among computer vision and machine learning is at the core of this tutorial. In particular, we will review some of the most relevant advances in the area of object recognition and scene understanding, discussing theoretical aspects and relevant applications. A special focus of the tutorial will be the application of this technology in the area of mobile robotics.