Conferenza

Incremental Learning for Robust Place Recognition in Dynamic Environments

Dott.ssa Barbara Caputo

Institut de Neurosciences Cognitives de la Mediterranée (INCM)
CNRS et Université de Aix-Marseille II, Marseille - France

Vision\--based place recognition is a desirable feature for an autonomous mobile system. In order to work in realistic scenarios, a visual recognition algorithm should have two key properties: robustness and adaptability.

This talk presents a discriminative incremental learning approach to place recognition, able to address these two challenges. We use a recently introduced version of the fixed\--partition incremental SVM, which allows to control the memory requirements as the system updates its internal representation.

At the same time, it preserves the recognition performance of the batch algorithm and runs online. In order to assess the method, we acquired a database capturing the intrinsic variability of places over time.
Extensive experiments show the power and the potential of the approach.