Experiences using clustering and generizations for knowledge discovery in melanomas domain

Abstract

One of the main goals in prevention of cutaneous melanoma is early diagnosis and surgical excision. Dermatologists work in order to define the different skin lesion types based on dermatoscopic features to improve early detection. We propose a method called SOMEX with the aim of helping experts to improve the characterization of dermatoscopic melanoma types. SOMEX combines clustering and generalization to perform knowledge discovery. First, SOMEX uses Self-Organizing Maps to identify groups of similar melanoma. Second, SOMEX builds general descriptions of clusters applying the anti-unification concept. These descriptions can be interpreted as explanations of groups of melanomas. Experiments prove that explanations are very useful for experts to reconsider the characterization of melanoma classes.