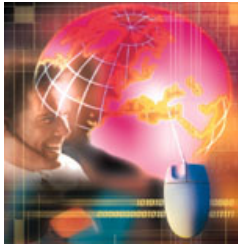


AMBIENT INTELLIGENCE LAB

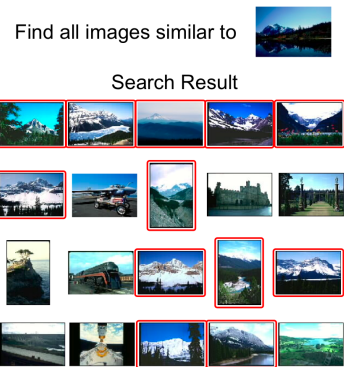


The mission of the Ambient Intelligence (Aml) Lab is to become a leading institution in the **Sardegna DistrICT** for the development and testing of qualifying technologies aimed at building intelligent environments, like artificial vision systems, intelligent systems, biometric and multimedia technologies, video surveillance and RFID.

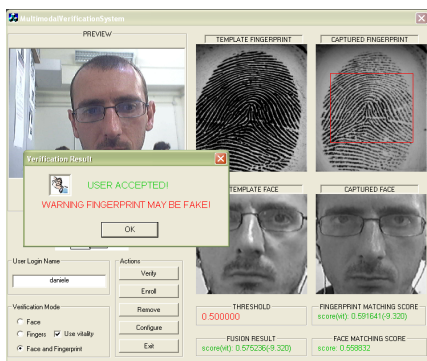
The activities of the Aml Lab are focused on the development of image recognition, artificial vision and multimedia content management systems, applied to ambient and computer security.

Ambient Intelligence for Multimedia Content Access and Management

The access and management of repositories of multimedia objects can be approached using the "Ambient Intelligence" paradigm, as the methodologies, and the techniques used in different application domains can be also applied to multimedia objects. The objective is to ease the search for multimedia content for different categories of users. In particular, the techniques developed within the "Ambient Intelligence" domain have a direct influence in the Cultural Resources Management (CRM) domain. The activities of the Aml Lab in the area of Multimedia Content Access and Management are the following: a) automatic content classification, and indexing, and content-based retrieval; b) development of interactive tools to allow the customisation of multimedia content search; c) integration of advanced content-based retrieval systems with multimedia repositories based on the framework of digital libraries.

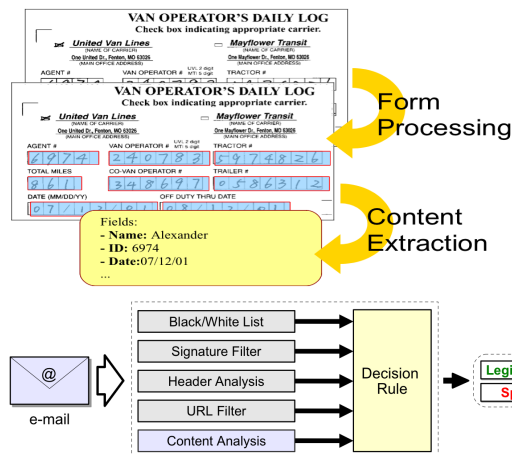


Ambient Intelligence for Environment and Computer Security



The growing need of security in everyday life calls for specific services for both individuals and the community, like the surveillance of urban areas and public buildings (stadiums, embassies, consulates, etc.). This gives raise to the challenge of building intelligent systems for automatic environment monitoring. At the same time there is a growing need of equipping private buildings and houses with technologies aimed at making life of elderly and disabled people easier and safer. In this context the Aml Lab aims to develop biometric technologies capable to recognize the personal identity of individuals based on face and fingerprint recognition, and to promote technology transfer. Biometric technologies can be exploited to improve ambient security

combined with video surveillance systems through the interaction between sensors installed in different and contiguous places, and to allow people to customize an intelligent environment according to their needs.



The Aml Lab also investigates topics of common interest for the different qualifying technologies related to "Ambient Intelligence", like document digitalization and data and communication networks security. In this context, research activities are carried out aimed at the application of Computer Vision, Pattern Recognition and Text Categorization techniques to paper document digitalization, classification and filtering of multimedia documents (in particular, spam filtering), intrusion detection in computer networks, vulnerability assessment of biometric systems and models and algorithms for their protection.