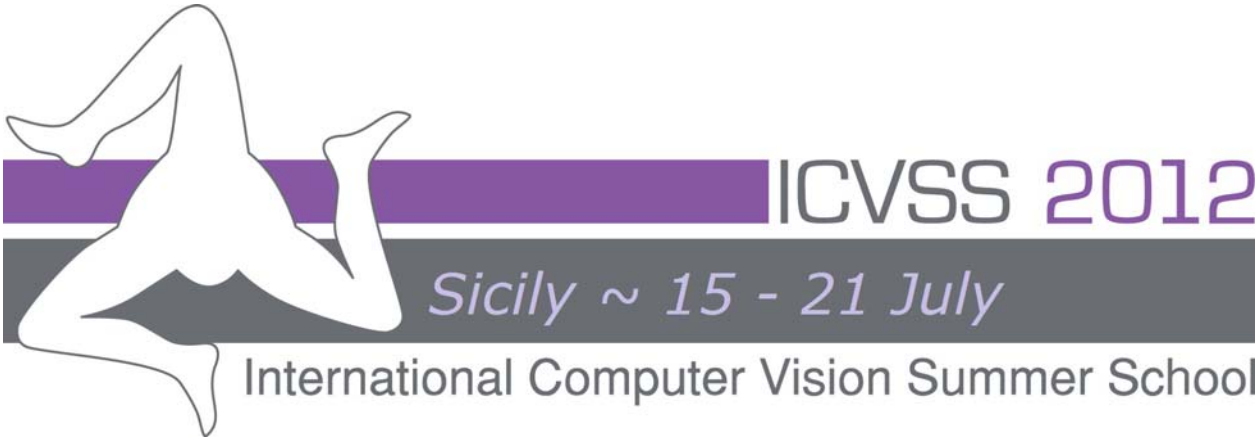

About 3D face recognition…

Alberto del Bimbo
Università degli Studi di Firenze, Italy

Abstract

Biometrics measure unique behavioural characteristics and unique physical features are used for recognition or authenticate user's identity. While biometric technologies are being widely used in forensics, recent advancements in biometric sensors and matching algorithms have led to the deployment of biometric authentication in a large number of civilian and government applications. In this framework, automatic human target identification has been an active research area in pattern recognition and computer vision, since '90s with major emphasis on detection and matching of human faces in 2D still images and videos. 2D face recognition suffers anyway from several problems: illumination conditions; acquisition pose; facial expressions; occlusions; aging…. But the increasing availability of 3D face scans has raised the interest in 3D face recognition to improve the effectiveness of face recognition systems. The full 3D geometry of the face can be used instead of just a 2D representation of how the light is reflected from the face surface. In this tutorial we will provide an overview of 3D face recognition and discuss relationships with advanced surveillance applications.

Keywords: 3D face scan, 3D face recognition, 3D databases, 2D faces