

基于 Android 的人脸识别系统的设计与实现

摘要

人脸识别技术世界范围内较为超前的热点技术，它利用人脸特征信息进行身份识别。因此人脸识别已经成为最具影响力的研究热点和研究方向，可以从技术层次来打破信息识别壁垒。例如，在电商领域可以对人脸识别技术进行升级以对客户的信息进行更好地登记，公安机关可以有效的通过人脸描述和解释系统来追踪犯罪分子。就人脸描述和解释技术的发展和衍生历程而言，其首先在计算机端运用并取得了较好效果。然而随着智能手机的广泛应用，也需要在移动端对人脸描述和解释系统的相关技术提出与时代匹配的新要求。

本次毕业设计的是意图设计并打造一个基于安卓领域的人脸信息描述和解释系统，其中关键功能是识别面部、性别和年龄的判定。通过对安卓手机与服务器之间的链接方式进行研判，考虑此系统使用计算机和信息数据为开源的人脸识别技术添砖加瓦并提高识别的精度和深度库中的功能来描述和解释图像处理机制，然后使用基于 TCP/IP 的 socket 通信手段将描述和解释成果传输到安卓设备，在此技术上使用 Visual Studio 2013 作为开发工具，并使用夜神模拟器来对本次设计开发的程序进行仿真检验。

关键词：人脸信息分析；Android 平台；OpenCV 开源计算机视觉库；Socket 通信

ABSTRACT

Face recognition technology is a leading hot technology in the world. It uses face feature information for identity recognition. Therefore, face recognition has become the most intense and widely used research direction in the bio pattern recognition platform. For example, in the field of e-commerce, face recognition technology can be upgraded to better register customers' information, and public security organs can effectively track criminals through face description and interpretation system. As far as the development and derivation of face description and interpretation technology are concerned, it has been applied in the computer and achieved good results. However, with the wide application of smart phones, it is also necessary to put forward new requirements for the face description and interpretation system in the mobile end.

The purpose of this graduation project is to design and build a face information description and interpretation system based on the Android field. The key function is to identify the face, gender and age. Through the research and judgment of the link between Android mobile phone and server, this system uses web page and pattern recognition technology to explain the processing method of face information. In the server-side system, we can use the functions of OpenCV open source computer vision library to describe and explain the image processing mechanism, and then use the socket communication method based on TCP / IP to transfer the description and interpretation results to Android devices. In this technology, we use Visual Studio 2013 as the development tool, and use the night God simulator to simulate and test the program designed and developed this time.

Keywords:Face information analysis,Android platform, OpenCV(open source computer vision library),socket communication

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