

Biometric authorization of Internet services users – Offline demo

Offline demo of the project IT “A system for biometric authentication of Internet users based on the fusion of facial and palmprint features” comes with pre-generated database of registered users and database of test samples. This enables the system testing without the need for Internet connection and equipment for the acquisition of face and palm images.

This demo consists of two programs

- Administrator program
- Test program

After the installation, both programs are available through Windows 'start' menu in the 'FER\BioVerifikacija-OfflineDemo' program group.

Administrator program

The administrator program enables browsing and changing the registered users database of the verification system. Detailed information about this program can be found in the seminar paper of Želimir Končar, which is available through the project's Web page.

Test program

The test program enables loading the samples from the test sample database and their verification as users from the registered user database (an ID is given to each of the registered users).

By starting the program, the main window shown on Figure 1 opens. In it, the two main buttons can be noticed, 'Učitaj uzorak' (Load sample) and 'Verificiraj' (Verify).

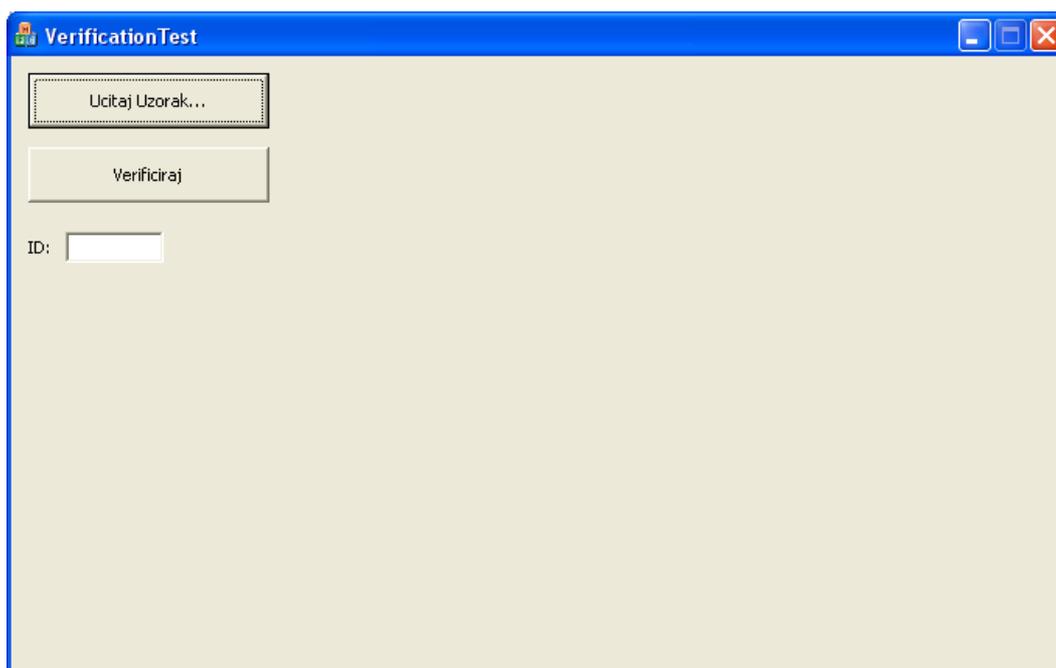


Figure 1: Main window of the test program

In order to do the verification, first a sample from the test sample database has to be loaded (in this demo, registered user database can't be used as the test database, nor can it be modified without the image acquisition equipment. It is used only for visual representation of face and hand samples of the registered users). That can be done by clicking the 'Ucitaj uzorak' button, which makes a standard file opening window appear (Figure 2a).

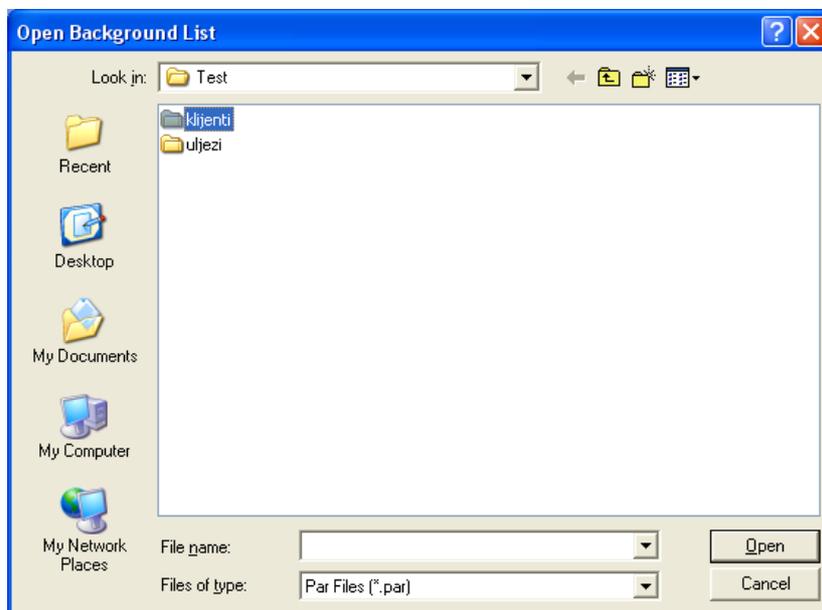


Figure 2a: Test sample selection window – selection of client or impostor folder

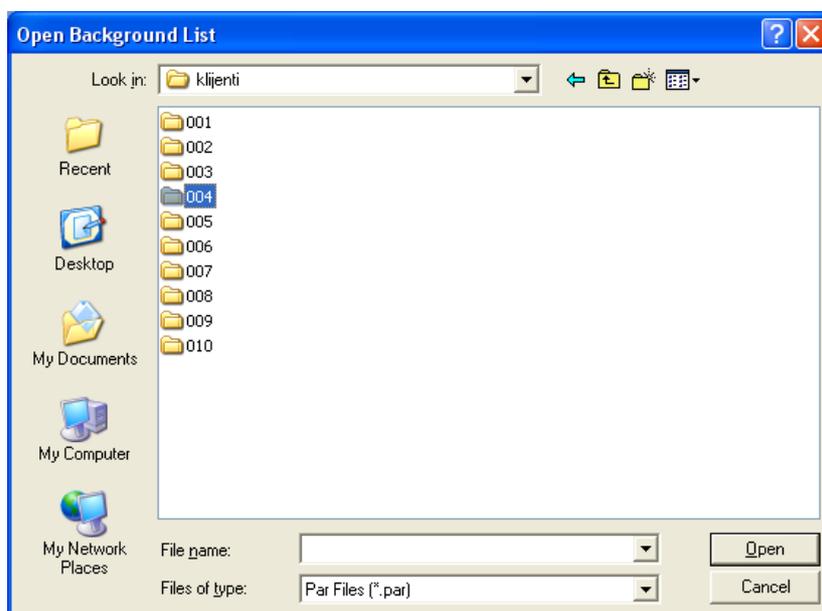


Figure 2a: Test sample selection window – selection of a specific person folder

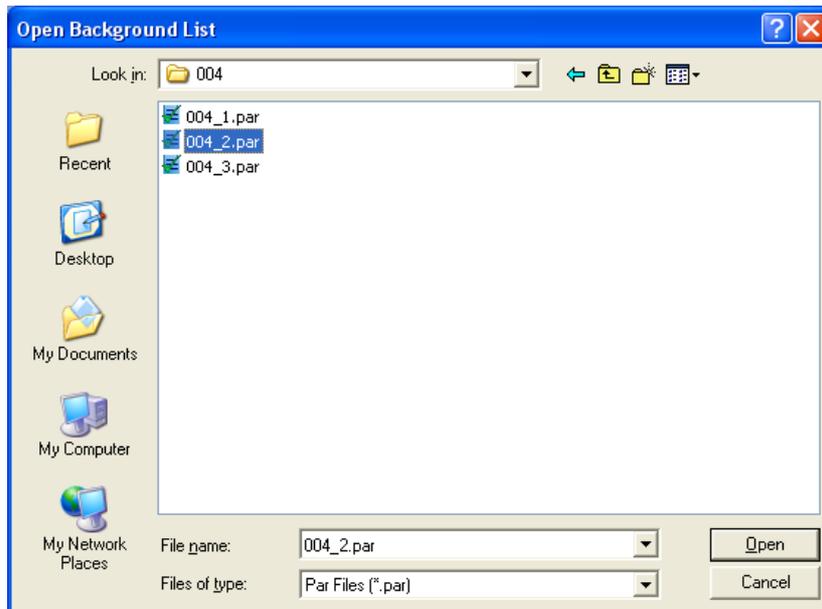


Figure 2a: Test sample selection window – selection of a specific sample

First, it is necessary to select client or impostor folder (Figure 2a), then the folder of a specific person (Figure 2b), and finally, a file containing a specific sample (Figure 3c). Then, clicking the 'Open' button loads the selected sample and corresponding face and palm images are shown in the main program window, as demonstrated in the Figure 3.

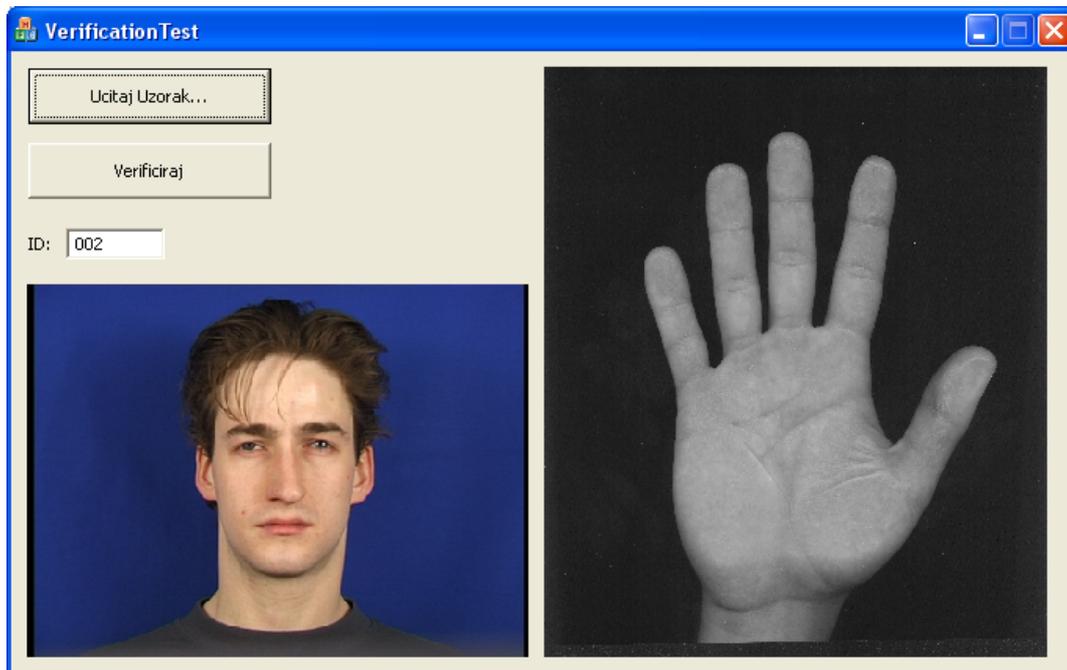


Figure 3: Main window of the test program after a sample has been loaded

Text box in the main window marked 'ID' enables entering the ID under which the unknown person will try to 'enter'. IDs of users registered in the registered user database are '001', '002', ..., '010'. When loading a sample belonging to a registered user, the system automatically offers the correct ID, but it is also possible to change it. In case the loaded sample is from the impostor folder, the system also offers some ID. Clicking the 'Verificiraj' button executes the process of biometric verification that can have two possible outcomes:

- The system determines that the person trying to access it is indeed registered in the user database under the specified ID. In this case the verification is successful and as a reply, a window shown in Figure 4 (with the green light on) appears.
- The system determines that the person trying to access it is not registered in the user database under the specified ID (therefore, he/she is an impostor or user that entered a wrong ID). In this case the verification fails and as a reply, a window shown in Figure 5 (with the red light on) appears.



Figure 4: Window that appears when the verification is successful



Figure 5: Window that appears when the verification fails

In the case when a sample belonging to one of the clients was loaded and the offered ID was left (which in that case matches the ID under which that person was registered in the registered user database), the system should successfully verify that person's identity. However, it should not be possible to verify that sample under any other ID. In the case when the loaded sample belongs to one of the impostors (persons not registered in the registered user database and trying to 'enter'), the verification should fail regardless of the ID.