

Abstract

of attestation master's degree work

subject:

"Research methods for visualizing data in a network of modern household
technology"

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Actuality of work

In recent years, mobile devices become widespread and the number of applications developed for mobile platforms, starting to catch up the number of applications for desktop operating systems. As mobile devices are small, the data visualization and user interaction are fundamentally different from desktop applications. Building a user-friendly, intuitive and efficient graphical user interface is one of the most important tasks when developing applications for mobile platforms. Therefore, the investigation of methods for constructing the interface is an important issue.

The purpose of work

The aim is to study modern methods of building a graphical user interface on mobile platforms and consideration of emerging technologies in the industry.

Tasks solved in work

1. Research modern methods of building a graphical user interface on mobile platforms.
2. Research modern information architectures for mobile applications.
3. Investigation of the possibility of porting OpenCV library for mobile platforms.
4. Implementing an application for recognition of objects on the platform iOS.
5. Implementing an application for the face detection in the video stream on a platform of Android.

The achieved results

Solving the tasks put in-process, an author protects:

- The results of the application for recognition and to find objects in the scene on the iOS platform;
- The results of the application for the face detection in the video stream on the Android platform;
- solutions to eliminate problems associated with the performance and storage of large amounts of data;
- recommendations for improving the efficiency of the algorithms;
- recommendations for improving the performance of the algorithms;

Scientific novelty

Scientific novelty of the work lies in the fact that:

- identified the main methods of organizing the graphical user interface on mobile platforms;
- the allocation of core information architecture of today's mobile applications;
- develop applications for Android platform iOS and using the library OpenCV, which may serve as a basis for solving more specific and complex tasks;
- describes the recommendations for improving the performance of computer vision algorithms for mobile platforms.

Practical value

The practical value of the work lies in the fact that:

- performed integration libraries for computer vision on mobile platforms iOS and Android;
- develop an application that can serve as the basic solutions for the development of more sophisticated mobile applications.

Conclusions

- Review of modern methods of data visualization on mobile platforms.
- An overview of the key technologies of displaying and construction of interface architecture of a modern mobile applications.

- Review of the promising technology of visualization and user interaction with the application - computer vision.
- Consider a computer vision library OpenCV and its integration with modern mobile platforms, such as iOS and Android.
- Developed an application for recognition of objects and finding them on the stage on iOS platform.
- Developed an application for face detection in the video stream coming from the device camera on Android platform.

The work contains 172 p., 56 fig., 10 sources.

Keywords: DATA VISUALIZATION, COMPUTER VISION, OPENCV, IPHONE, ANDROID.