PhotoPixJ 2.0 – A JAVA Digital Image Processing Environment

ARNALDO DE ALBUQUERQUE ARAUJO
BERNARDO MOREIRA DE FARIA
LETÍCIA SANTOS NETO

NPDI/DCC/UFMG – Dept. de Ciência da Computação, Caixa Postal 702, 31270-010 Belo Horizonte, MG, Brasil 
{arnaldo, bmf, lele}@dcc.ufmg.br

Abstract. This work describes PhotoPixJ 2.0, a system for integration and execution of Digital Image Processing algorithms. PhotoPixJ 2.0 is the migration of the Java 1.0 based PhotoPixJ to Java 2 platform. It provides a multi-platform easy to use framework to implement image types, processing and formats. The system presents the application and the applet versions. The use of PhotoPixJ 2.0 enables a great productivity gain for DIP algorithms developers, in the implementation of not only algorithms but also non-essential functionality.

1 Introduction

The diversity of hardware platforms and API’s usually prevents DIP system designers from concentrating only in the algorithms implementation. The lack of portability is a usual source of overwork during programming, as well.

Java language programming [1,2,3], however, offers a platform independent hardware implementation, where programs are compiled into an architecture neutral format, the bytecodes, and can be executed wherever there is an implementation of the Java Virtual Machine.

2 PhotoPixJ 2.0

This work presents PhotoPixJ 2.0, the Java 2 version of PhotoPixJ [4], a hardware independent platform system for execution of DIP algorithms. PhotoPixJ was first written in Java 1.0, the version existing at that time. When Java 2 was introduced, several changes were announced in the Java architecture, such as the new event model and the deprecation (substitution) of several classes into others. To keep on using PhotoPixJ as a tool of software implementation, it was necessary to convert it to the current Java version.

PhotoPixJ 2.0 offers a set of classes that furnishes an easy implementation and integration of new algorithms, besides other function such as basic GUI’s - graphic user interfaces - to standardize algorithms graphic structure and basic help entries.

From the previously developed version [4] the analysis phase has been fully reused and minor modifications have been done to the object-oriented project, mainly to adapt it to the new Java 2 platform event model. PhotoPixJ 2.0 can be tried and downloaded at the following Internet address:

http://www.npdi.dcc.ufmg.br/membros/bmf/index.htm

3 Conclusion

The reuse of code and a higher abstraction level of the classes that need to be implemented in order to execute a new algorithm make PhotoPixJ 2.0 an ideal framework of rapid DIP algorithm development.

References