

CVIPtools Software Organization

Overview

CVIPtools for Windows is made of several layers; each layer has its own distinct purpose. Lower layers process the image and deal with the algorithms; middle layers provide transparent access to the lower algorithm layers and offer data security to the higher layers. The higher layer interacts with the user and sends commands to execute the operations.

The Four Layers

CVIPtools for Windows is implemented in four layers: the algorithms code layer, the COM interface layer, the CvipOp layer, and the Graphical User Interface (GUI; see Figure C.1). The algorithms code layer, which is primarily based on previous versions of CVIPtools, consists of all image and data processing procedures and functions, and is written in standard C. The COM layer implements the COM (Common Object Module) interface standard for each higher level CVIPtools function, primarily the Toolbox functions with a few Toolkit functions (see Appendix D). The COM interface layer is written in C++ and links the CVIPtools C functions to the GUI through the CvipOp Class. The CvipOp layer encapsulates the COM interface functions and provides an Object Oriented Architecture (OOA) for the CVIPtools functions, and the class CvipOp helps to consolidate data safety and memory management. The GUI layer, written in C#, implements the image queue and manages user input and resultant output.

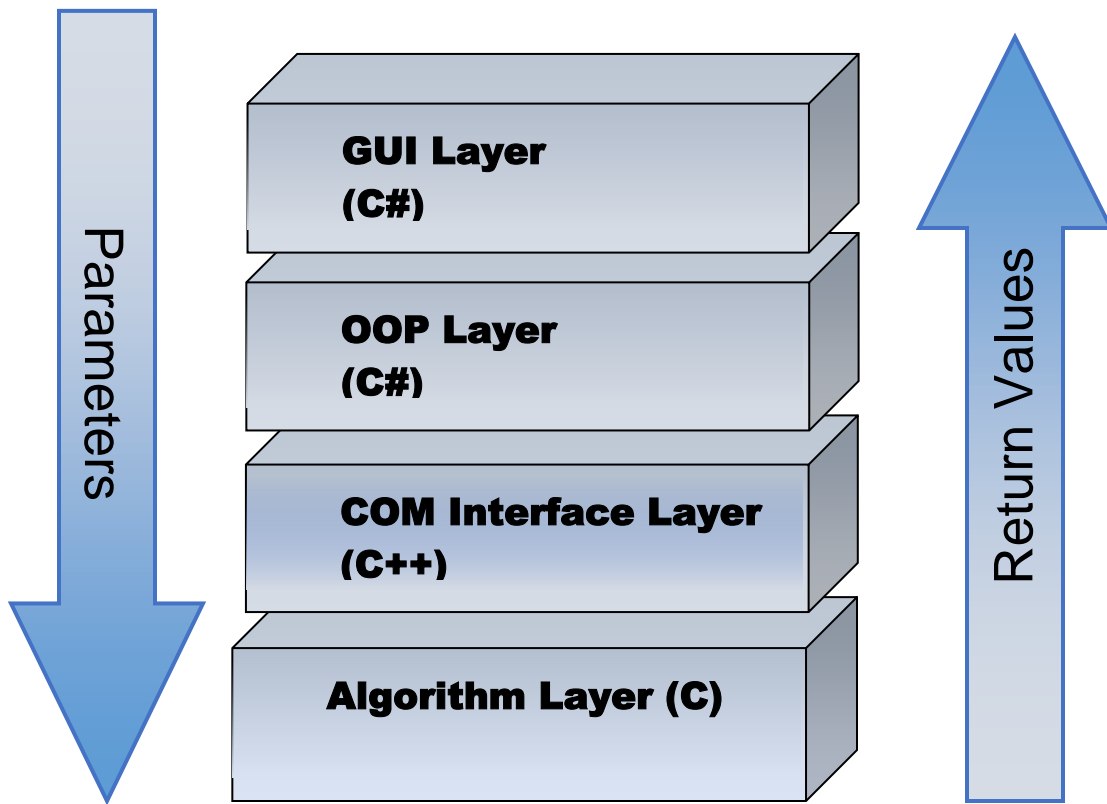


Figure1. CVIPtools Application Infrastructure

File and Directory Organization

After CVIPtools installation from the CD, the file and directory organization is as follows. The primary directory at the top level is referred to as *\$CVIPtoolsHOME* and is typically called *CVIPtools* or *CVIPtools5.x*, etc. Under this directory are the following directories:

CVIPATAT contains source code for the CVIP Algorithm Test and Analysis Tool

CVIPC contains the C source code for the CVIPtools functions, only with Source installation

CVIPCOM contains the C++ COM code and all other associated files including links to the C source code and header files, only with Source installation

CVIPFEPC contains source code for the CVIP Feature Extraction and Pattern Classification tool

CVIPGUI contains the code for the GUI , only with Source installation

CVIPlab contains the entire CVIPlab source C/C++ code, and all other associated files including links to the libraries and header files (see chapter 11)

HELP contains the CVIPtools Help executable, *CVIPtoolsHelp.CHM*, compiled with Visual CHM using html files

include contains the header files for CVIPtools C source code

lib contains CVIPtools C/C++ source code libraries for use with CVIPlab

images contains images from the figures in the book

bin contains the executable to run CVIPtools, *CVIPtools.exe*, the library *cviptools.dll* and other associated files and directories used by CVIPtools, including: 1) codebook, 2) compression, 3) feature, 4) mesh, 5) pseudocolor, 6) remap. Also contains the executables for CVIP-ATAT and CVIP-FEPC.