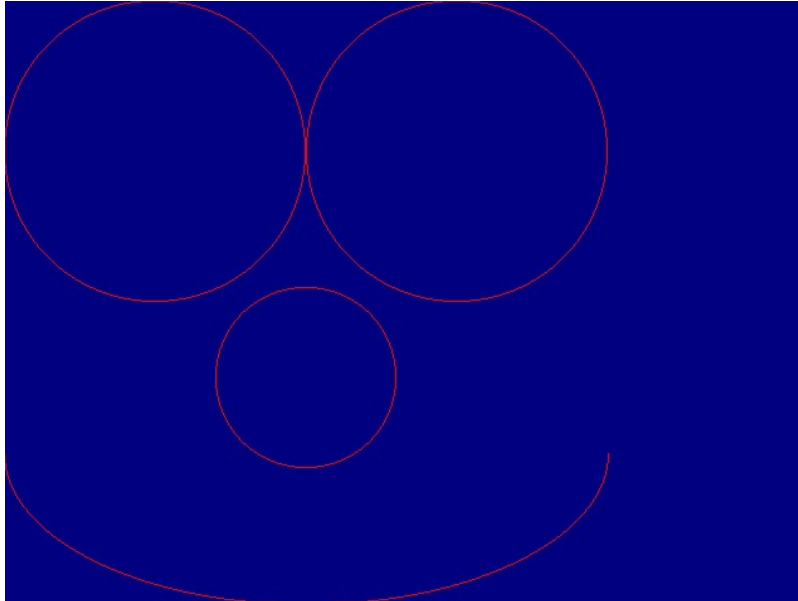


Image Overlays with NI Vision

Author: Bob Sherbert

Keywords: NI Vision, Image Overlay, LabVIEW



This image was generated in order to demonstrate the functionality of the NI vision overlay functions. The source was a plain blue image. The result is, as you can see, a giant smiley face. NI Vision functions can be used to overlay lines, arcs, points, text, and bitmaps in different combinations and arrangements onto any source image which can be opened in LabVIEW. These functions can be useful for real-time representation of complex data sets.

- [Motivation and Audience](#)
- [Parts List and Sources](#)
- [Programming](#)
- [Final Words](#)

Motivation and Audience

When working with any data in real time, it is usually useful to be able to interpret and examine it in real time. When such data is visual and mathematically intensive, it is in difficult for a user to interpret a simple numerical data dump if any more than 1 or 2 variables is present. Being able to display the data visually on top or along side of the source data is often useful. This tutorial covers methods which can be used to overlay simple shapes onto images. While it only covers an application to a single image, the techniques can easily be expanded upwards to moving video feeds, both live and recorded.

This tutorial assumes that the reader has the following skills/experience:

- Basic exposure to NI Vision tools (opening/closing files/streams)
- Exposure to LabVIEW programming

Parts List and Sources

TABLE 1: Parts required for construction

PART DESCRIPTION	VENDOR	PART	PRICE (2007)	QTY	Evaluation Available
LabVIEW 8	NI	776671-09	\$600	1	Y
NI Vision Development Module	NI	777859R-09	\$824	1	Y

Source Code

LabVIEW

Code is available in the archive [overlay.zip](#)

The overlay functions are located in the menu 'Vision and Motion -> Vision Utilities -> Overlay'.

Building the Face

The face is constructed from some simple ratios based on the image size. The horizontal and vertical midpoints of the image are calculated and used to determine where the eyes should be divided (each occupies a quarter of the image), where the nose should be centered, and where to draw the arc for the mouth (around the lower arc of the ellipse formed in the bottom half of the image.)

Final Words

Working from the samples and explanations provided here, it should be possible for the reader to utilize the NI Vision Overlay functions. A small sampling of the functions were displayed in a sample program, and should provided insight into the remaining functions. Points, Lines, and Bitmap functions all require similar inputs to the ones used in this tutorial. These functions should, on a whole, be useful for visually debugging complex data sets.

The author can be reached by [email](#)