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Computer Vision - Object Recognition

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COMPUTER VISION – OBJECT RECOGNITION

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One of the growing fields in computer science is that of Artificial Intelligence or AI. Many theories have evolved to make a computer intelligent and so far no one has succeeded. One of these methods used by the Shelley Project in the past has been to use neural networks, which is the backbone of the GNU Neural Network Visulizer (GNNV). GNNV uses a neural network to try to identify objects, like faces, in the field of view.

A different method, and the focus of this research, is to identify objects in the image. These objects could be squares, circles or even blobs. One advantage over Neural networks for this method is that as the programmer you know exactly what it knows. Instead, the problems are of the form. "How do I tell it what a circle is?" or "How do I have it determine what is noise that should be ignored?"

The goal of this project is to create a program capable of taking in an image from a digital camera and identifying the tic-tac-toe game. This is inspired from past work done for the Shelley Project which included playing tic-tac-toe (without the vision component) and the Shelley Integrated Environment (SIE). Because of the flexibility of working within the SIE, the present project will readily adapt to different board games, with minimal structural reworking.