

The aim of this thesis is to create a program which detects a grid on a paper in a fixed webcam image, converts the grid into a graph and then tracks a group of Ozobots as they traverse the grid. Earlier works with Ozobots used them to investigate Multi-Agent Pathfinding. This work is the first in exploring their detection in image data. To achieve that, I am using the OpenCV library and the Java programming language. By training my own cascade for use in a Cascade Classifier from the objdetect OpenCV module, I was able to achieve a good rate of Ozobot detection in real time. The grid detection works by detecting lines on the color transitions in the image and their subsequent grouping into lines in the grid.