

Recognising Geometric Patterns - Example 12

Peter Fletcher, 21st September 2009.

The problem

Figure 1 shows an image containing two crosses overlapping with a hexagonal tessellation.

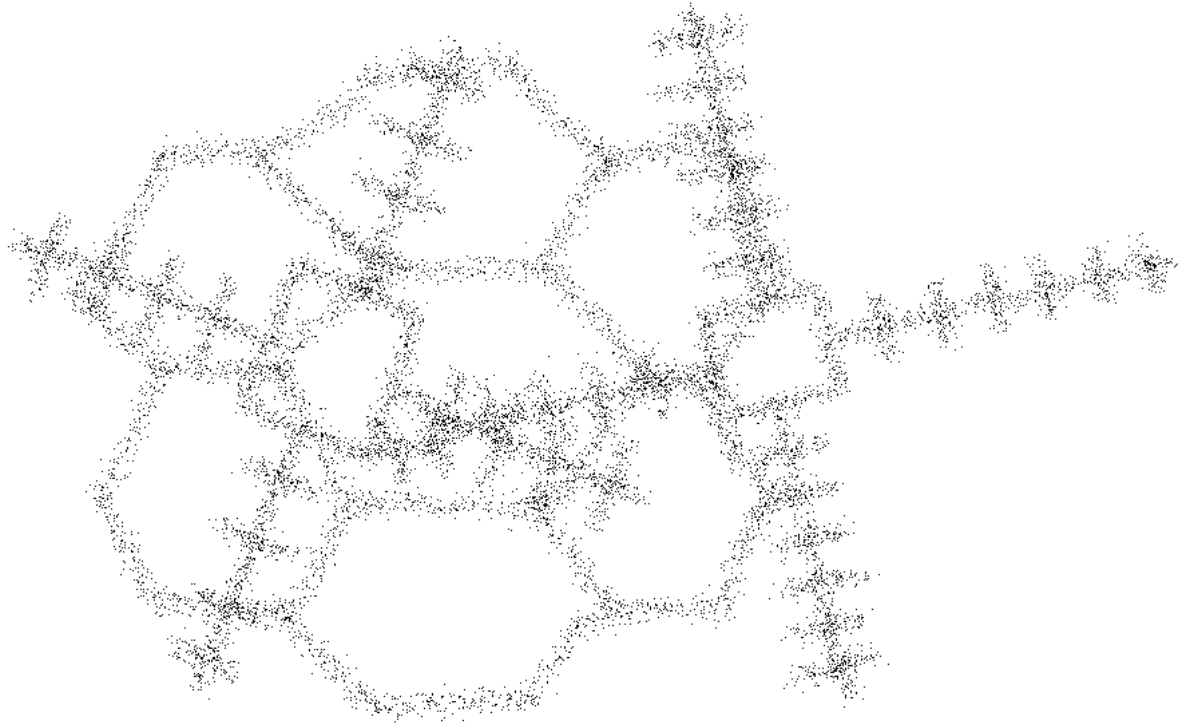


Figure 1: the original image.

The following pages show the results of the program. See example 8 for an explanation of the use of subsymbols in crosses.

The results of the program

The program successfully finds the crosses and the hexagonal tessellation.

Figure 2 shows the result of the program, with the hexagonal tessellation highlighted. The long narrow red and blue rectangles show the lines identified by the program. The black arrows mark the parts of the tessellation (these parts are lines and also 'dummy' symbols at the edge of the tessellation). The black discs indicate the connections between the parts. The large green rectangle (only partially visible) shows the bounding box of the hexagonal tessellation. The tessellation also contains subsymbols, including hexagons (shown in mauve) and others in various colours around the edge of the tessellation.

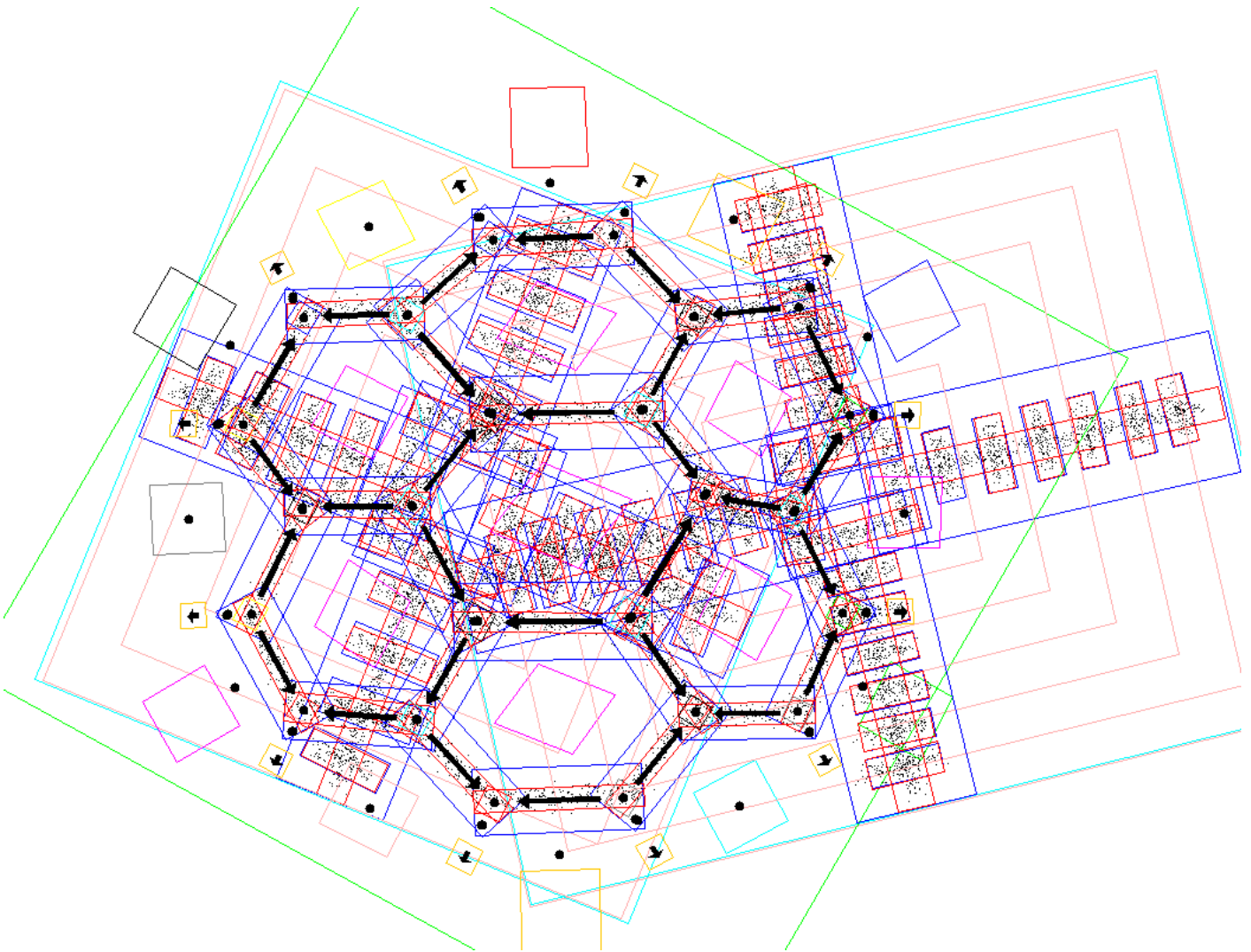


Figure 2: the hexagonal tessellation found by the program.

Figure 3 shows the same run of the program but with one cross highlighted. The bounding box of the cross is shown in pale blue. Subsymbols (each consisting of four twigs, as in example 8) are shown as concentric pink bounding boxes.

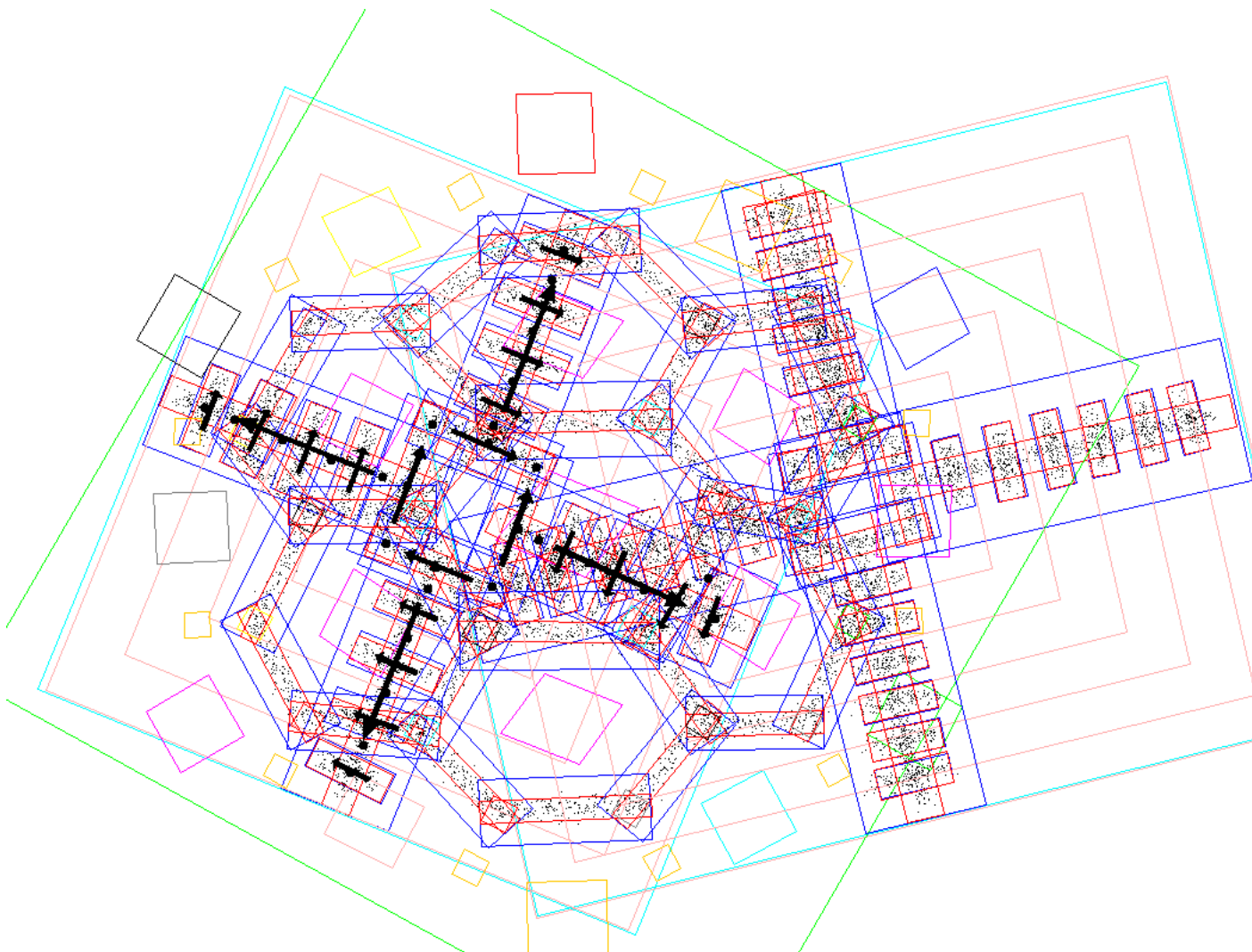


Figure 3: one cross found by the program.

Figure 4 shows the same run of the program but with the other cross highlighted.

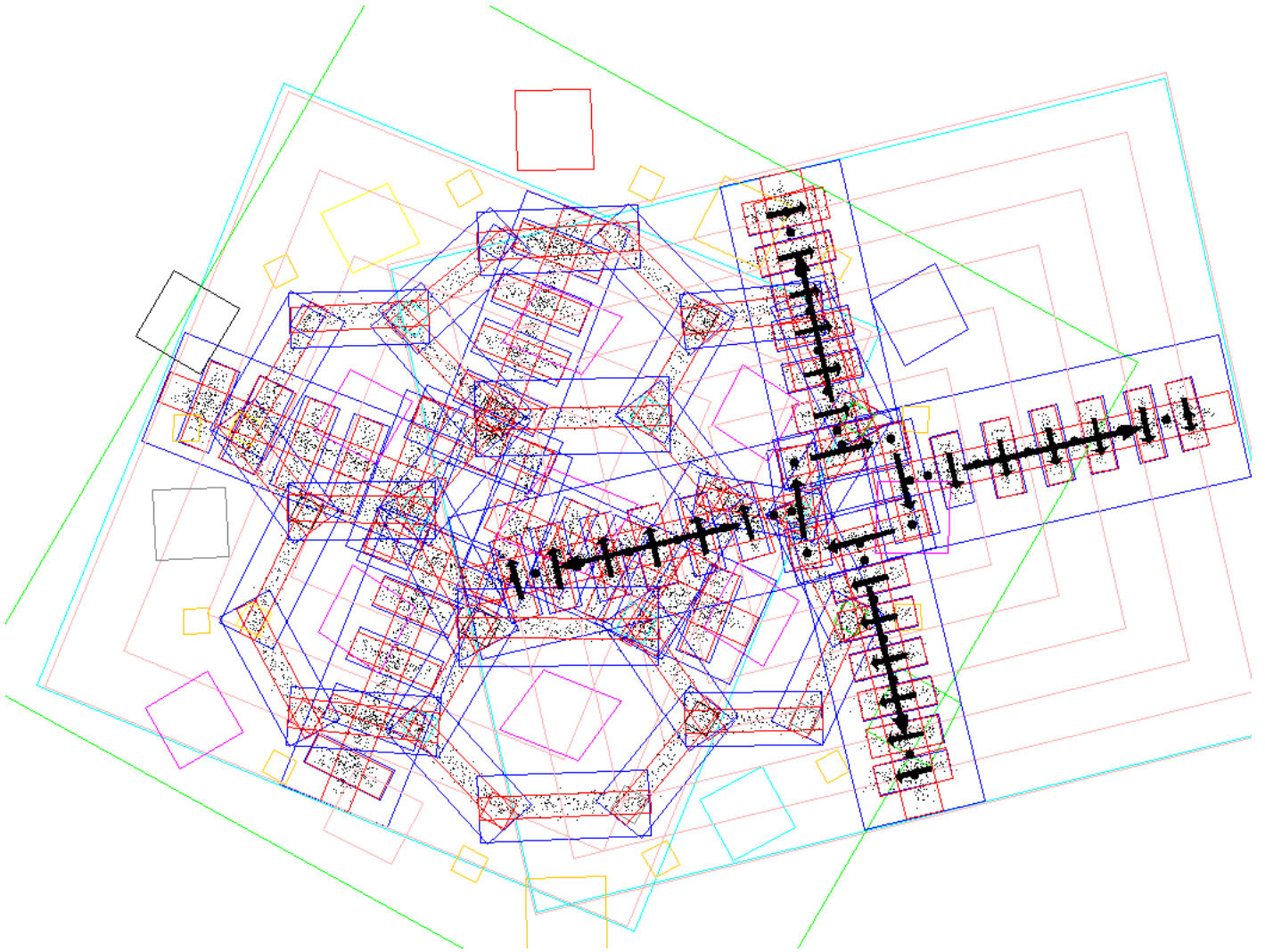


Figure 4: the other cross found by the program.