

As some problems are (NP-)hard to solve in the general case, a possible approach is to try to solve the problem on a restricted class of graphs. In the thesis, we focus on graphs induced by axis-aligned L-shapes, so-called L-graphs, and a similar class of axis-aligned L-shapes and J-shapes, referred to as  $\{L, J\}$ -graphs, with two vertices sharing an edge if and only if their respective curves intersect. We show that recognizing both L-graphs and  $\{L, J\}$ -graphs is NP-complete. The second part of the thesis focuses on other typical decision problems on L-graphs and their relatives: finding the clique number, the independence number or a 3-coloring.