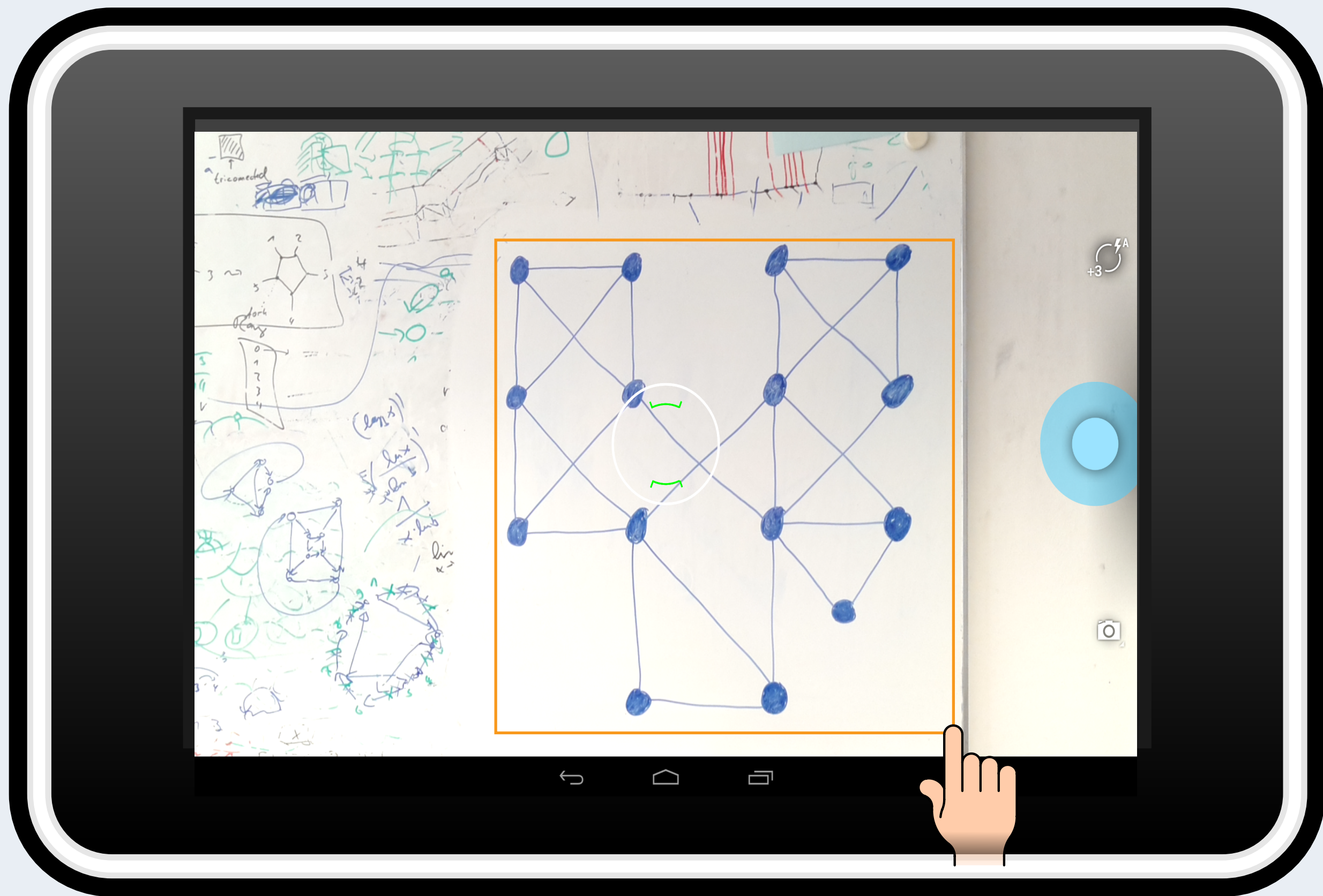


Optical Graph Recognition on a Mobile Device

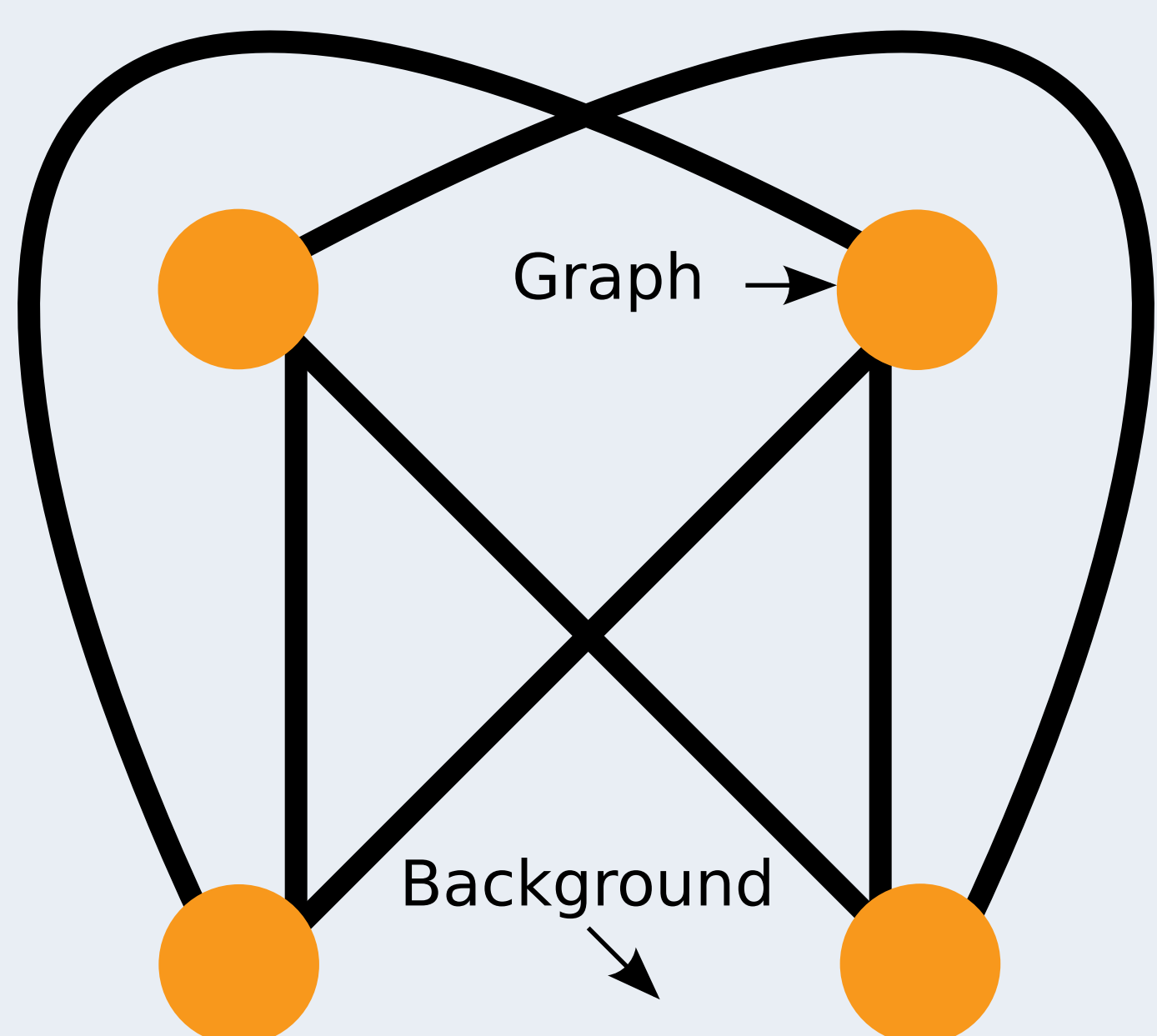
Christopher Auer, Christian Bachmaier, Franz J. Brandenburg,
Andreas Gleißner, and Josef Reislhuber

Draw a graph and take a picture



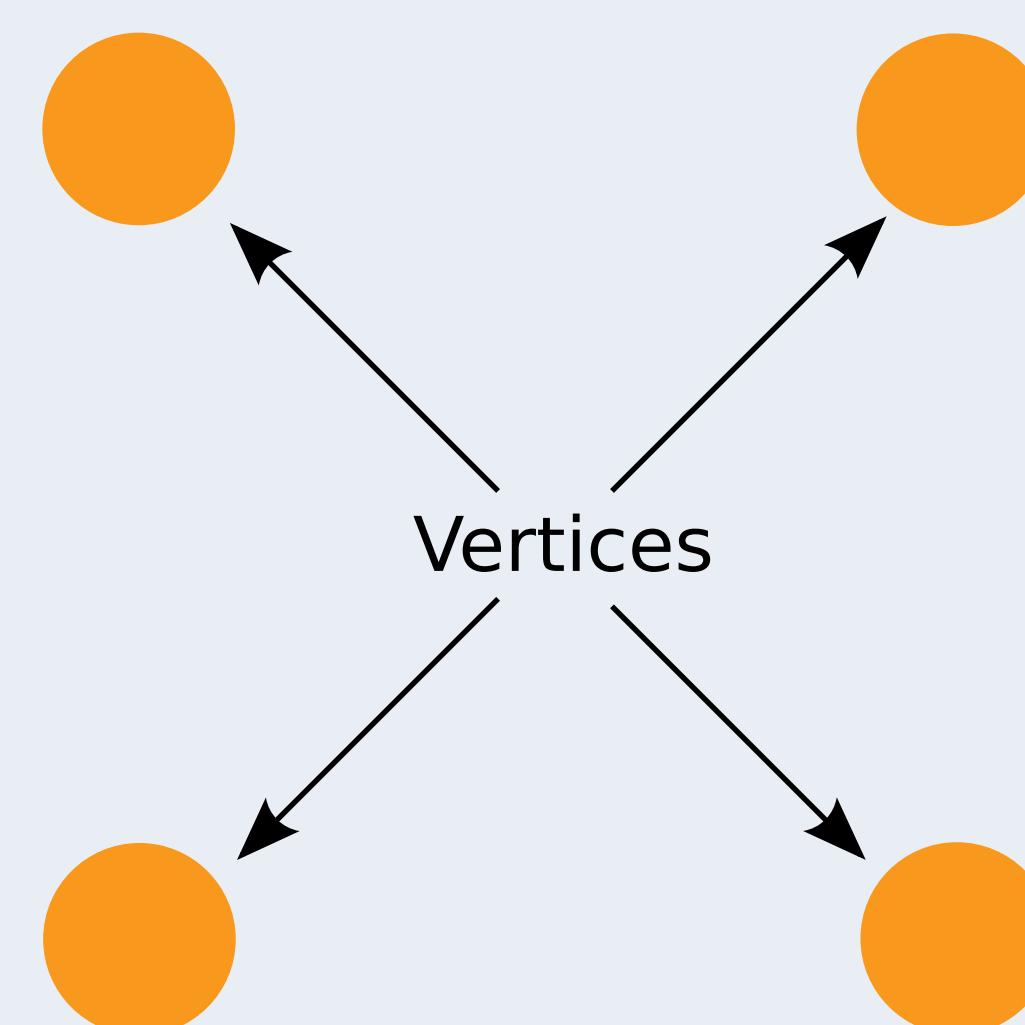
- ▶ Take a picture with the camera of a mobile device
- ▶ Select the part of the image that contains the graph with touch gestures
- ▶ Start the OGR algorithm

1. Preprocessing



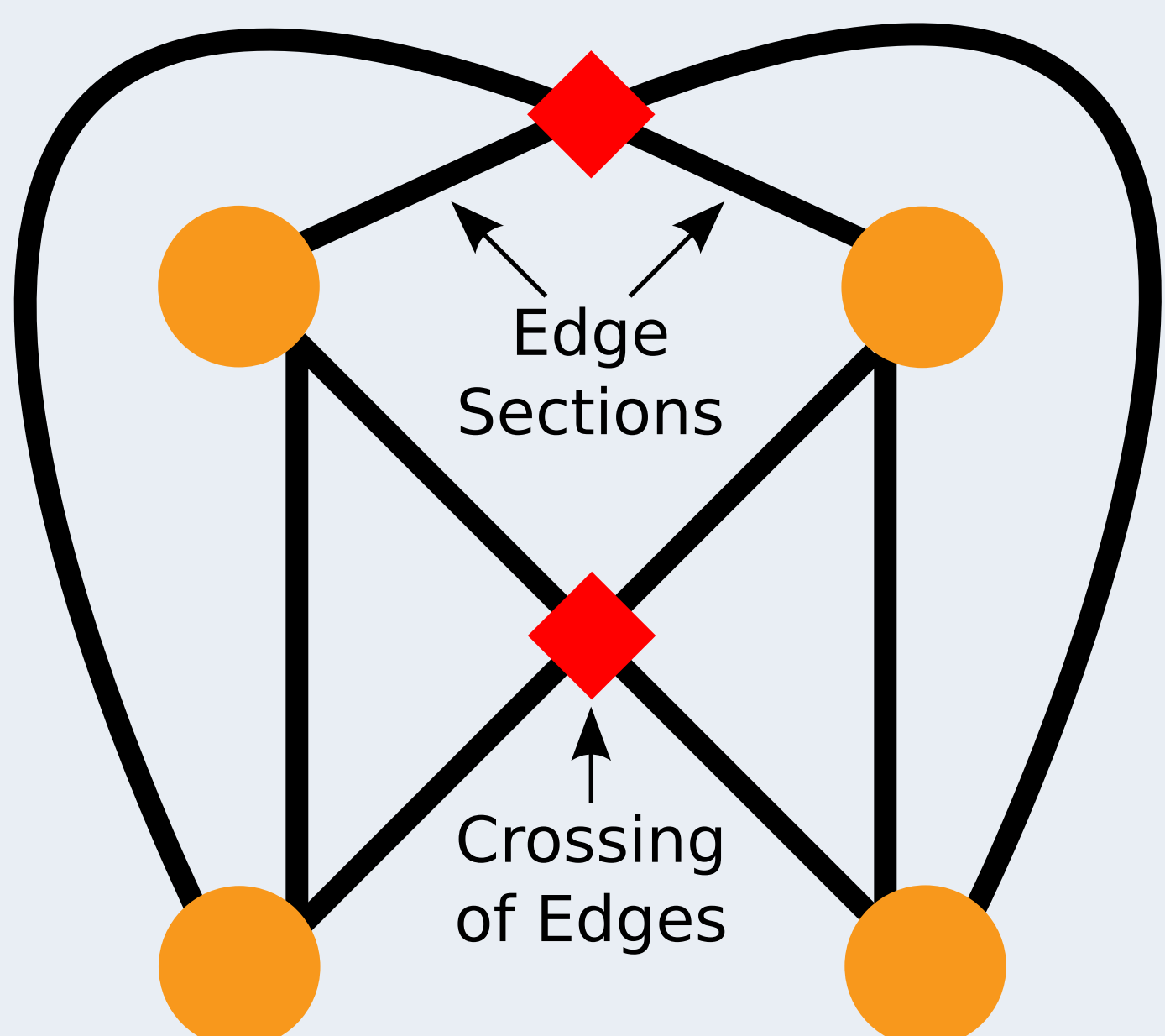
- ▶ Separate graph and background

2. Segmentation



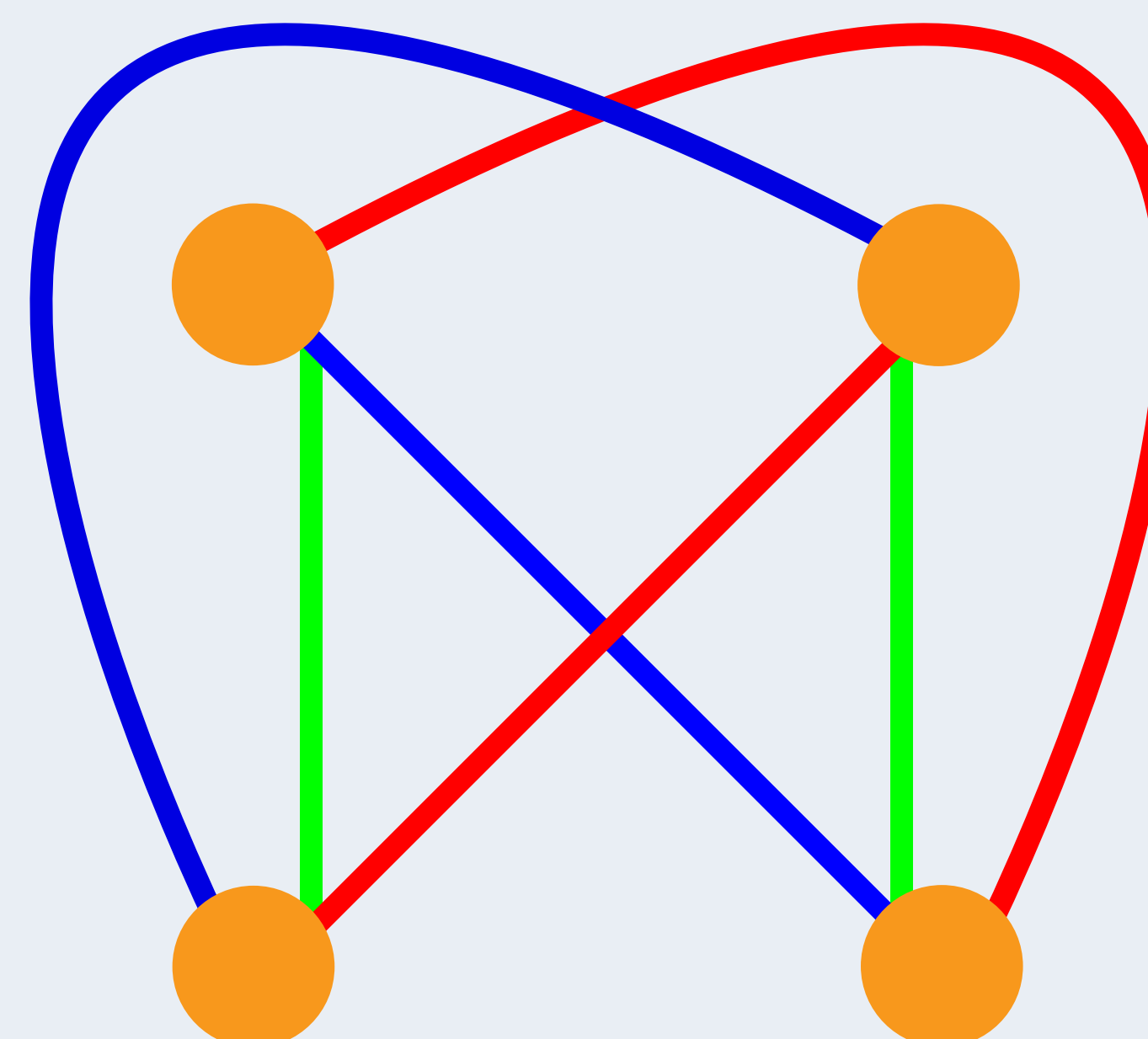
- ▶ Recognize the vertices

3. Classification



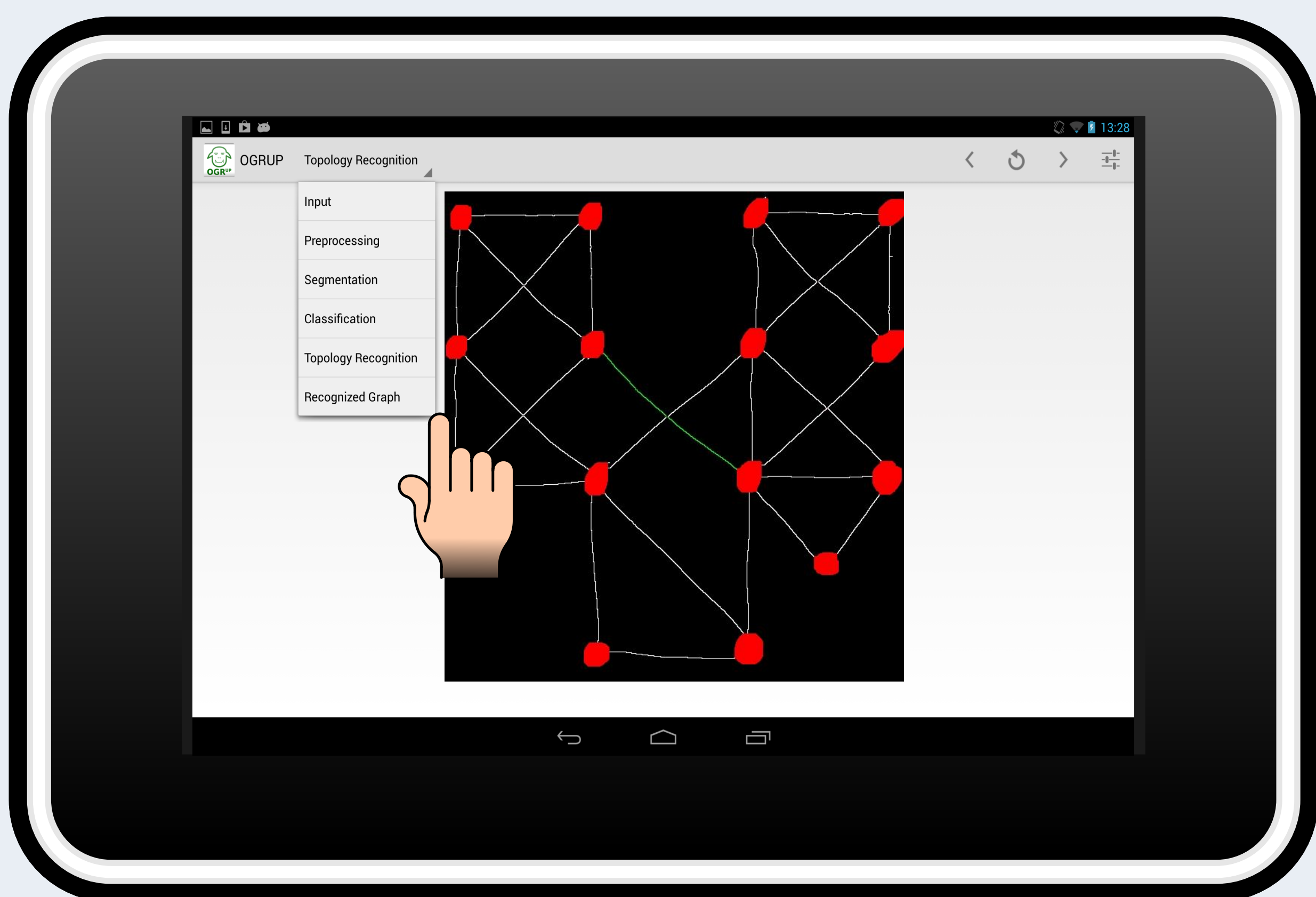
- ▶ Recognize edge sections
- ▶ Recognize crossings

4. Topology Recognition

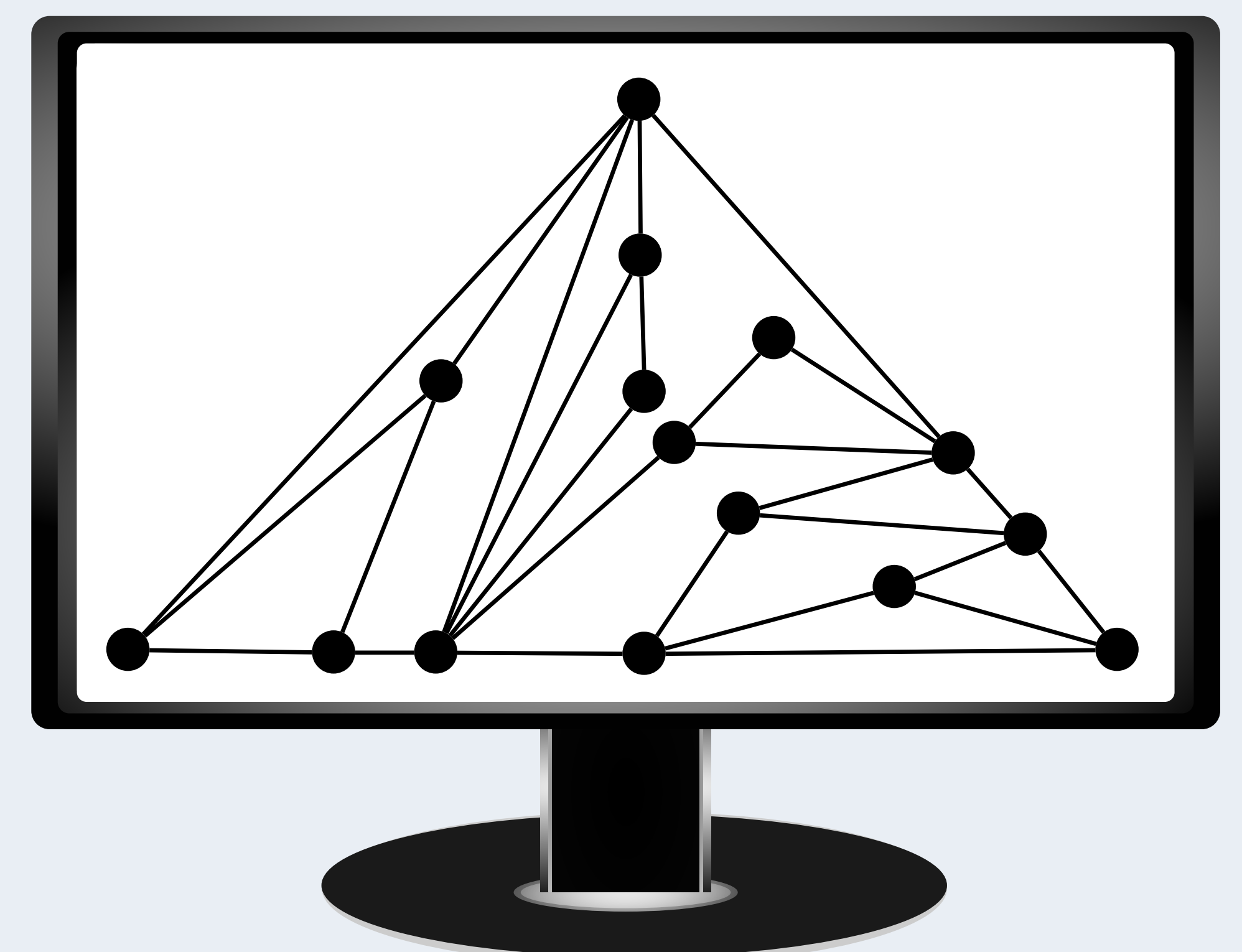
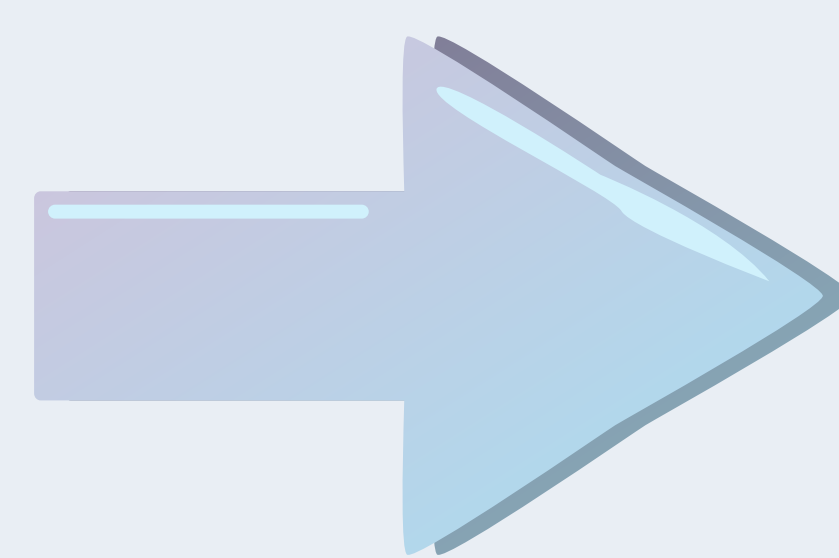


- ▶ Merge edge sections based on the direction vectors at a crossing

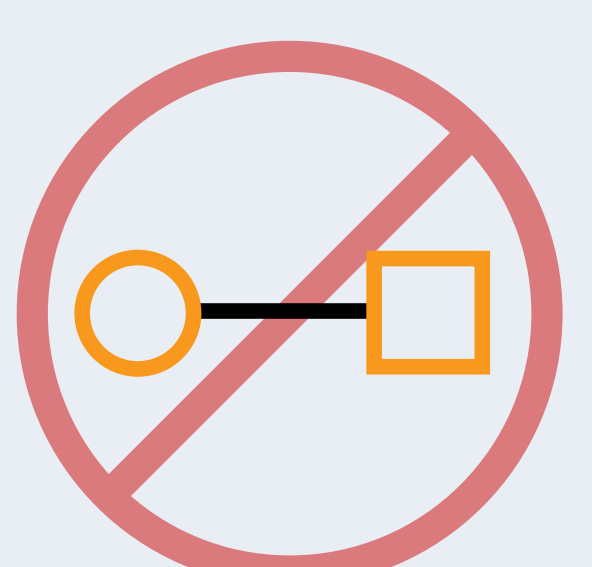
Use the recognized graph for further processing



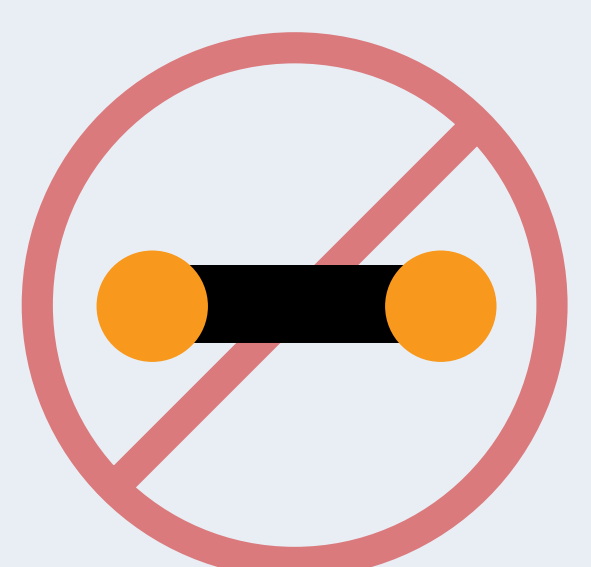
Graph drawing algorithms



Features currently not recognized



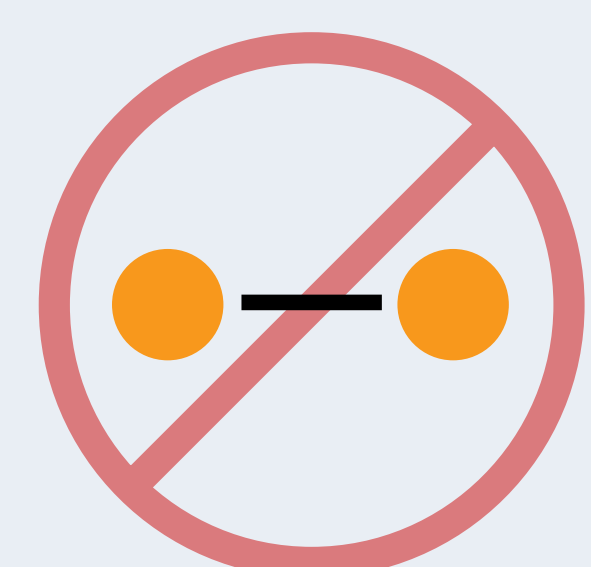
Unfilled vertices



Thick edges



Large vertex size differences



Gaps