

MiniProject1

4a) The tangent angle jumps when the slope changes direction because arctan function is odd. This leads to peaks in the resulting curvature making false detections that more likely. To deal with this problem I incremented or decremented an offset to the angle by π . The trick is that there are expected changes as well, but they are usually smaller jumps therefore using a tuned threshold was enough to mitigate the problem.

4b) There are various ways to interpret what it means to “nearly coincident”, but all of them would probably involve some measure of distance. The most straightford, which is the method I have used, considers two detections to be nearly coincident if their indices are less than some threshold apart. My solution uses index difference of 12, which works pretty nicely. When two detections are nearly coincident my solution takes the one with the smaller corresponding speed.

4c) My best results were comparable to the default. With the default parameters dealing with **stroke9** was difficult because the pen speeds dips at random places with high curvatures as well. Thus, increasing the speed threshold and reducing the curvature threshold improved results a little bit.

4c) The paper doesn't add much to the default parameters, but mentions couple of approaches to remove the false detections, when merging. Most of the additional suggests or tricks involve relative thresholding of the sizes of the segments with respect to the size of the neighbors. I have tried removing relatively small segments with respect to their immediate neighbors with the same classification.