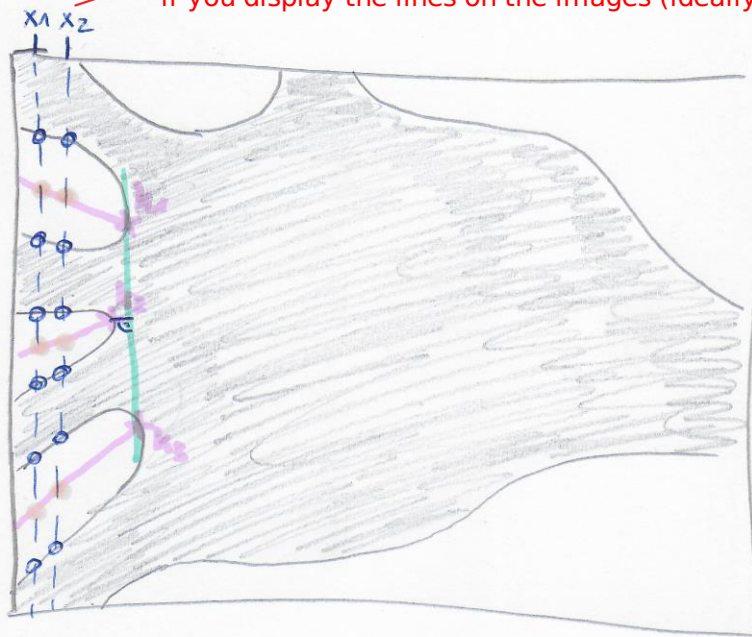


Palmprint Alignment

Try different values for x_1 and x_2 ; it's easier to pick good ones if you display the lines on the images (ideally all of them).



- 1) draw the largest contour (you need to search for it)
- 2) Trace the boundary of the holes between the fingers
 - a) define close x -values (x_1 & x_2)
 - b) run along the whole height of the image and check, if x hits a contour
→ find 6 contour-hits
▽ the contour can be longer/thicker than 1 pixel
 - c) define the middle points of the holes
 - d) define straight line that connects the middle-points in each hole
 - e) define h_1, h_2, h_3 → intersection points of straight lines with hole contour
 - f) connect h_1 and h_3 with a line → y -axis
 - g) draw a line from h_2 , that hits the y -axis (90°)

g) \rightarrow to hit a line perpendicular, your slope needs to be the negative inverse of the line's slope

h) line from h_2 to intersection = x-axis

i) rotate the image around the new defined coordinate system

\hookrightarrow intersection = new centre

