

001 1 Gabor filter bank

002 We have employed a set of Gabor filters for our feature extraction process. Our aim with
003 these is to extract both cracks and holes in the pole images of various sizes, oriented at
004 different angles. Figure 1 shows the filters we have employed in our study.

005 2 Pole pictures

006 Figure 2 shows the poles we have employed for our study. All the original pictures
007 have a 9000×12000 resolution, but they have been downscaled to 900×1200 for this
008 appendix.

009 3 X-ray scanner and scans

010 The X-ray scans for this work have been obtained with the Hector 240kV Micro-CT
011 scanner, developed in the centre for X-ray tomography of the University of Ghent
012 (UGCT). Figure 3 shows the setup of this scanner (above), and cross-sections of the
013 scans of all the 5 poles (below).

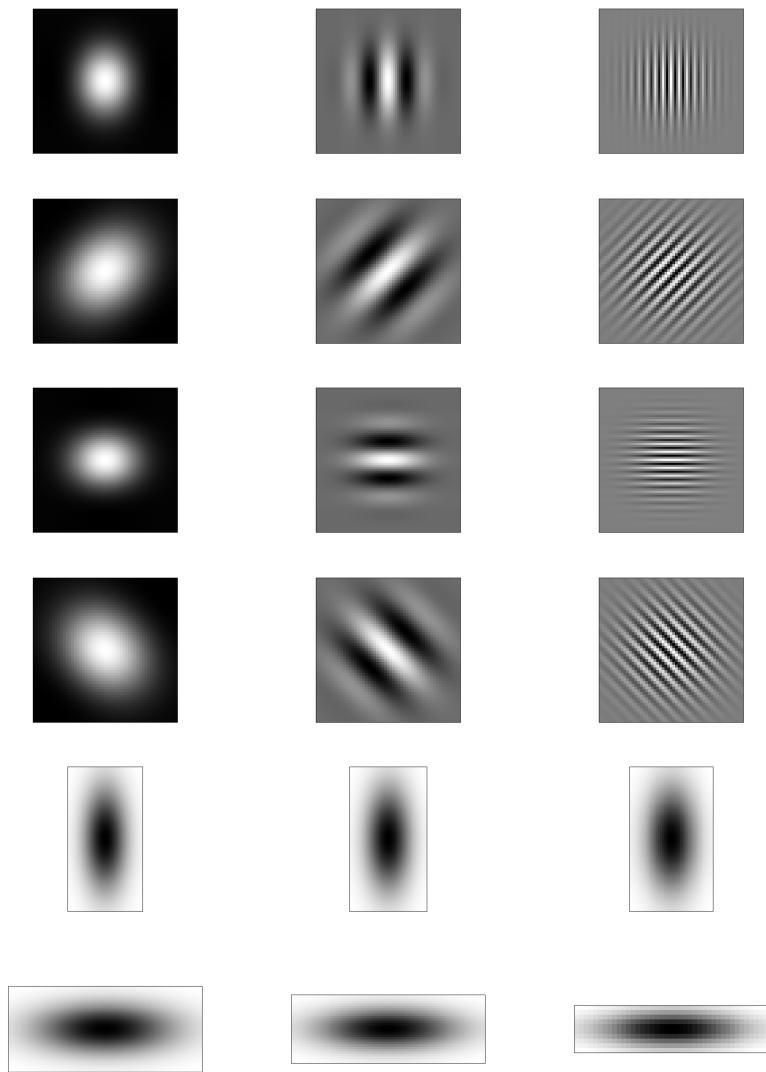


Fig. 1: Gabor filter bank we have used in our feature extraction process. Note that the last two rows are the same filter but at different scales, to capture features of different sizes.

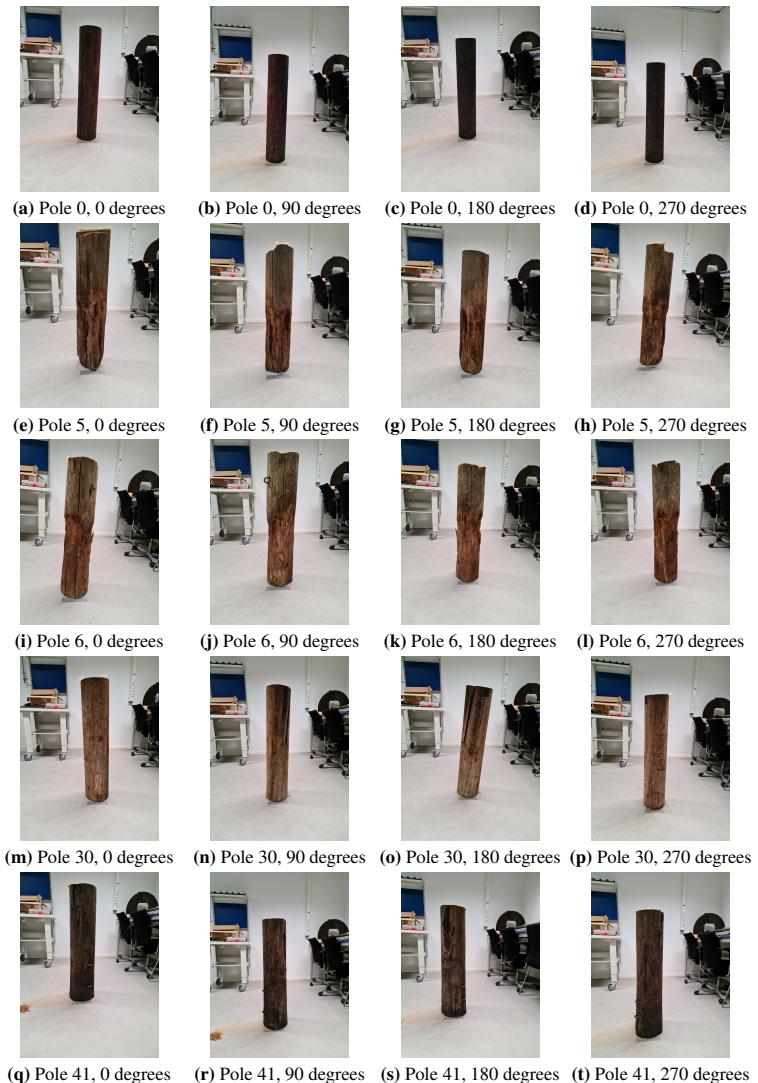


Fig. 2: RGB pictures of the poles we have employed in our study



(a) Hector scanner



(b) New pole

(c) Pole 5

(d) Pole 6

(e) Pole 30

(f) Pole 41

Fig. 3: Hector scanner employed to obtain the X-ray scans, and cross-sections of the scans. Scanner and scans courtesy of UGCT.