

Figure Supplemental 4: Manual measurements of root tip angles using ImageJ. With the straight-line tool, a line is drawn (red line) and the angle is measured by ImageJ. (a) and (b) represent a root bending imaged with the microscopy through method in a vertical-stage microscope. (a) After 2 minutes and (b) 62 minutes of gravistimulation. (c) and (d) represent a root bending imaged with a flatbed scanner. (a) After 2 minutes and (b) 10 hours of gravistimulation.

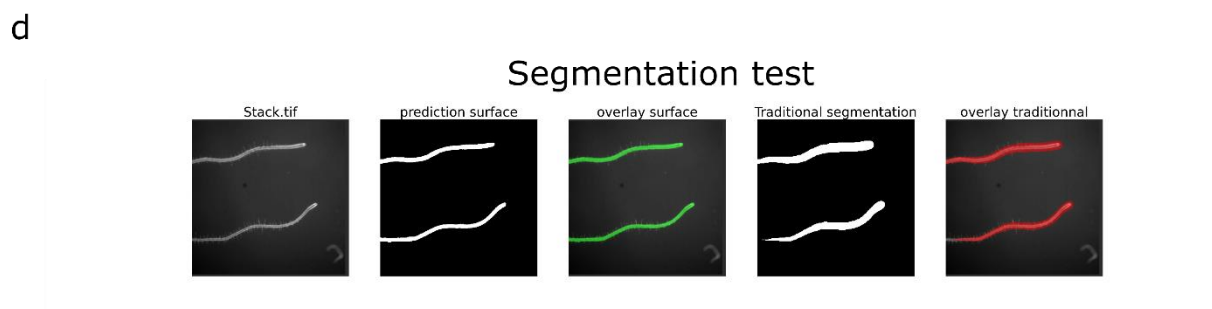
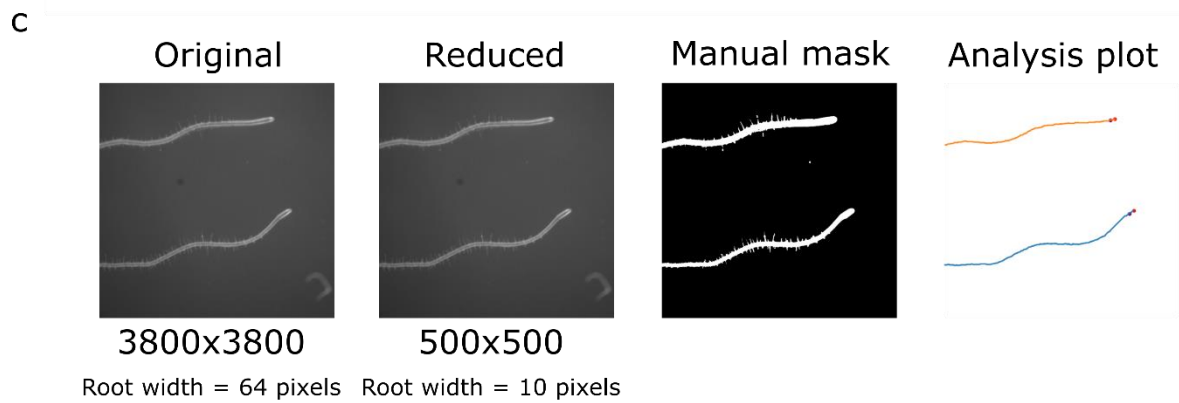
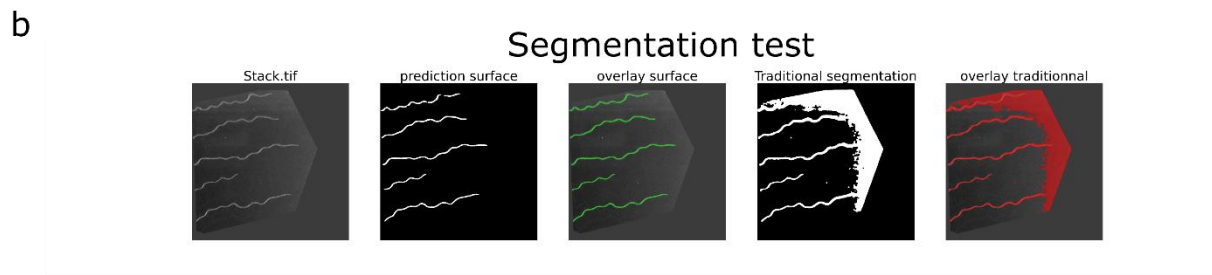
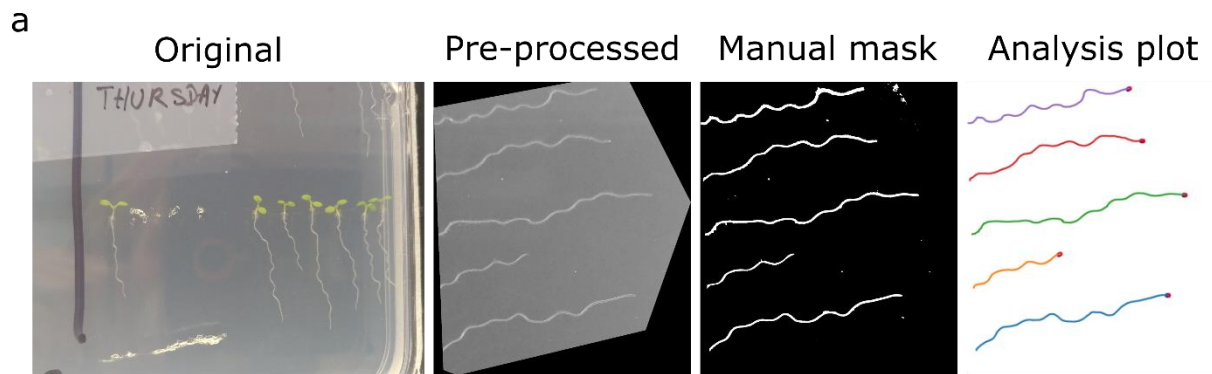


Figure Supplemental 5: (a) Semi-automated ACORBA analysis of root angle from mobile phone image. (b) Segmentation test of the mobile phone image comparing both deep machine learning and automated traditional segmentation. (c) Semi-automated ACORBA analysis of root angle from horizontally growing Col0 observed with a stereomicroscope. (d) Segmentation test of the stereomicroscope image comparing both deep machine learning and automated traditional segmentation.