RAHMADHANI M. Shape and Vein Extraction on Plant Leaf Images with Fourier and B-Spline Modeling. Under the supervision of YENI HERDIYENI and IWAN HILWAN.

Leaf features extraction on plant leaf image is still be a problem on automatic plant leaf identification. Shape and venation of leaf are a significant part of leaf for distinguishing a species of leaf from each other. Shape feature extraction with Hough transform and Fourier descriptor were implemented and their effectiveness on leaf shape recognition were compared. Effectiveness of both shape recognition methods were evaluated by recall-precision measurement. Recall-precision evaluation showed that leaf shape represented by Fourier descriptors is more effective than represented by Hough transform. Plant leaf image vein extraction using b–spline representation was implemented. An automatic initialization of vein search parameter using Standard Hough Transform was proposed.

Keywords: leaf shape extraction, leaf vein extraction, fourier descriptor, b-spline.