# ABSTRACT

The development of medical technology world today requires us to create an innovation, as well as the method of classification of tumor types. Analysis conducted by the physician based on the preparation of samples. Previous research using a microscope which was seen visually by the human eye. Therefore need to be made a tool that can classify tumor types based on a sample images quickly and automatically, in order to obtain an accurate analysis and evidence.

At this final project created a classification method by using Matlab. This method is based on cell shape. The process starts from the acquisition image processing image data, the noise removal filter, thresholding, until the image is ready to be classified using K-NN method. Image analysis is done by reading the information and form a tissue sample cell, and then do a comparison between the results of manual and automatic classification.

Expected at the end of the assignment is made of a system that can classify the type of tumor in the thyroid gland by pathologist Microscopic Anatomy-based image processing of digital images with an accuracy rate above 90%. So it can help paramedics to quickly see the type of tumor that attacks the thyroid gland.

Keywords: *Patology Anatomy, Filter, Thresholding*, **Image Analysis,** *Microscopic, k-nn*