# ABSTRACT

Indonesia is a country prone to natural disasters that often cause casualties. To identify the victims' identities, an identification process is needed. One odontological forensic method that can be used for identification is the Palatine Rugae. Rugae Palatina has unique characteristics in each individual and is also resistant to damage so that it can be used in the identification process. This Final Project aims to design a system that is able to identify individuals by utilizing the Rugae Palatina image pattern.

The system design uses 290 Rugae Palatina image sample data from 29 individuals, each of which is taken 10 images and then processed with data pre-processing stages, feature extraction using the Principal Component Analysis (PCA) method, and classification using the Adaptive Neuro Fuzzy Inference System (ANFIS) method.

The output of this final project is a system that is able to identify individuals based on the palatine rugae pattern with the best accuracy rate of 96.55% and computational time for 0.0107 seconds when the number of training data parameters is 232 images, the amount of test data is 58 images, the number of features is 75, and the number of epoch is 140.

**Keywords**: rugae palatina, PCA, ANFIS, ANN, Fuzzy Logic