
INFORMATICS INSTITUTE OF TECHNOLOGY

INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

# Predicting the possibility of Chronic Pancreatitis

A dissertation by

**Mr. Bawantha Wickramarachchi**

Supervised by

**Mr. Iresh Bandara**

Submitted in partial fulfilment of the requirements for the BEng (Hons) Software Engineering degree at the University of Westminster.

September 2022

# ABSTRACT

Chronic Pancreatitis is a disease that causes irreversible damage due to the inflammation of the pancreas. If this disease is not diagnosed early, it will have a critical impact on the user's health. In the project, the author tries to predict the possibility of Chronic Pancreatitis level for an MRI or CT image of the abdomen. In order to give the prediction, a CNN classification model will be used used in this study. Apart from the predicted outcome, the model will also show the predicted possibilities related to healthy and pancreatitis status. The main approach of this study is to increase the awareness of medical experts and patients toward Chronic Pancreatitis. Since this model output results with predicted percentages, it also helps to have an idea about the seriousness of the disease.

The author developed two models to output the predictions for MRI and CT images separately. After going through a trough evaluation and testing developed model was able to increase up to a point where it shows 89.55% for the CT prediction model and 88.18% for the MRI prediction model.

**Keywords:** Chronic Pancreatitis, Medical Imaging, Deep Learning, Image Processing