CHRONIC OBSTRUCTIVE PULMONARY DISEASE PREDICTION SYSTEM

S.L.Niwarthana Nihathamani De Alwis

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Department of Computing

Informatics Institute of Technology, Sri Lanka

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Abstract

Anyone who has struggled to breath knows how important the value of lungs. Imagine for a second if you have a difficulty in breathing for rest of your life, it can be a dangerous condition. But how should we predict that? Because we can't identify the condition of our lungs. Chronic Obstructive Pulmonary Disease (COPD) is a condition that shows to us due to the careless activities in our daily life. Most often condition is caused by air pollution. Smoking also can be considered as a major reason for COPD. There is no age difference to have the COPD condition. The most effective way to control this disease is to diagnose early and then seek appropriate medical treatment. But many people are unaware that they have COPD until the lungs are damage because the symptoms are dead until it happened.

The objective of this research is to provide a rapid, effective, and convenient procedure to assess the condition of the patient's lungs. For that it is mandatory the help of a computer-based automation system for COPD prediction. The following chapters will clearly discuss the existing systems according to the project, and how it has been done under this project. It will also discuss the latest techniques and technologies currently in use for the proposed solution to the project. Then it discusses clearly how to choses the best implementation and how to get the solution. It uses Deep Learning approaches and signal processing techniques to predict the COPD. Respiratory audio clips are used to diagnose COPD and datasets are collected from trusted resources. Project testing has been done with an accurate testing plan and has been evaluated by project evaluation domain experts and technical experts. Finally, the prototype was designed and implemented with good performance and accuracy.

Keywords: COPD, Deep Learning, Signal Processing, Respiratory audio