Pressure Prediction in Mechanical Ventilators Using Neural Networks

Cristian David Parroquiano Jimenez - 20222020192
Joel David Pérez Arroyave - 20242020017
Santiago Chavarro - 20231020219
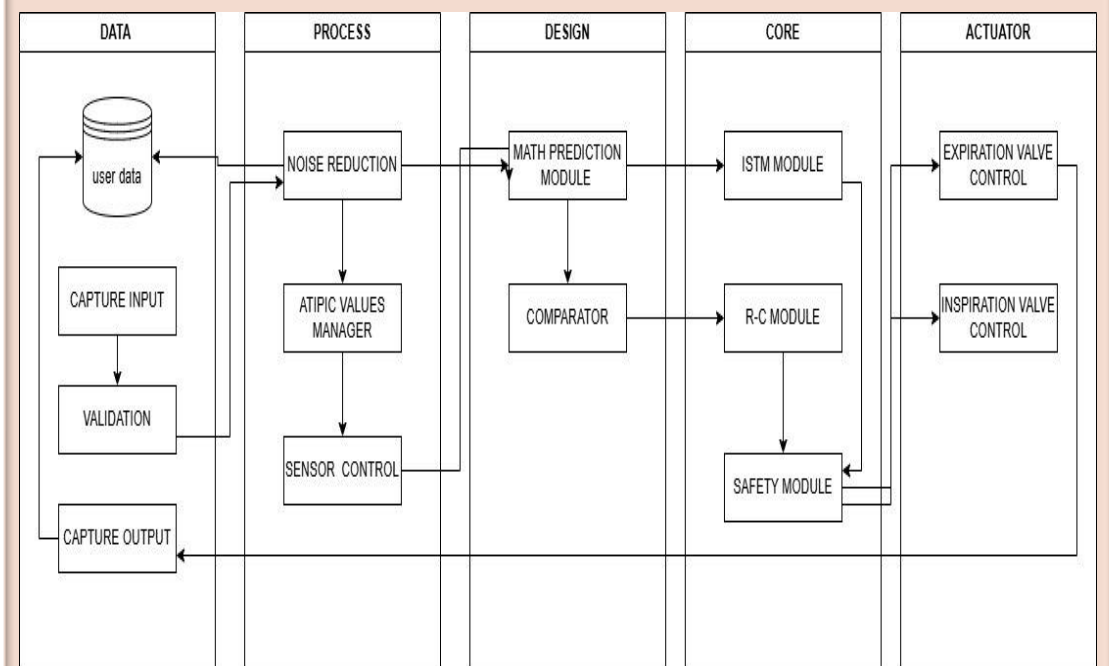Juan Gonzalez - 20222020200

Background

Ventilator pressure has been a problem to many patient and doctors, the manual manipulatios requires a lot of time and resources for every patient and their unique attributes and needs.

Then, it was a great opportunity to develop a solution using neural networks to predict the pressure

Proposed Method

Problem

Some problems we identified in the mechanical ventilators are:

- Manual operation

- Differences between attributes

- Time needed to configure the ventilator

Results

Using long-short term models we were able to develop a tool that predict the pressure given some parameters, using a differential equation, the output of the system follows the data driven simulation and provides the pressure

Goal

The goal is to keep improving the tool to give better diagnosis and get a better outcome of the patient's health

Conclusion

Using long-short term models to predict the pressure is a tool that helps the environment of ventilators to patients so they can auto regulate based on the parameters and attributes of the patient and provide a better outcome of the process