APPLICATION OF ARTIFICIAL INTELLIGENCE TO DIAGNOSE PATIENTS WITH SUSPECTED COVID-19

First A. Author

Giovanna Lourenço Viriato

somebody1@somewhere.com

giovanna.viriato@hotmail.com

Centro Universitário Una Betim

Avenida Governador Valadares - 640, 32600-216, Minas Gerais, Brazil

Dríadas Gontijo Alves Pereira

driadas.gontijo1@hotmail.com

Centro Universitário Una Betim

Avenida Governador Valadares - 640, 32600-216, Minas Gerais, Brazil

**Camila Chaves Mariano**

[camilacmariano@hotmail.com](mailto:camilacmariano@hotmail.com)

Centro Universitário Una Contagem

Avenida Maria Da Gloria Rocha – 175, 32010-375, Minas Gerais, Brazil

**Samara de Jesus Duarte**

samaradejesusduarte@gmail.com

**Tâmila Adriane de Sousa**

tamilasousa98@gmail.com

Centro Universitário Una Betim

Avenida Governador Valadares - 640, 32600-216, Minas Gerais, Brazil

**Edyene Cely Amaro Oliveira**

edyene.oliveira@prof.una.br

Centro Universitário Una Betim

Avenida Governador Valadares - 640, 32600-216, Minas Gerais, Brazil

**Abstract.** There is a high rate of contamination by the Covid-19 virus in the world and an the great difficulty in carrying out tests to confirm the presence or not of the virus in the population, due to the great demand that overloads the laboratories and the high cost of the tests. In order to facilitate the diagnosis based on the analysis of symptoms, a database was generated from public databases extracted from the internet with some national and international patients, so that the physical manifestations of those who contracted the virus and of who just had a common cold or flu, in order to differentiate and classify them. The objective of this work was to create from the characteristics indicated by the patient with suspected Covid-19 an Artificial Neural Network (ANN) capable of indicating whether the patient is positive or not for the Coronavirus. For the modeling of artificial neural networks, the Orange Canvas tool was used, which processed the data collected with the LBFGS, SGD and Adam algorithms, through the methods of cross-validation and random choice. In the tests carried out, the performance of the artificial neural network obtained a 95% convergence.

**Keywords:** Coronavirus, Covid-19, Artificial Neural Networks, Database, Machine Learning