

Multi-Agent Modeling the Spread of COVID-19 epidemic

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1 Introduction:

During December 2019, a mysterious and contagious illness has been detected in *Wuhan, China*, due to The *Sars-Cov-2* Coronavirus, Called later *Covid-19*. Two Month later, the rapid spread of coronavirus disease become a global threat affecting all most of countries in the world, what requires finding strategies and tools to monitor and prevent the spread of the disease. Multi-Agent modeling spread of an epidemic is one of this tool.

2 Why modeling an epidemic spread is important?

Using modeling help us to be able to do the following:

1. Inform our medical system about the number of patients expected in order to be prepared
2. Evaluate and modify public health measures
3. Predict a trajectory of an epidemic
4. Try to understand how the disease spread's

Although the models can't predict what will happen, but they can expect the results of some scenarios, so we can plan and act to achieve the best possible results

3 Aim of the project:

In this work we use the concept of Multi-agent and simulation in order to conceive a multi-agent model who described the spread of covid-19. This model will be implemented in the Multi-agent platform JADE.

4 Objectives:

1. Read some related researches of existing model in this area to better understand the topic
2. Develop a model using a multi-agent platform JADE
3. Test and evaluate some scenarios
4. Complete the final report