

COVID-19 OUTBREAK: HOW CORONAVIRUS SPREADS

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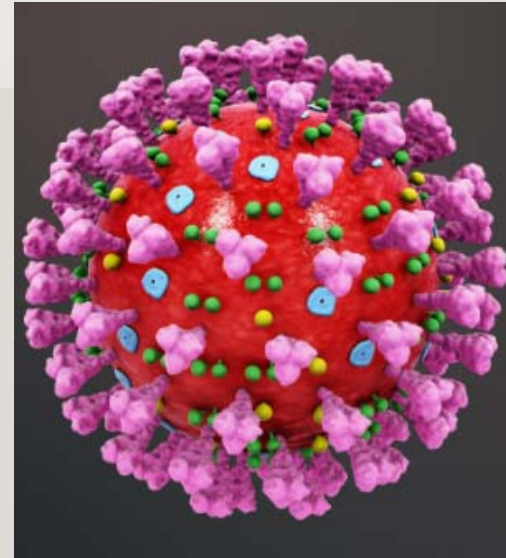
COSC729 :VIRTUAL REALITY AND ITS APPLICATION

ABSTRACT

- **The objective of this VR program is to educate the user on how the virus spreads in our communities through the use of a 3d environment representing a hypothetical community.**
- **Situational awareness to reduce your chances of being infected or spreading COVID-19 by taking some simple precautions.**
- **Provide much needed information and real solutions for the COVID-19 outbreak and to improve how we respond to future emerging infectious diseases.**

INTRODUCTION

In 2019, An outbreak of a coronavirus took place killing so far about 287 525 people around the globe. And a total confirmed cases of 4 179 479, affecting 215 Countries, areas or territories.



SYSTEM ARCHITECTURE

- **The objective of this VR program is to simulate the spreads of COVID-19 in our communities through the use of a 3d environment representing a hypothetical community.**
- **In this system, different 3D engine systems: Google SketchUp, 3DS Max and Vizard-Native models(avatars). I am also using models from online sources.**
- **In the environment there will be different elements that are found in a regular communities such as a hospital, a school, a local shopping center, a gas station, residential buildings, streets, cars, people, etc.**

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- **The 3D models will have different textures accordingly. The roads will have asphalt textures and cars will have different colors.**
 - **Keyboard: Will be used to trigger different simulation scenarios.**
 - **Avatar animations: Avatars will walk around and come in contact (proximity) with other avatars.**

MODELING

SCHOOL,
GAS STATION
HOSPITAL
AMBULANCE



IMPLIMENTATION

- **The user will have the option to perform different simulation tasks such as:**
- **Quarantine people in the community for certain period of time.**
- **Send people to random place (School, Gas station, Grocery store...)**
- **Place a sick person in the environment.**
- **The application will show the user the infection rate of the spread. This will be calculated by generating a count every time that an infected person comes into proximity to a non-sick person. Each person will be contagious for only random period of time.**

CONCLUSION

- **This particular simulation shows how important people should keep social distance and a task that has become essential in this crisis. I hope that this program helps people understand how the decisions we make today impacts our communities.**