

Research Project Proposal

An Android APP that collects and displays Daily COVID-19 and Flu Cases

Student: Xiangyang Xu

Advisor: Professor. Shucheng Yu

Section 1: Introduction

This project develops an android app that collect and displays daily COVID-19 and flu cases in a user-friendly manner. Machine learning will be used to project the trend and provide safety advice.

Section 2: Problem description

1. The server program provides predictions and security recommendations, which will use machine learning
 - a. Covid-19 Prediction and Advise Part
 - i. Find a good dataset from Kaggle.
 - ii. Use different kinds of machine learning to predict. Optimize them and make them become a good model.
 - iii. Assemble these models to make the final model.
 - iv. Make pre-trained model
 - v. Give advice based on the prediction of models
 - b. Flu Prediction and Advise Part
 - i. Find a good dataset from Kaggle.
 - ii. Use different kinds of machine learning to predict. Optimize them and make them become a good model.
 - iii. Assemble these models to make the final model.
 - iv. Make pre-trained model
 - v. Give advice based on the prediction of models
 - c. Data transmit.
 - i. Receive location data from user
 - ii. According to the user's location, transmit corresponding predict and advice
2. Develop an android app as client to show the prediction and advice from
 - a. Location data collection
 - b. Friendly-use client develop
 - c. Output data needed by server and read received and process data from server
 - d. If other functions are thought of, they will be developed if there is more time

3. Use Socket to transmit data between server and client
 - a. Client sends location data to server.
 - b. Server uses pre-trained model to calculate predict solution and give advice
 - c. Server sends prediction and advice back to Client.

Section 3: Expected results

Server side can calculate future Covid19 and flu prediction based on dataset and machine learning model accurately.

Client side can get prediction and suggestion from Server.

Client side should be a user-friendly android app.

Socket will be used for sending and receiving data between client and server

Section 4: Project timeline

| Time | Work |
|---------|--|
| Week 1 | data collection & research project proposal |
| Week 2 | data collection & research project proposal |
| Week 3 | Make Covid19 machine learning model |
| Week 4 | Make Covid19 machine learning model |
| Week 5 | Make Covid19 machine learning model |
| Week 6 | Make Flu machine learning model |
| Week 7 | Make Flu machine learning model |
| Week 8 | Make Flu machine learning model |
| Week 9 | Server-side & Client-side develop |
| Week 10 | Server-side & Client-side develop |
| Week 11 | Android APP develop |
| Week 12 | Android APP develop |
| Week 13 | Android APP develop |
| Week 14 | Android APP develop |
| Week 15 | Reserved time for fix bug or improve project |
| Week 16 | Final report |