Faculty of Engineering and Applied Science

SOFE 3490U: Software Project Management

Lab #2: Smart Health Detection System

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Project Proposal

Smart Health Detection System

1.0 Project Description

The reason we chose this topic is due to the incredible future potential that it presents for medicine and software as a whole. We also felt that the topic is unique in contrast to the others listed and that it hasn't really been investigated to the extent that the others have been, which presents a mental challenge to us. The problems that our program will tackle are developing better diagnoses for doctors, giving patients some visualization, and allowing for potential breakthroughs in medicine. This project is being developed to hopefully prevent terminal diseases as well as identifying them.

Why we chose it, introduction, what project is tackling, what we wanna accomplish

2.0 Project's Objectives

Project Authorities
The Project Authority for the Smart Health prediction system includes: the **director of Health Canada.**
Stakeholders
Stakeholders include: **Customers** (eg. Hospitals, Pharmacies, Private Practices…), **Investors** and **Health Canada**
Objectives
1. Make an application/online system that utilizes health care data and turns it into predictive models to offer health care guidance
2. Gives users instant diagnoses of current health issues by taking in the users medical problems/symptoms and using the database to match the most accurate diagnoses.
3. Predict potential future diseases or illnesses that clients may carry using the clients past health history as well as familial history and data mining from the database.
4. Improve the healthcare system as well as public health in Canada by giving instant health care advice or guidance online
5. Provide contact information of Licensed medical practitioners best suited for the specified illness

6. Provide preventative measures for potential risk of illness or diseases

3.0 Measures of Success

1. Inputting symptoms and having the expected result return.
2. Values are stored somewhere to be accessed later.
3. The program is responsive and updates in real-time

4.0 Infrastructure

To achieve the project's objectives, a robust pipeline needs to be developed.
The back end infrastructure includes:

- Graph database to store patient's information and the relationship with symptoms and diseases
- Document-based database to store patient's documents such as X-ray, previous consultations and diagnosis and others
- Cloud server to host the API to retrieve patient's data
- GPU cloud servers to train machine learning models based on the current stored data