

Individual Project Report

Team Name: **AI Predictors**

Project Title: **Intelligent Dengue Predictor**



Team Member Name: Bai Sihai

Team Member Matriculation Number: A0229986E

Team Member Contact (Mobile/Email): e0687394@u.nus.edu

1. My personal contribution to this project.

I took on the role of Project Manager for this project, and contributed to the following Project management:

- Co-ordinate team efforts
- Organize meetings
- Provide meeting agenda and meeting minutes.

Application implementation:

- Data Pre-processing
- Results visualization module

Report:

- Project report template design
- Research on dengue
- Report writing and consolidation.

Video Presentation:

- Slide creation and presentation for business case

Project idea discussion and research/data gathering:

- We discussed various project ideas among team members. Everyone contributed their project ideas. The team members have various interesting ideas in different areas such as AI-powered shopping mall, e-Commerce, Route optimizer, Malware detection.

We eventually reached a majority consensus on the Dengue Cases prediction project, because it allows us to practice what we have learnt in the course. It also has a clear

problem statement that is beneficial to mankind, and the effectiveness of the application can be easily validated by comparing the predicted results against actual historical data.

The team is also very keen to implement a project with Machine Learning, because it will strengthen our knowledge.

- For the project, I worked together with the team to research on dengue information.
- For data gathering, the number of dengue cases was stored as graphics in PDF files, so we shared the data entry tasks among team members.

2. What I have learnt that is most useful ?

The experience in implementing this intelligent reasoning system project is the most useful thing that I have learnt. It is different from the usual structured programming project.

1) Ideation

Our team members come from different industries with different experiences. During project idea discussion stage, we are able to bounce our ideas off each other to get new ideas and insights. The result is that we have many interesting and diverse ideas that are relevant to solving real-world problems.

Given the diversity of ideas, we have to discuss and agree on a topic to bring the project forward in the right direction.

2) Version control

This project involves many team members working in parallel. We used GitHub as a version control tool to avoid members overwriting the changes done by other members.

3) Data pre-processing is required

The required historical dengue cases statistics were not readily available in numerical form. We have to collect, extract and clean the data collected manually from PDF documents.

4) Feature engineering is required

We discovered from our own experiments and related articles that the raw weather data does not correlate directly to the actual dengue cases. Some of the data are also not in the time range that we require (e.g hourly vs daily). Therefore, we had to perform feature engineering.

3. How I can apply this knowledge and skills in other situations or my workplace ?

Dengue prediction is a time-series problem. It can be applied to any trend-forecasting problem.

In my workplace, the Machine Learning techniques can be adapted to make plant processes more efficient, or to predict the trend/outputs based on process inputs.