Hanan Kwok Project Proposal

What will the application do?

The application will be able to predict the next day’s concentration of different substances that have an effect on air quality, based on past readings of these substances’ concentrations.

What need does it fill?

The need it fills is a need to inform people (especially those who are sensitive to changes in air quality brought on by these substances’ concentrations varying over time).

Who is the target audience?

The target audience would be weather reporters & (indirectly) the public, since this application is meant to inform them of these changes and give short-term forecasts.

How will it fulfill the need?

It will fulfill the need by taking in past data about these substances’ concentrations and giving a forecast that is as accurate as possible so that the information can be given to weather reporters so they can inform the public or it can be shown to the public directly (for example, in a weather app or on a website).

Describe the user stories and/or use case(s).

The use cases are to either help weather reporters in making forecasts of air quality or to inform the public (especially those who are sensitive to changes in air quality or sensitive to certain substances in the air) about each day’s air quality.

What technologies will be used for the project?

The technologies that will be used for the project include the programming language Python, its various libraries such as Flask (for simple web deployment testing on localhost), TensorFlow & Keras (for AI/ML operations), Pandas (for data processing/handling), Matplotlib/Seaborn (for data visualization), Plotly (also for data visualization), & NumPy (for mathematical operations). Other technologies may be added over time.

Proof of concept: Produce a very streamlined version of the application using the tech of your choice.

Demo: Give a brief demo (2-5 minutes), including the content of the proposal and the UI or back-end functionality.

Demo video/proof of concept: <https://drive.google.com/file/d/1D6S63OLfBKnF9IpvWosFSQyZ8u0GSsNg/view?usp=sharing>