MSc in Software Design with Artificial Intelligence

Initial Project Concept

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| Student Name: | Simon McLain |
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| Project Title: | Applying Machine Learning to improve the prediction of future COVID-19 cases on the island of Ireland |
| Project Background: | Machine Learning can be a valuable method for making predictions by efficiently detecting patterns in large amounts of data. Once created, a Machine Learning model can be updated with new data to maintain and improve the accuracy of the predictions.  As we enter new phases of the pandemic Machine Learning models that continue to produce reliable forecasts of future patterns of COVID-19 community infections will be helpful for government bodies when preparing healthcare service responses and public health advice.  In addition, public health advice and management of healthcare services on the island of Ireland is divided between the Stormont Executive governing Northern Ireland, and the Government of the Republic of Ireland. Given there is free travel between the two jurisdictions a model that makes predictions of future COVID-19 on the island of Ireland will benefit both communities. |
| Project Challenge: | Create a Machine Learning model that accurately predicts COVID-19 cases across both jurisdictions in Ireland. |
| Proposed Approach: | Conduct a comparative analysis of relevant literature, for example:   * Machine learning models applied to COVID-19 * Review of COVID-19 model usage in Ireland   Select variables and gather relevant data.  Using Python to create, evaluate and select the best performing Machine Learning model.  Evaluate the suitability of the selected model as a tool for use by government bodies in preparing healthcare services and public health advice efficiently and effectively. |