**Hackathon Challenge Statement**

(this document is also available at fb.com/dsschack)

**Theme:** Hack & develop an innovative data science solution to help make Melbourne a smart city while

demonstrating the use of Azure Machine Learning, Microsoft’s data science tool.

Access data sets here : [**www.govhack.org/2015-data**](http://www.govhack.org/2015-data)

**Challenge Option 1:** Health Care

* Hack, Discover, visualize, showcase insights or even build a predictive application for disease occurrence based on factors such as health history, time of year, income or tax info, neighborhood, type of job, birth weight or even your name!

**Challenge Option 2:** Good living

* Hack, Discover, visualize, showcase insights or even build an application to predict indicator of living standards of a neighborhood based on factors such as recreation facilities, population of county, crime/safety ratings, income of neighborhood, or traffic congestion.

**Challenge Option 3:** Green Neighborhood

* Hack, Discover, visualize, showcase insights or even build an application to predict energy consumption of a neighborhood based on variables such as population, recreation facilities, or income levels.

**Challenge Option 4:** Freestyle

* Be creative – build any innovative data science solution! Only condition is to use these datasets

**Azure ML:** Azure ML is completely free and access only requires signing up to a Microsoft ID (if you don’t already have one).

1. Go to <https://azure.microsoft.com/en-us/services/machine-learning/>
2. Click on Get Started Now
3. Create Free Workspace ($0/Month)

The Hackathon component includes downloading the dataset and uploading into Azure ML. There are a number of options as to how the data can be used in Azure ML, including but not limited to;

* Creating an app
* Further data science analysis and plug into Microsoft Excel
* Plug into Power BI to visualise the solution

**Useful Azure ML Resources**

Access to Azure Machine Learning and getting Started documentation

<https://studio.azureml.net/>

Azure Machine Learning Tutorial for data scientists :

<https://gallery.cortanaanalytics.com/Experiment/Tutorial-for-Data-Scientists-3>

Data science algorithm cheat sheet :

<https://azure.microsoft.com/enus/documentation/articles/machine-learning-algorithm-cheat-sheet/>

Basic experiment showing use of Azure Machine Learning with Python

<https://gallery.cortanaanalytics.com/Experiment/Cortana-Conf-CA-Milk-Python-1?fromlegacydomain=1>

<https://github.com/Quantia-Analytics/Cortana-Data-Science-Example-Python>

Basic experiment showing use of Azure Machine Learning with R

<https://azure.microsoft.com/enus/documentation/articles/machine-learning-r-quickstart/>

Useful tips on python and r packages for Azure ML

[https://microsoft-my.sharepoint.com/personal/akannava\_microsoft\_com/\_layouts/15/WopiFrame.aspx?sourcedoc={2C2E5F49-0904-42DE-A3C6-98A593DDB6D6}&file=Getting%20Started%20with%20Azure%20ML&action=default&d=w2c2e5f49090442dea3c698a593ddb6d6&RootFolder=%2fpersonal%2fakannava%5fmicrosoft%5fcom%2fDocuments%2fShared%20with%20Everyone%2fGetting%20Started%20with%20Azure%20ML](https://microsoft-my.sharepoint.com/personal/akannava_microsoft_com/_layouts/15/WopiFrame.aspx?sourcedoc=%7b2C2E5F49-0904-42DE-A3C6-98A593DDB6D6%7d&file=Getting%20Started%20with%20Azure%20ML&action=default&d=w2c2e5f49090442dea3c698a593ddb6d6&RootFolder=%2fpersonal%2fakannava%5fmicrosoft%5fcom%2fDocuments%2fShared%20with%20Everyone%2fGetting%20Started%20with%20Azure%20ML)

**Useful Azure Machine Learning Resources**

1. Access to Azure ML and getting Started documentation : <https://studio.azureml.net/>
2. Azure ML Tutorial for data scientists : <https://gallery.cortanaanalytics.com/Experiment/Tutorial-for-Data-Scientists-3>
3. Data science algorithm cheat sheet : <https://azure.microsoft.com/en-us/documentation/articles/machine-learning-algorithm-cheat-sheet/>
4. Basic experiment showing use of AML with Python

<https://gallery.cortanaanalytics.com/Experiment/Cortana-Conf-CA-Milk-Python-1?fromlegacydomain=1>

<https://github.com/Quantia-Analytics/Cortana-Data-Science-Example-Python>

1. Basic experiment showing use of AML with R <https://azure.microsoft.com/en-us/documentation/articles/machine-learning-r-quickstart/>
2. Importing data into excel : [Import Azure ML data into Excel](https://support.office.com/en-us/article/Use-Power-Query-to-import-Azure-ML-score-data-into-Excel-651e3678-210b-4ae5-939c-ea860099ef15') , [Video for PowerQuery in Excel](https://channel9.msdn.com/Blogs/Windows-Azure/Using-Power-Query-in-Excel-to-score-against-Azure-ML-web-services)
3. Useful tips on python and r packages for Azure ML

[https://microsoft-my.sharepoint.com/personal/akannava\_microsoft\_com/\_layouts/15/WopiFrame.aspx?sourcedoc={2C2E5F49-0904-42DE-A3C6-98A593DDB6D6}&file=Getting%20Started%20with%20Azure%20ML&action=default&d=w2c2e5f49090442dea3c698a593ddb6d6&RootFolder=%2fpersonal%2fakannava%5fmicrosoft%5fcom%2fDocuments%2fShared%20with%20Everyone%2fGetting%20Started%20with%20Azure%20ML](https://microsoft-my.sharepoint.com/personal/akannava_microsoft_com/_layouts/15/WopiFrame.aspx?sourcedoc=%7b2C2E5F49-0904-42DE-A3C6-98A593DDB6D6%7d&file=Getting%20Started%20with%20Azure%20ML&action=default&d=w2c2e5f49090442dea3c698a593ddb6d6&RootFolder=%2fpersonal%2fakannava%5fmicrosoft%5fcom%2fDocuments%2fShared%20with%20Everyone%2fGetting%20Started%20with%20Azure%20ML)