AquaQ Datathon Challenge

Machine Learning system and Data Analysis for improving Clean, renewable Energy

Overview

Complex generation and storage systems for electrical power, and the data they provide, can be applied to a number of challenges. Whether simply making sure anyone generating electricity at home is getting the best price when selling to the grid; analysing how self-sufficient a property can become; using alternative sources and storage to strive towards smoothed demand for electricity (since power plants prefer steady-state operation); or the variety of other opportunities provided by these systems, nearly any approach or analysis can yield interesting or useful results.

In conjunction with our partner The Electric Storage Company, we've provided data for several properties in NI with solar panels capable of generating power for immediate use in the property, and smart batteries that can store that power or sell it back to the grid. We've included the price of buying from or selling to the electrical grid across each day, which serves as proxy for power generation supply and customer demand.

The challenge here is to find and present any interesting pattern or insight in the data, from usage to storage to buying and selling - any insight has the potential to be of use in furthering clean, renewable energy in NI.

Smashfly Datathon Challenge

Building AI to Unlearn Bias in Recruitment

Overview

AI algorithms are only as good as the data we feed them. Bias in AI can occur at multiple stages of the analytics process; however, focus is usually on the training data or in the model itself. AI is used by large companies for recruiting; however, some companies have had to scrap their AI recruiting tool which showed bias towards a specific group of candidates.

The goal of the future is to open the `black box' of AI, to develop a higher level of trust in the systems we will use. It is critical for future recruitment analytics that systems are created with data that is unbiased and utilize algorithms that can be *explained*.

For our challenge, we will be providing biased and unbiased data. Your task is to develop a suitable process and model that can both uncover and handle the bias in the data and explain the characteristics of candidates that are chosen for interview.

Dell Datathon Challenge

Solving the Climate Crisis and predicting the future.

Overview

The climate crisis continues to be one of the greatest challenges the world has ever tried to solve. There is a number of models around predicating how the climate crisis will evolve and affect us over the next 50 years, these models designed and developed by domain specialist and data scientists re forcing governments to act on the crisis.

As part our challenge we are using data provided by Berkeley Earth around the global climate data going back to 1750 – 2010.

Our challenges are:

1. Prove or disprove the there is a global climate crisis?
2. Build a model to predict the Average Land and Ocean Temperature for the years 2011 – 2015?
3. Predict how the climate will change over the next 100 years with your model.

AI NI Datathon Challenge

AI for good

Overview

Mental health is a serious problem that has been glossed over for many years, but now we are increasing our awareness. Too often we don't recognise when others are suffering from within, and the only way to truly know when someone is suffering is when they open up to someone they trust. As technology offers more convenience, and allows us more time to do what we love or get more done; are we starting to do too much? Are we forgetting about other important aspects of our lives and not giving time to ourselves and others? If we use technology so much, let's find a way to use our everyday tools to inform of problems we may or may not be aware of.

We would like to see machine learning be used for a good cause, so we want you to take the challenge to create something to support a person's mental health. The data we are providing measures the attitude and frequency of mental health issues in the tech workplace for 2014, 2016 and 2018.

This can be done with data provided, or you can find your own!
We can't wait to see what you come up with!

Data:
https://www.kaggle.com/osmi/mental-health-in-tech-survey
https://www.kaggle.com/osmi/mental-health-in-tech-2016
https://www.kaggle.com/osmihelp/osmi-mental-health-in-tech-survey-2018