Week 11: Daily Morning Challenge

Day 1: Tuesday 17th March 2020

Question 1: Illustrate with examples different application of deep learning

Fraud Detection

Another domain benefitting from Deep Learning is the banking and financial sector that is plagued with the task of fraud detection with money transactions going digital. Autoencoders in Keras and Tensorflow are being developed to detect credit card frauds saving billions of dollars of cost in recovery and insurance for financial institutions. Fraud prevention and detection are done based on identifying patterns in customer transactions and credit scores, identifying anomalous behavior and outliers.

Healthcare

According to NVIDIA, “From medical imaging to analysing genomes to discovering new drugs, the entire healthcare industry is in a state of transformation and GPU computing is at the heart. GPU-accelerated applications and systems are delivering new efficiencies and possibilities, empowering physicians, clinicians, and researchers passionate about improving the lives of others to do their best work.” Helping early, accurate and speedy diagnosis of life-threatening diseases, augmented clinicians addressing the shortage of quality physicians and healthcare providers, pathology results and treatment course standardization, and understanding genetics to predict future risk of diseases and negative health episodes are some of the Deep Learning projects picking up speed in the Healthcare domain.

Automatic Handwriting Generation

This application of Deep Learning involves the generation of new set of handwritings for a given corpus of a word or phrase. The handwriting is essentially provided as a sequence of coordinates used by a pen when the samples were created. The relationship between the pen movement and the letters is learnt and new examples are generated.

Image – Language Translations

A fascination application of Deep Learning includes the Image – Language translations. With the Google Translate app, it is now possible to automatically translate photographic images with text into a real-time language of your choice. All you need to do is to hold the camera on top of the object and your phone runs a deep learning network to read the image, OCR it (i.e. convert it to text) and then translate it into a text in the preferred language. This is an extremely useful application considering that languages will gradually stop being a barrier, allowing universal human communication.