Documentation

Depression Therapy using Chatbot

Programming Club - IIT Kanpur

Harish Rajagopal
160552

Vishwas Lathi
160808

Harshit Sharma
160283

Week 1

Coursera - Intro to Machine Learning

Completed chapters from the course by Andrew Ng on Coursera from Stanford University, pertaining mostly to supervised learning, including Linear Regression, Polynomial Multivariate Regression, Logistic Regression, Neural Networks and Back-propagation, Support Vector Machines, etc.

Udacity - Intro to Machine Learning

Completed chapter on text learning from Introduction to Machine Learning course on Udacity, based on preprocessing of text by tokenisation of document, removal of stopwords, word stemming and term-frequency inverse-term-frequency (tf-idf) representation of documents using the python libraries scikit-learn and NLTK.

Week 2

Neural Networks and Deep Learning

Completed chapters of the online ebook *neuralnetworksanddeeplearning.com* on the basics of neural networks, neural network architectures, the back-propagation algorithm, optimizing hyper-parameters, regularization methods and improving performance of neural networks, gradient instability in deep neural networks, and basics of CNNs. Implemented MNIST and CIFAR-10 using the python libraries Tensorflow and Keras using Convolutional Neural Networks.

Woebot - Congnitive Behavioural Therapy Chatbot

Members chatting with woebot, a chatbot made by Stanford researchers which provides supplementary therapy using Cognitive Behavioural Therapy techniques, available on Facebook Messenger. Aim is to obtain maximum responses from Woebot to learn about its tree structure, which will aid in building a tree structure for the project chatbot (virtual human).

Week 3

Cognitive Behavioural Therapy

Obtained and currently studying several transcripts of conversations between patients and therapists practicing Cognitive Behavioural Therapy in therapy sessions, along with a book on the basics of Cognitive Behavioural Therapy, in order to study common methods employed by psychologists to finalise the tree structure.

USC ICT Virtual Human Toolkit

Downloaded and installed the USC ICT Virtual Human Toolkit. Currently viewing tutorials on the VH Toolkit including the VH Builder tutorial, Character Customization tutorial and reading documentation on the toolkit.