**Requirement Analysis**

What did the others:

1. Mahdi Sahlabadi, Ravie Chandren Muniyandi and Zarina Shukur, “Detecting abnormal behavior in social network websites by using a process mining technique”

This research is focused on user behavior process. Firstly, it is defined a normal behavioral pattern and then it is detected an abnormal behavior. The technique used to define the pattern is process mining. The proposed model discovers a normal behavior by genetic process mining technique and abnormal activities are detected by the fitness function, which is based on Petri Net rules.

Link to the article:

<http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=09C366CADD5CA98A497C89D249DBF8D1?doi=10.1.1.676.7411&rep=rep1&type=pdf>

1. Quanzeng You, Jiebo Luo, Hailin Jin and Jianchao Yang , “Robust Image Sentiment Analysis Using Progressively Trained and Domain Transferred Deep Networks”

This research describes the process of sentiment analysis of online user generated content. Recently, social media users are increasingly using images and videos to express their opinions and share their experiences so the large scale visual content can be used to analyze the sentiments of a certain user. The used technology for the visual sentiment analysis in this research is Convolutional Neural Networks (CNN) and for input were used images from Twitter.

Link to the article:

<https://www.cs.rochester.edu/u/qyou/papers/sentiment_analysis_final.pdf>

1. Zhi Yang, Christo Wilson, Xiao Wang, Tingting Gao, Ben Y. Zhao , Yafei Dai , “Uncovering Social Network Sybils in the Wild”

On this article it is revealed the process of detecting Sybil accounts. A Sybil account is a fake identity created to unfairly increase the power or resources of a single malicious user. In the article the techniques used for detecting the Sybil accounts includes: IP Address Tracking, Content Analysis, Account Activity Statistics and User Complaints.

Link to the article:

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.646.2663&rep=rep1&type=pdf>

Resources and tools available

1. SentiWordNet -use for assigns to each word a sentiment score:positivity, negativity,objectivity.

Website: http://swn.isti.cnr.it/

1. Dataset

https://www.cs.uic.edu/~liub/FBS/sentiment-analysis.html

1. TensorFlow is an open source software library for machine learning. We can use it for:

-Image recognizing/classification-

Website: https://www.tensorflow.org/versions/r0.11/tutorials/deep\_cnn/index.html

-Recurrent Neural Networks

-Website:https://www.tensorflow.org/versions/r0.11/tutorials/recurrent/index.html

-we can assigns probabilities to sentences(predict the next words in a given text).

-For this we will use the Peen Tree Bank(PTB) database.

Website: http://www.cis.upenn.edu/~treebank/

Vector Representation of Words

https://www.tensorflow.org/versions/r0.11/tutorials/word2vec/index.html

With this tool we can predict each context word from its target word.

1. Emotion Recognition APIs

http://nordicapis.com/20-emotion-recognition-apis-that-will-leave-you-impressed-and-concerned/

1. Visual Sentiment Ontology

http://www.sentibank.org/applications

1. Idiro SNA Plus Social Network Tools-analyses people's behavior within a community based on this communication with people around them.

http://idiro.com/

1. Another social network analysis tools:

-AdvancedMiner

-IBM SPSS Software

-InFlow Software

-KXEN Social Network

-NETMAP Analytics Tool

-NetMiner

-NodeXL Free