# Task

Semantic analysis of any sentence is one of the most popular issue for Natural Language Processing. This could help computer to understand the opinion of sentence about the topic. So that it could be used for extracting general idea of society about any topic on Internet or etc. This would help celebrities, artists or politicians to keep the pulse of the public.

# Data

Stanford Sentiment Treebank dataset will be used for model training. This dataset includes 10.662 movie reviews from rottentomatoes.com and they are split into 215.154 phrases with 1.100 cases. Then all these 215.154 phrases are labelled by a Machine Turk to 5 different levels; negative, somewhat negative, neutral, somewhat positive and positive.

# Related Work

Recursive Deep Models offered paper [1] is literally related to the proposed task. 3 major recursive models are defined in this paper;Recursive Neural Network, Matrix-Vector Recursive Neural Network, Recursive Tensor Network. Since these are best models in this field, aiming to contribute to this paper would be unrealistic.

# Method

As in the paper [1], At least one of the recursive Modelswill be tried to implement. The last model, Recursive Neural Tensor Network is one of the strongest one among the other semantic analysis in literature. As it is explained in the paper [1], it pushes the accuracy from 80% to 85.4% for positive/negative classification and 71% to 80.7% for semantic labelling. This model is also the only one that can capture the effects of negation and its scope at various tree levels for positive and negative phrases.

# Schedule

Week 1: Literature Research

Week 2: Project Proposal

Week 3-4: Deeper understanding of project

Week 4-5-6-7-: Implementation of models

Week 8-9-10: Debugging

Week 11-12: Testing the implementation

Week 12-13: Optimization of implementation

# References

[1] Manning, Christopher D., Mihai Surdeanu, John Bauer, Jenny Finkel, Steven J. Bethard, and David McClosky. 2014. [The Stanford CoreNLP Natural Language Processing Toolkit](http://nlp.stanford.edu/pubs/StanfordCoreNlp2014.pdf) In Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics: System Demonstrations, pp. 55-60.