

# Comment Analysis System

Analyzing in real-time



# Introduction

## COMMENT CLASSIFICATION

Our system uses an Artificial Neural Network (based on the LSTM Model) to classify comments on social networks. This can be used to classify posts based on the type of comments it receives





# Introduction

## CURSE-WORD FILTER

The algorithm also detects and filters out the comments that contain swear words.

# Motivation



## INFLUX OF TEXTUAL CONTENT

In content hosting websites such as YouTube, there arises a need to filter and detect the emotion in comments so that they can be better presented to the user as part of the website's algorithm.

## AVAILABILITY OF TECHNOLOGY

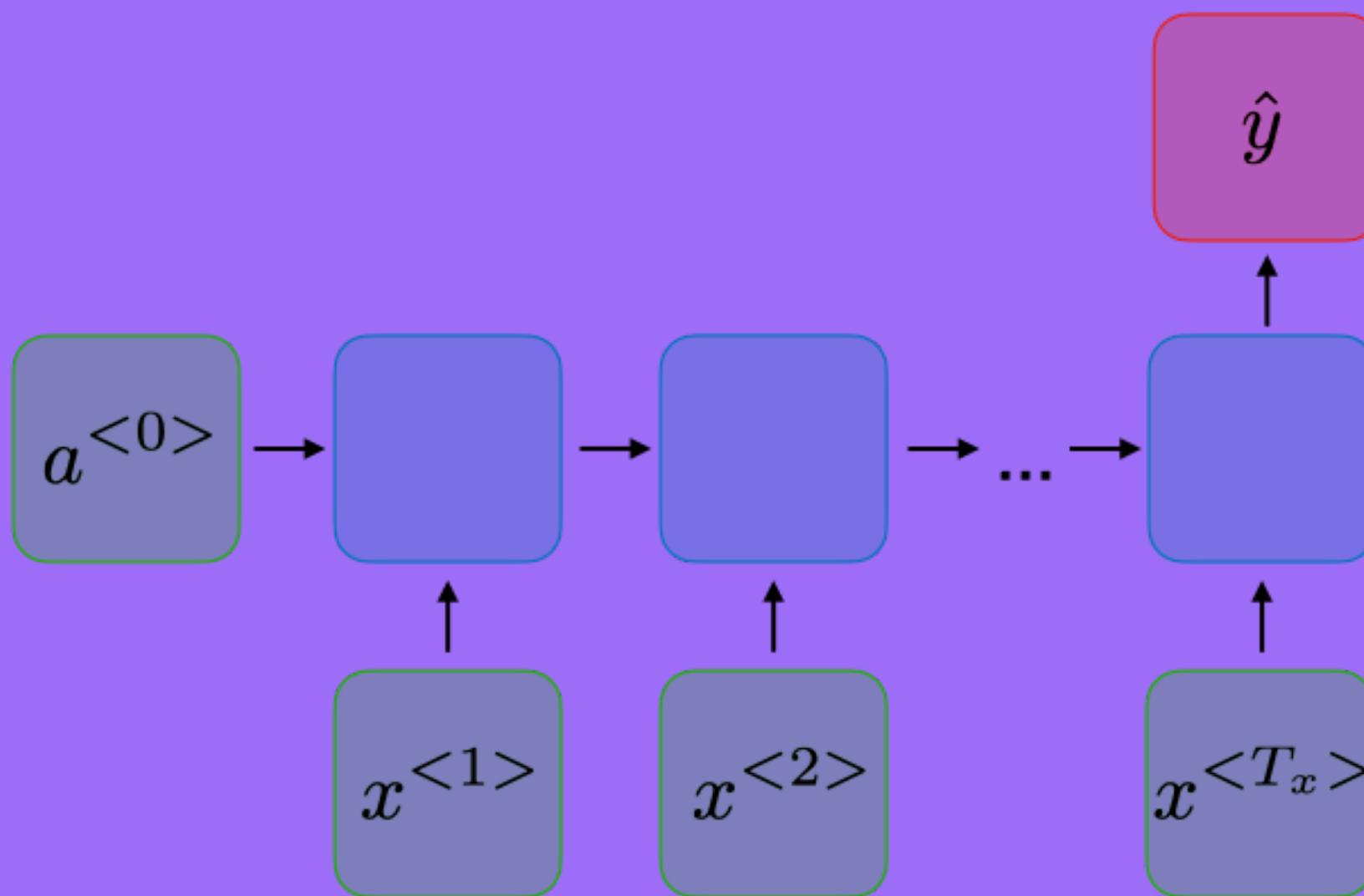
As technology becomes more and more accessible to people of various origins and age ranges, content filtration becomes an important step in hosting

# THEORY



An overview of the prerequisite knowledge for  
this project

# Classification and filtering model



## RECURRENT NEURAL NETWORK

We have used a unidirectional sequence model to implement our algorithm. This model inputs the encoded sentences word by word and returns one output representing whether the comment is positive or negative

## LONG SHORT TERM MEMORY

We use an LSTM cell to counter the problem of having to analyze long comments using our algorithm. This cell helps the network remember content further behind in the sentence in later stages

## DISCRETE EVENT SIMULATION

Discrete Event simulation concerns the modeling of a system as it evolves over time by a representation in which the state variables change at discrete points in time.

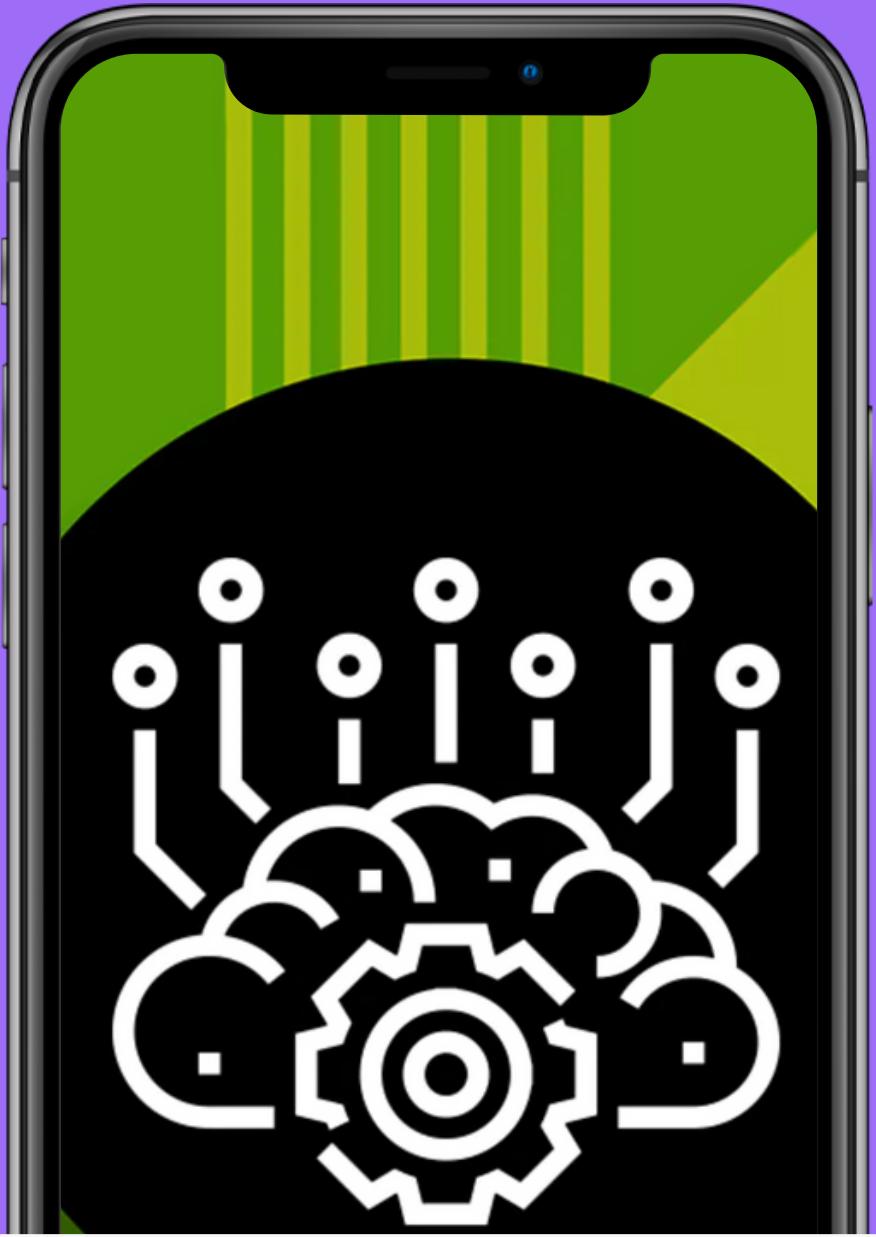
## NEXT-EVENT TIME ADVANCE MECHANISM

In this mechanism, a track of the current value of simulated time as the simulation proceeds is kept and also a mechanism to advance simulated time from one value to another is required.

# Single Server Queuing System

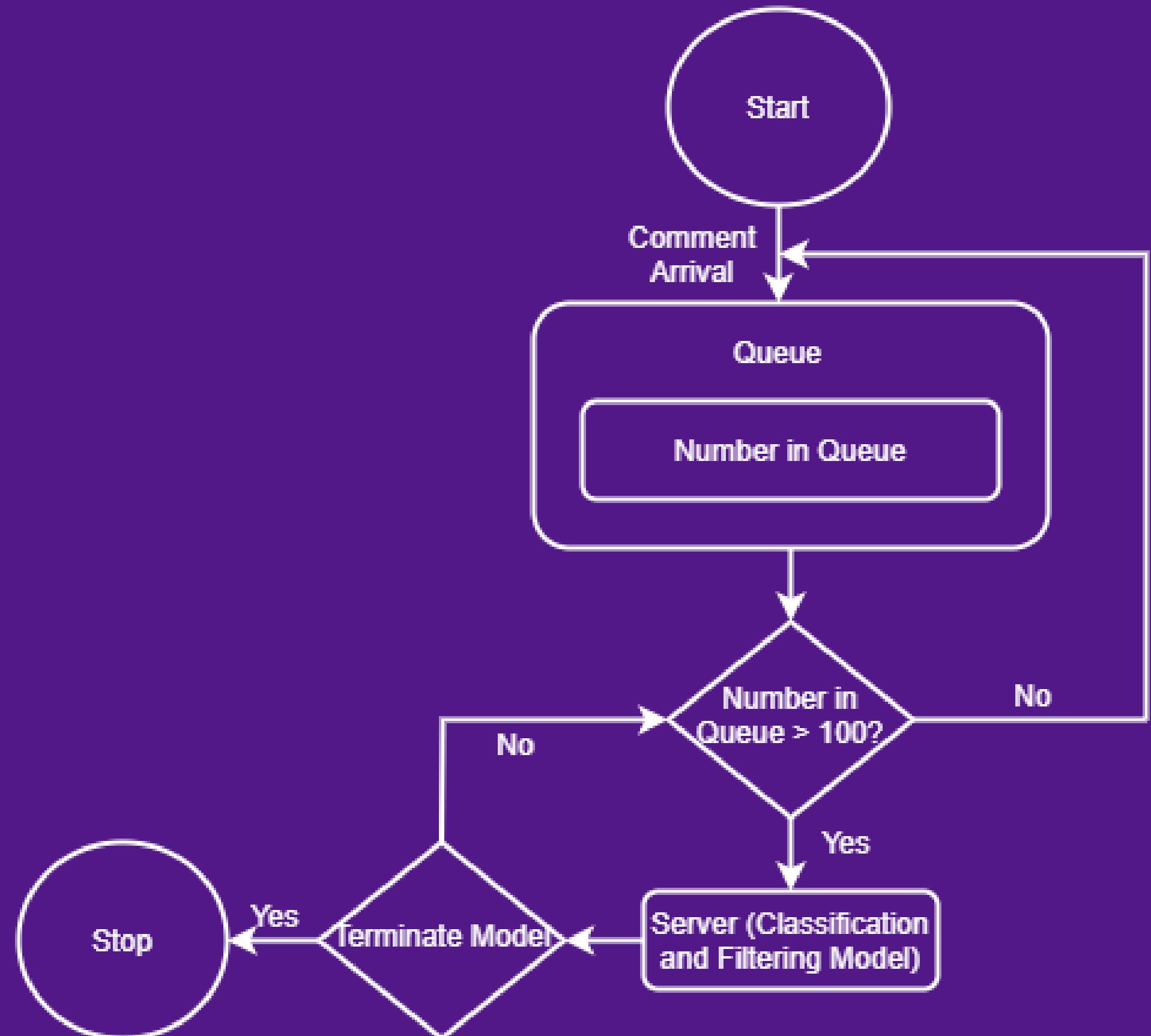


# SIMULATION STEPS



Detailed stepwise procedure

# OVERALL MODEL

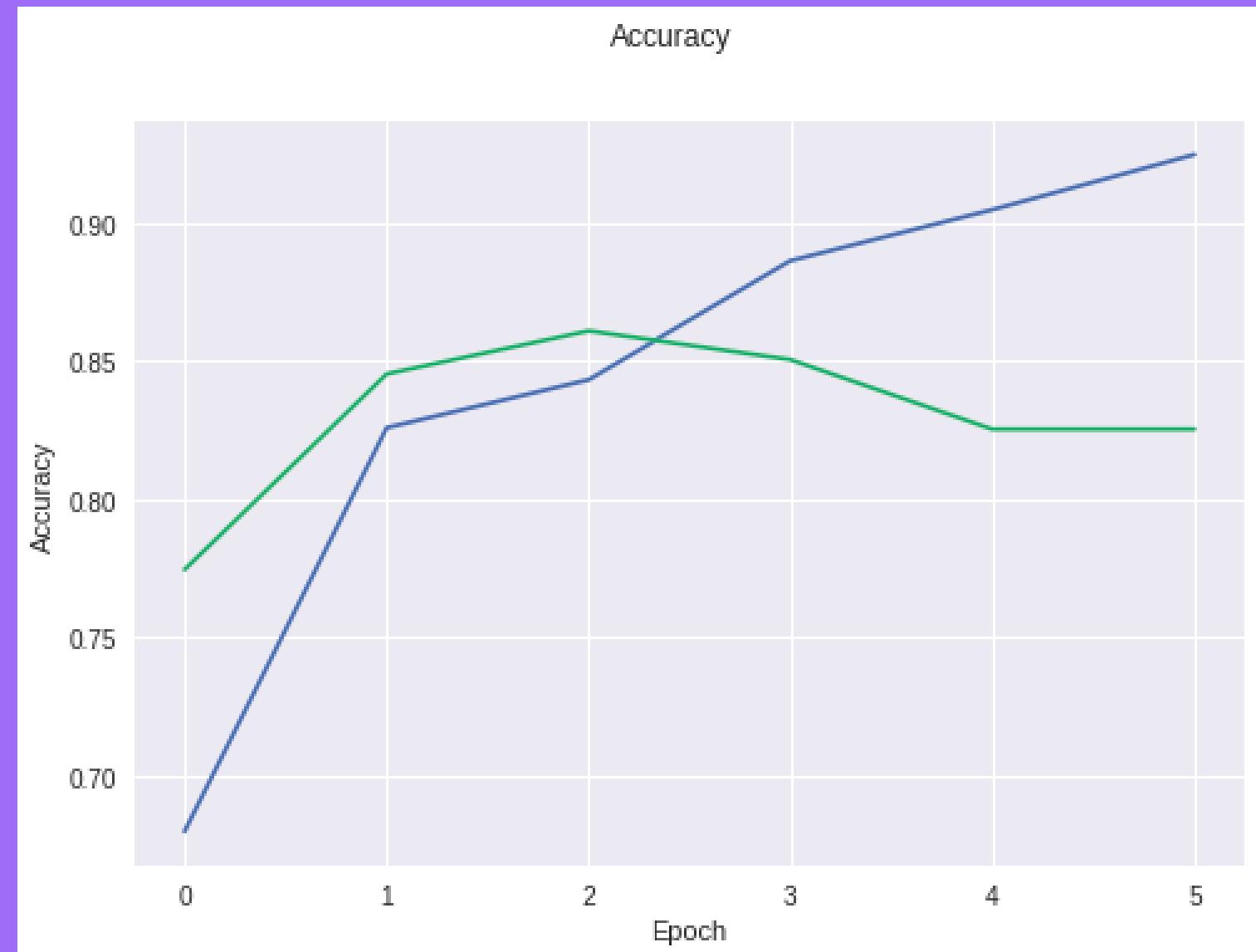




# Results and Conclusion

Our overall model has good performance in the classification and filtering task and also it can handle a very heavy traffic of comment arrival.

# NEURAL NETWORK

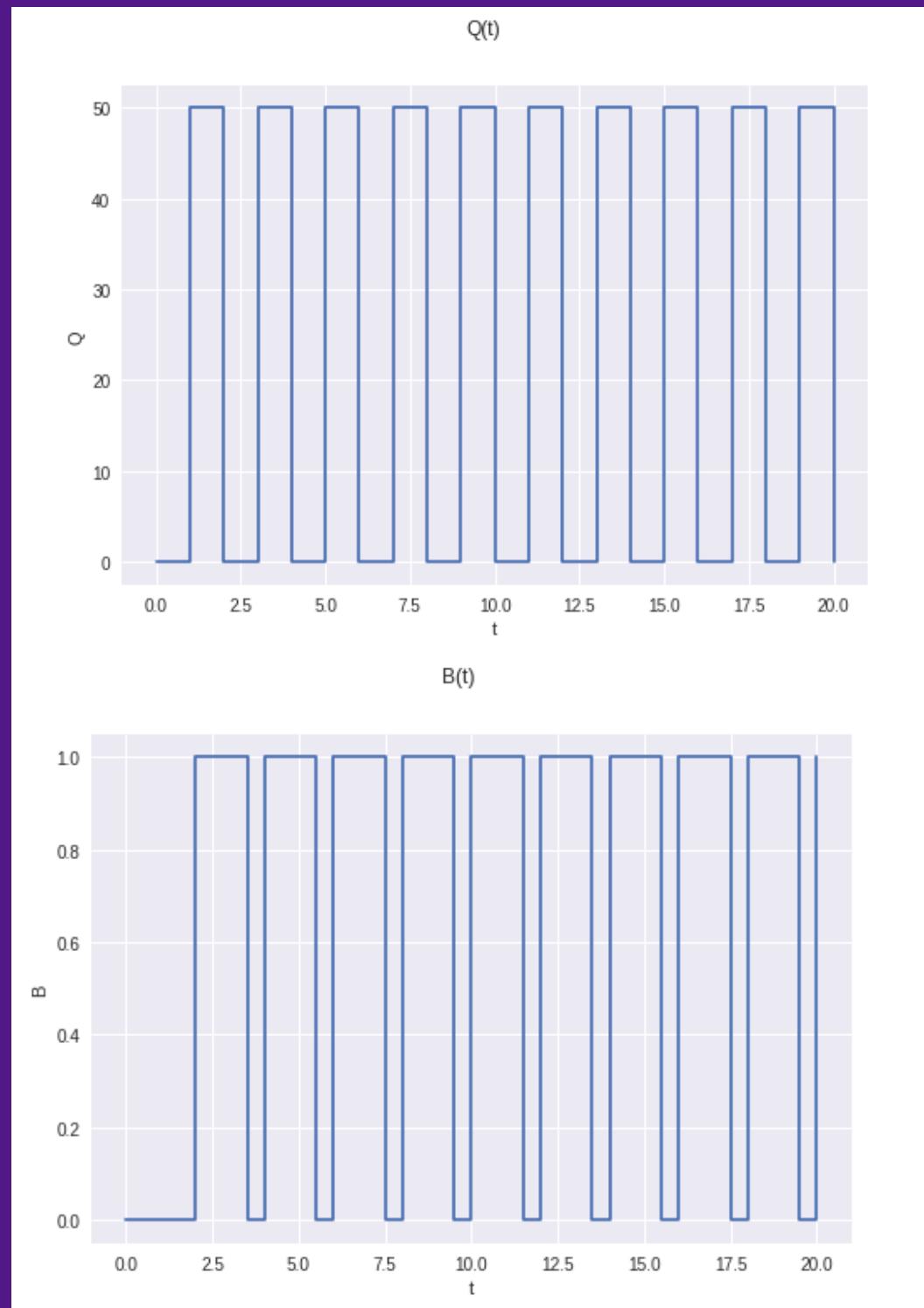


Our LSTM model obtained a training accuracy of 92.46% with 25000 samples

Our testing accuracy on a testing data of 25000 samples is 83.18%

The model stopped training after 6 epochs due to Early Stopping regularization.

# SERVER SYSTEM



The expected average delay of server is 0.5s for a scenario in which it receives 50 comments/sec.

The expected average number in queue is 0.5s

The expected utilization of server is 0.675

# MEET OUR TEAM



Anshuman Raj  
Chauhan



Aman Mahendroo

# THANK YOU

Aman Mahendroo - 2K19/CO/048

Anshuman Raj Chauhan - 2K19/CO/067

“ Sometimes  
it's the people  
no one imagines  
anything  
of who do  
the things  
that no  
one can  
imagine. ”

Alan Turing

