



# Clickbait Classifier

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# Clickbait Definition

Social media posts that are, at the expense of being informative and objective, designed to entice its readers into clicking an accompanying link

Our project classifies clickbait to combat social media's misleading exploitation of the user

## Man Tries to Hug a Wild Lion, You Won't Believe What Happens Next!

EARTH FORM — 1620 COMMENTS



15 hilarious tweets of stupid people that makes you think 'Do these people even exist?'



**Edviin!**  
@Edviin\_

Man its so crazy that the earth is soon gonna be 2017 years old

RETWEETS  
2

LIKES  
10



9:21 PM - 26 Dec 2016 from Borås, Sverige

# Data Used

Data set of 19538 (4761 clickbait, 14777 not clickbait)

15,000 training 4,538 test [Downloaded Data](#)

## Data Obtained

- Id
- Post Time Stamp
- Post Text
- Target Text
- Target Description
- Target Keywords
- Target Paragraphs
- Target Captions



# Comparing approaches

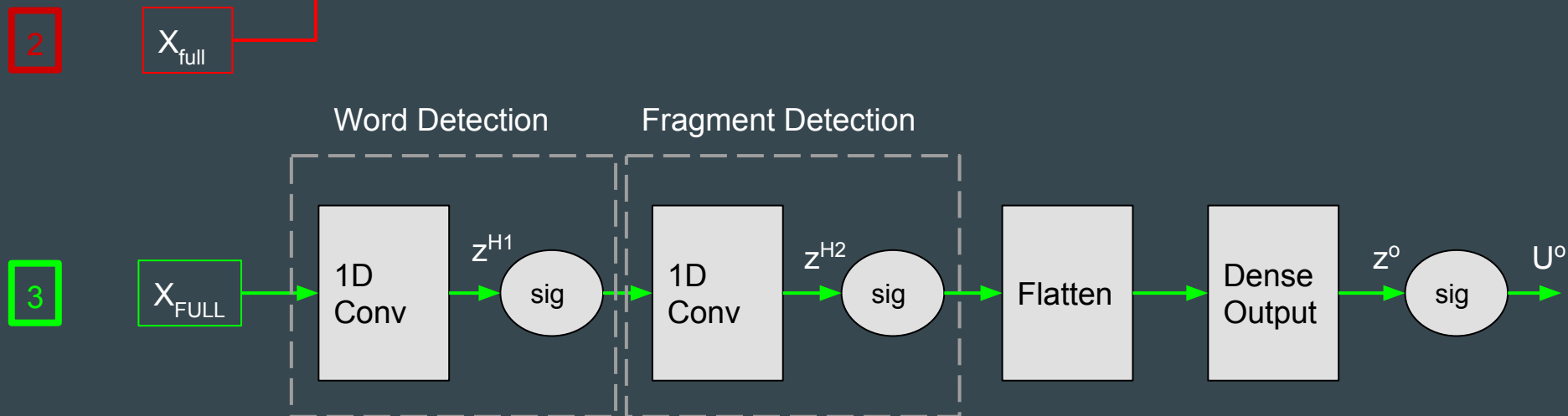
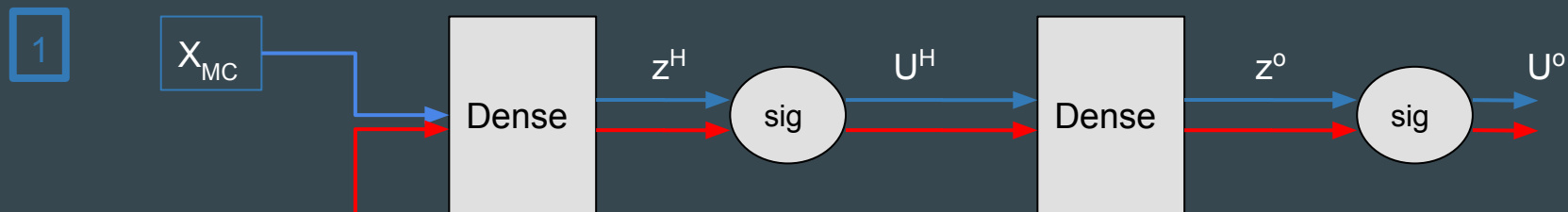
## $X_{MC}$ Approach

- Define features
  - Number of words in title
  - Number of words in body text
  - If title is a question
  - Number of questions in title
  - Number of bait words
  - Bait word score of title
  - Number of context words in title
  - Context word score of title
  - Number of context words in body text
  - Context word score of body text
  - Pronoun score of title
  - Number of pronouns in title
  - Pronoun score of body text
  - Twitter handle in body text
  - If numbers are in title
  - Number of sentences in paragraph

## $X_{Full}$ & $X_{FULL}$ Text Processing Approach

- Assigns a numeric value to every character
- Run through a neural network
- Identify patterns
- Normalize all values in  $X_{FULL}$  between -1 to 1

# Approach



# Shift Variant vs Invariant

Consider 2 sentence fragments:

**You won't believe what happens next!**

**What happens next, you won't believe!**

Shift Variant System (Dense layer):

- Picks up “won’t believe” in first sentence but not second
- Only able to filter entire sequence for word in one order

Shift Invariant System (Convolutional layer):

- Picks up “won’t believe” in both sentences
- Treats sentence as a sequence, and is able to filter the entire sentence for a word or phrase

# Results

1

- < 60% training and test accuracy
- Necessary for deeper set of features

2

- Training Accuracy: 97%
- Test Accuracy: 68%
- Overfitting
- Dense layer weights are not shift invariant
- Large local minima at 76.34% training accuracy that optimizer must overcome

3

- More time required to fully explore options (number of filters, kernel size, etc.)
- Shows promise in theory, and in basic fitting done overnight
- 1D Convolution is shift invariant

# Resources

- [Text Processing Techniques Used](#)
- [Keras Documentation](#)
- [Data and Challenge](#)
- [Our Code](#)