



Study on IDS Based Fake Content Detection on Social Network Using Bloom Filtering

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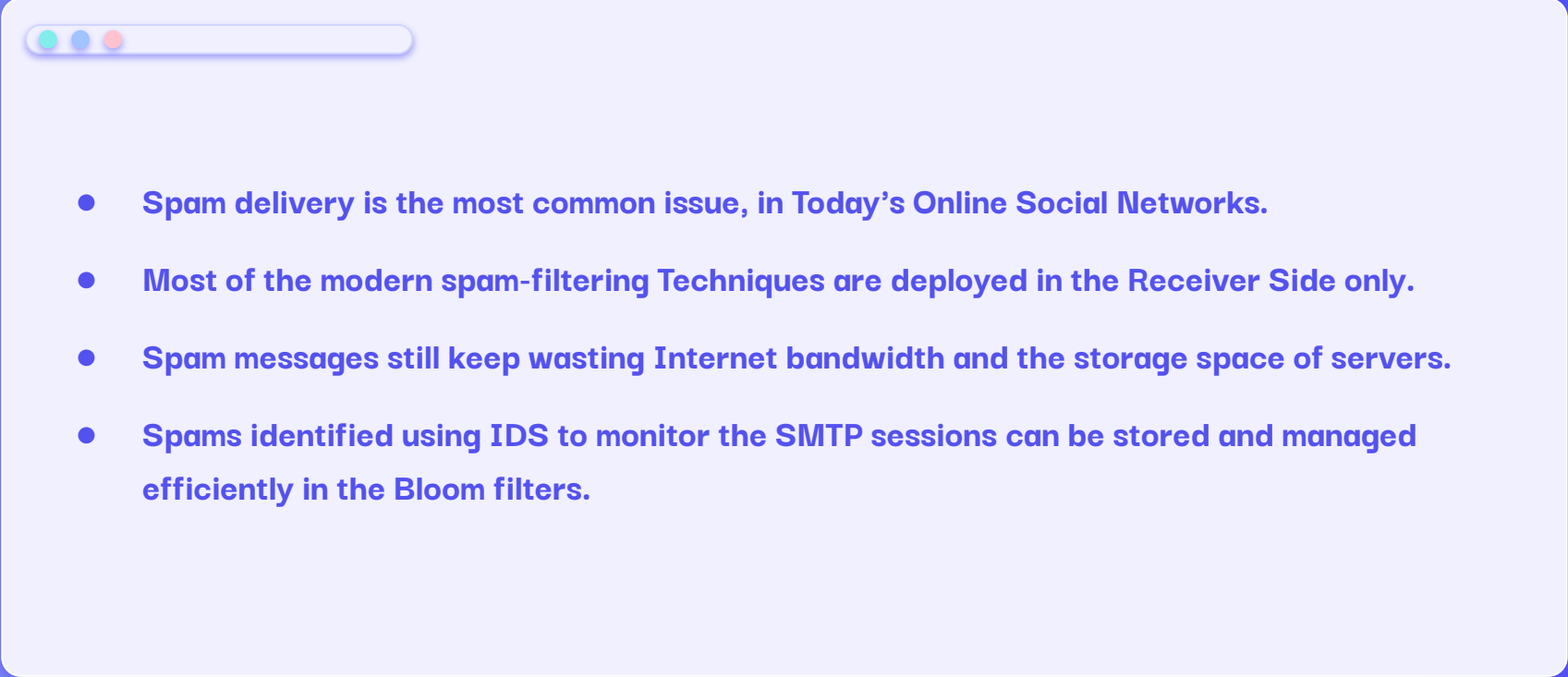
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INTRODUCTION

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- **Spam delivery is the most common issue, in Today's Online Social Networks.**
 - **Most of the modern spam-filtering Techniques are deployed in the Receiver Side only.**
 - **Spam messages still keep wasting Internet bandwidth and the storage space of servers.**
 - **Spams identified using IDS to monitor the SMTP sessions can be stored and managed efficiently in the Bloom filters.**

BLOOM FILTER

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- What is Bloom filter ?
 - Price for efficiency - False Positive results.
 - What is False positive ?

PROPERTIES OF BLOOM FILTER



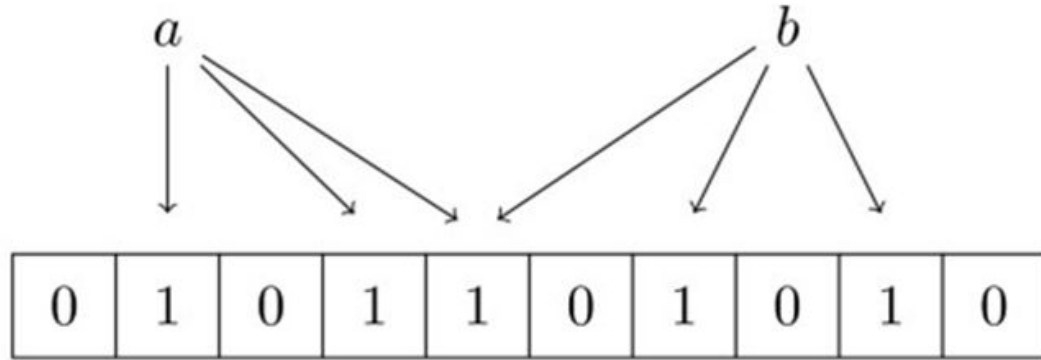
- Bloom filter of a fixed size can represent a set with an arbitrarily large number of elements.
- Adding an element never fails.
- Bloom filters never generate false negative result
- Deleting elements from filter is not possible because.

SPACE EFFICIENCY

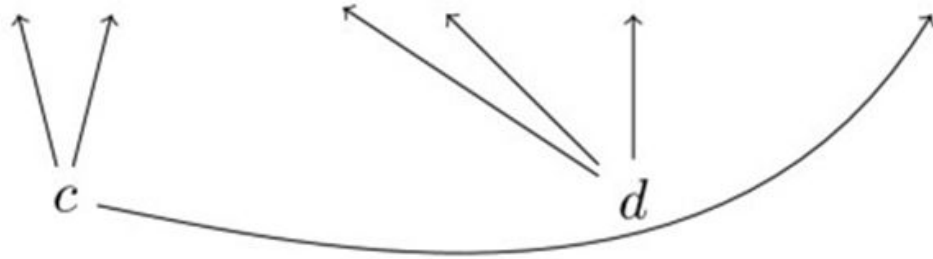
- Large list of items in a set for purpose of set membership can be stored in hashmap, tries or simple array or linked list.
- All these methods require storing item itself
- Eg of above methods
- Bloom filters do not store the data item at all.

BLOOM FILTER ALGORITHM

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BLOOM FILTER ALGORITHM

Algorithm 1 Bloom filter k -mer counting algorithm

```
1:  $B \leftarrow$  empty Bloom filter of size  $m$ 
2:  $T \leftarrow$  hash table
3: for all reads  $s$  do
4:   for all  $k$ -mers  $x$  in  $s$  do
5:      $x_{rep} \leftarrow \min(x, \text{revcomp}(x))$  //  $x_{rep}$  is the canonical  $k$ -mer for  $x$ 
6:     if  $x_{rep} \in B$  then
7:       if  $x_{rep} \notin T$  then
8:          $T[x_{rep}] \leftarrow 0$ 
9:       else
10:        add  $x_{rep}$  to  $B$ 
11: for all reads  $s$  do
12:   for all  $k$ -mers  $x$  in  $s$  do
13:      $x_{rep} \leftarrow \min(x, \text{revcomp}(x))$ 
14:     if  $x_{rep} \in T$  then
15:        $T[x_{rep}] \leftarrow T[x_{rep}] + 1$ 
16: for all  $x \in T$  do
17:   if  $T[x] = 1$  then
18:     remove  $x$  from  $T$ 
```

INTRUSION DETECTION SYSTEM



- **Intrusion detection system distinguishes vindictive traffic on a system.**
- **It needs stable system access to break down all the traffic happened while information transmission.**
- **Any malignant movement or infringement is commonly revealed or gathered midway utilizing a security data and occasion the executives framework.**
- **IDS attempts to recognize malevolent movement.**

INTRUSION DETECTION SYSTEM

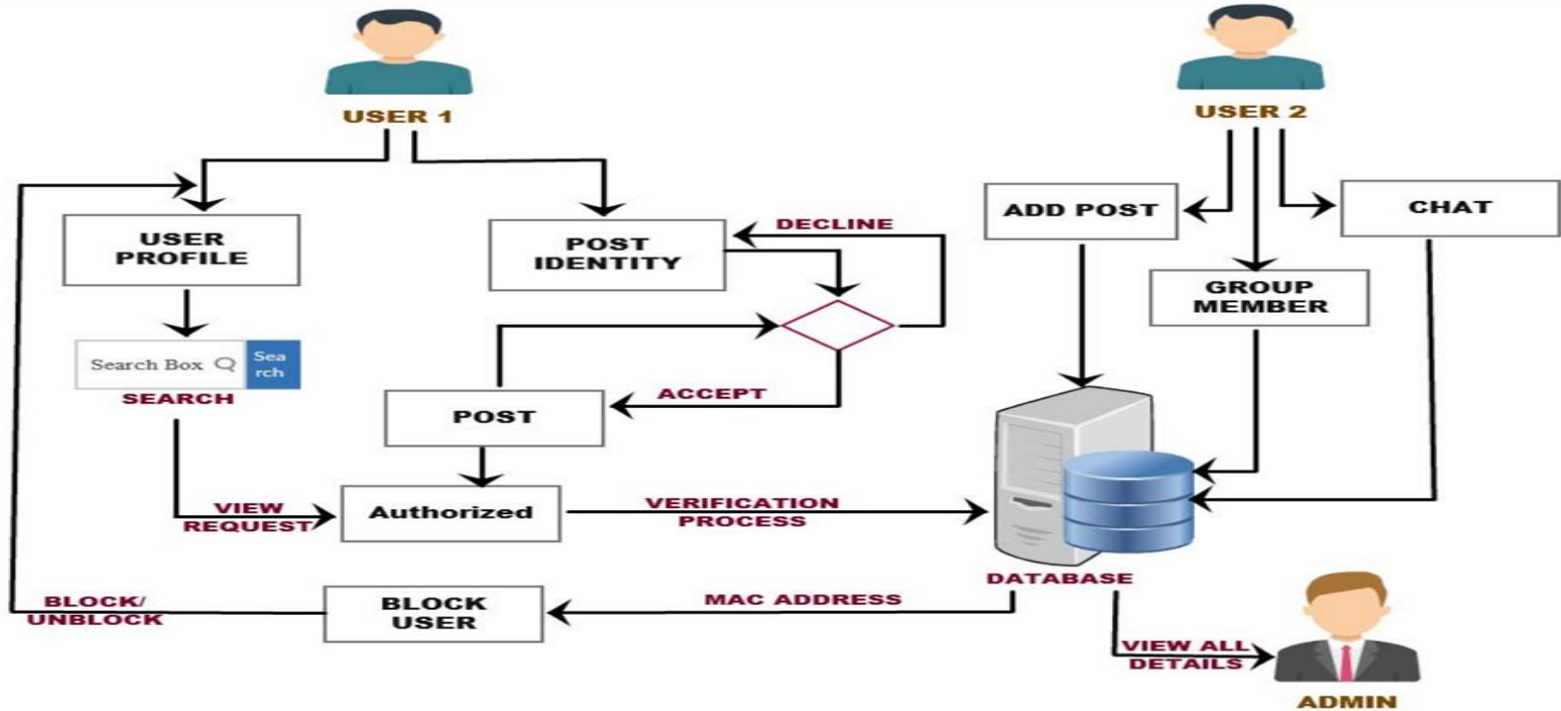


- **Intrusion Detection System functions provided to security professionals**
- **Intrusion Detection System can enable the undertaking to accomplish administrative consistence.**
- **Intrusion Detection System can improve security reaction.**
- **Utilizing an IDS to gather this data can be considerably more productive that manual censuses of associated frameworks.**

SPAMMING BOTNETS

- What is Botnet ?
- Contaminated gadgets - controlled remotely by cybercriminal
- Uses of Botnets
- What botnet malware does
- Goal of Botnet


ARCHITECTURE DIAGRAM



MODULES

- The following are the main 6 modules implemented -
 - Registration & Login
 - TimeLine Add
 - Friend Request
 - Profile Matching
 - Secure Profile View
 - Group Actions

CONCLUSION

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- There were many spam filtering techniques introduced with specific functionality constraints.
 - Using Bloom Filter algorithm, improve the usage of internet bandwidth and memory efficiency through reducing huge number of encrypted spams in the SMTP Sessions by tracking the number of unique users or botnets.
 - It will reduce the network traffic and creates smooth way of data transmission between the users.

REFERENCES

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