A Detailed Study Phishing Sites via Site Deconstruction & Clustering Techniques

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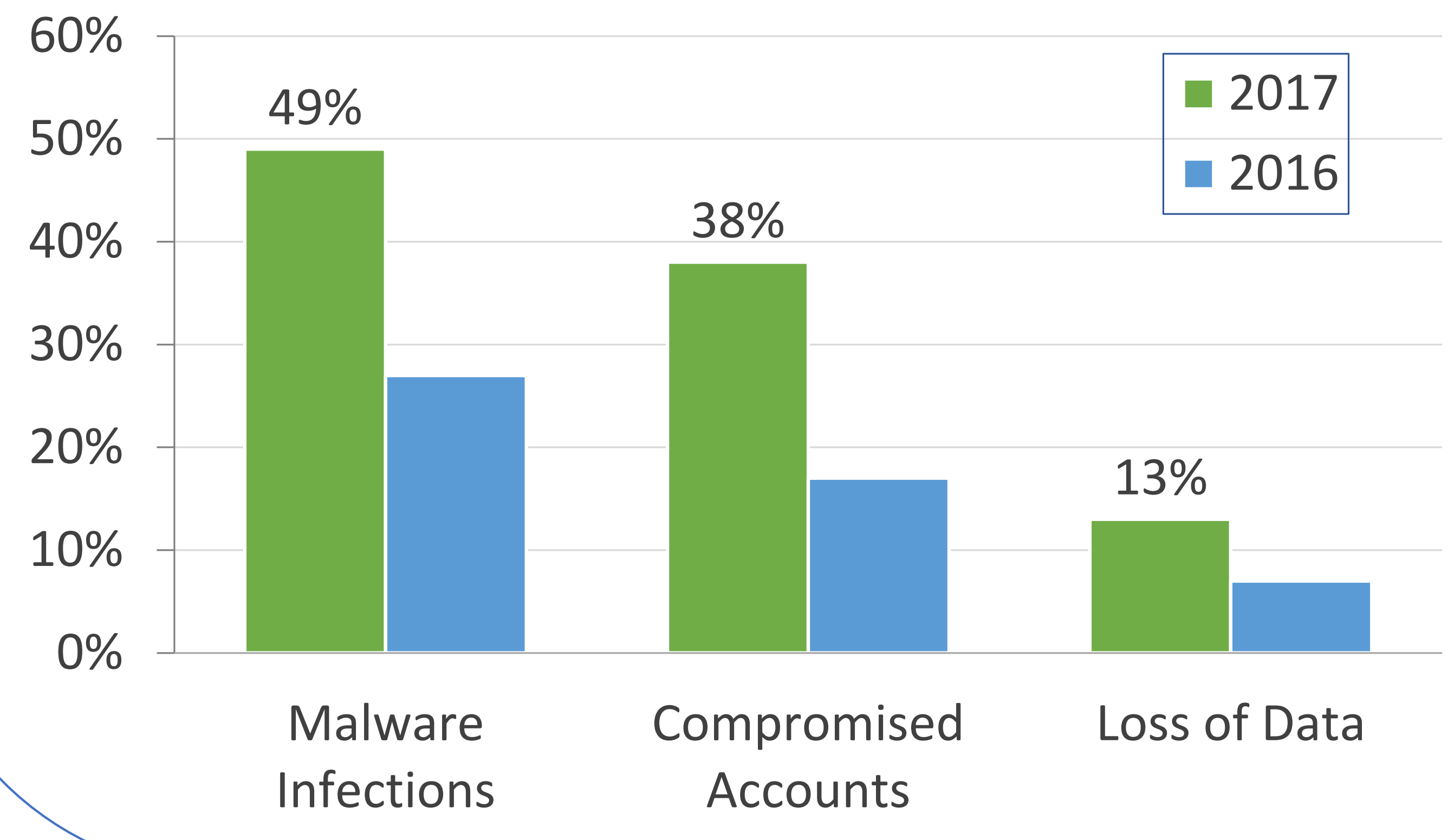
Abstract

Phishing is the top threat vector for cyberattacks. Our system gathers in-depth information of the phishing sites and aims to answer the following questions hoping it might lead to curb the growth of phishing attacks at a greater rate.

- What information is gathered by an attacker?
- What kind of approaches are used in phishing?
- Is there a relation between different phishing sites?
- Which parameters can be used to distinguish a phishing site from a legitimate site?

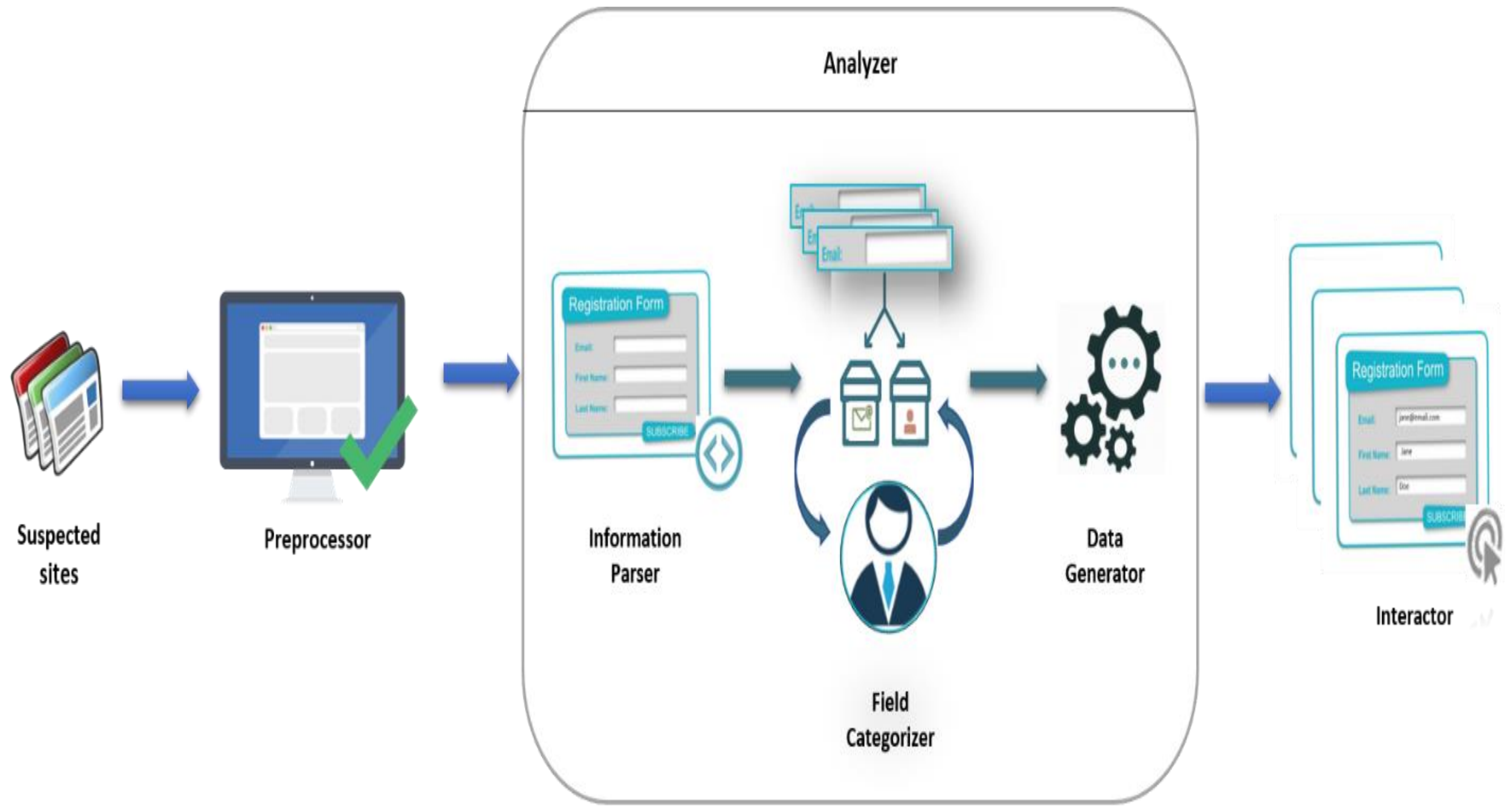
Introduction

Phishing is the attempt to obtain sensitive information by disguising as a trustworthy entity. Phishing attacks are on the rise over past few years.



System Overview

Our system consists of 3 major components that successfully help it to traverse through multiple pages of a phishing site. We obtain suspicious URLs from the PhishTank repository.



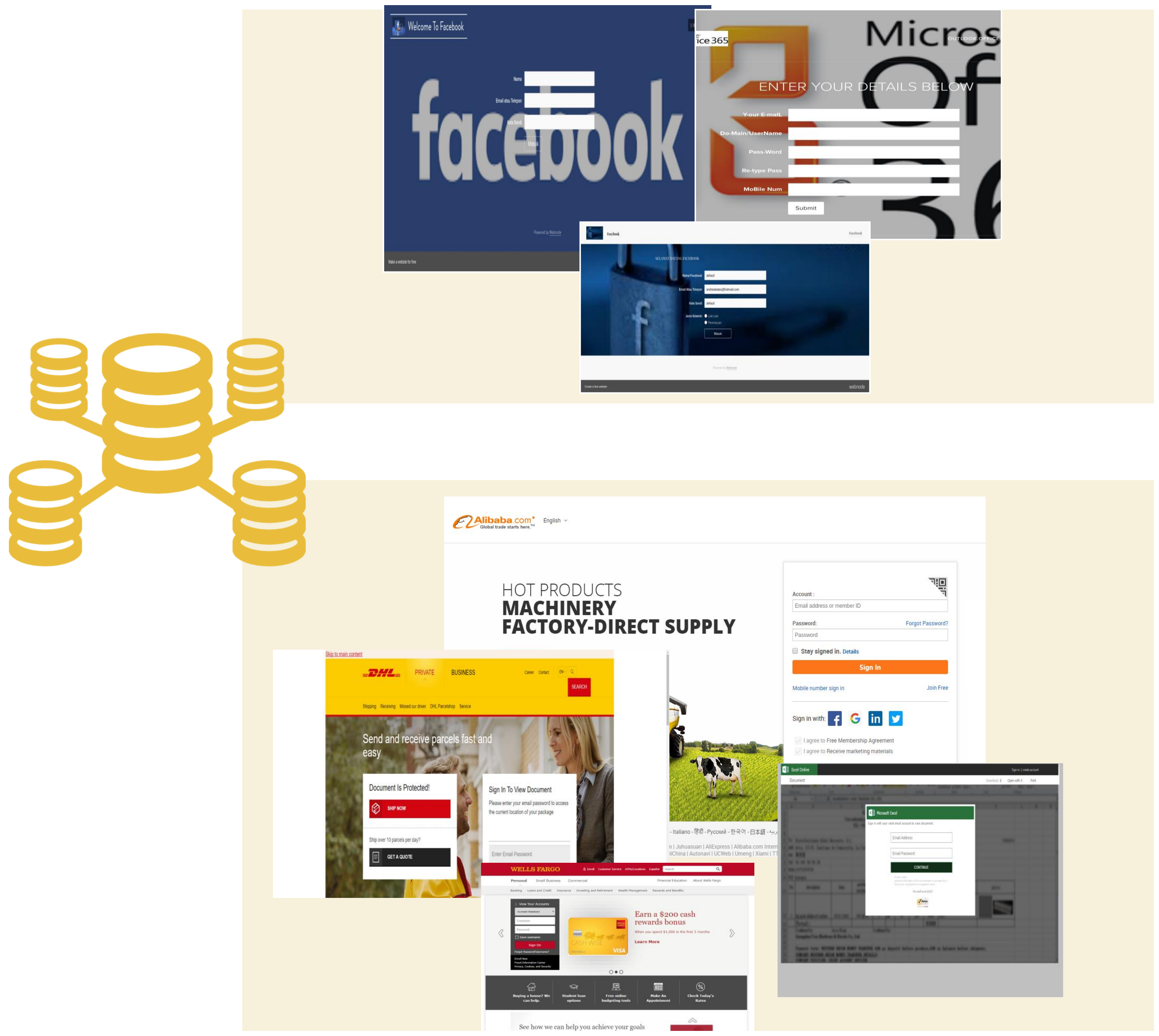
Clustering & Classification

The different techniques used to process the data and the results obtained are as follows

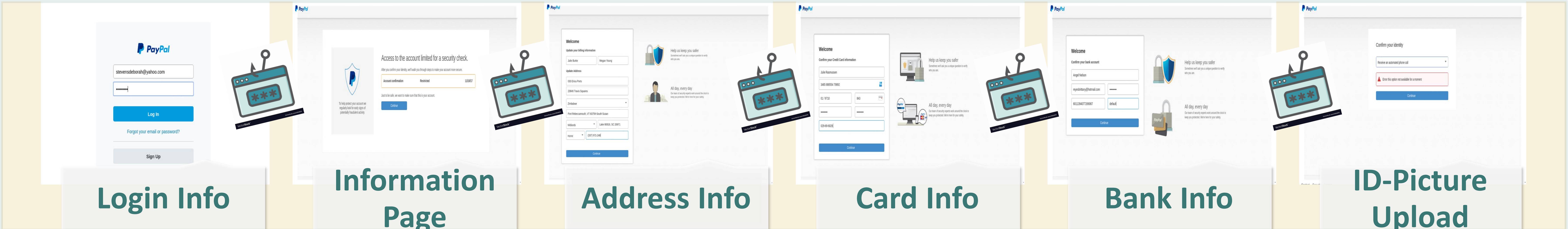
- Classification of input fields with Active Learning
- Hierarchical Clustering for clustering similar phishing sites
- Distinguish benign sites from phishing sites
- Phishing kits created by same developer
- Distribution of the phishing kits

Experiments & Results

- We were able to traverse through multiple pages in most of the sites
- We learnt most sites navigate users to targeted benign sites after stealing credentials from the user
- We were able to cluster sites targeting different domains sharing same properties in their design structure and resource requests



Network Security Intelligence and LAB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