

**Asia Pacific College**

**School of Computing and Information Technology**

**Magallanes, Makati City**

**IDENTIFYING FAKE NEWS IN FACEBOOK**

**Project Documentation Submitted**

**To the Faculty of School of**

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# Abstract

This document circles around fake news on the internet. Defining what fake news really is and how us people should deal with it whenever we get to encounter them on the internet, most likely in the social media. In this research the researchers will identify fake news and differentiate it from authentic news in Facebook. The researchers will also discuss the effects of it in our daily lives and in our society. Considering that there’s a lot of various ways on identifying fake news, this document will be providing conclusions and recommendations that we could follow on identifying fake news.

KEYWORDS: Facebook, Fake news, identifying

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# Introduction

## **Project Context**

Fake news is a deliberate misinformation or hoax that spreads via traditional print, broadcast news media or online social media (Novotny, 2017). It misleads people and make the world less informed. It harms the community and the industry in an alarming level(citation)[examples].

With the way on how fake news is spreading, it would be ideal to have application that help identify fake news.

## **Purpose and Description**

The main purpose of this project is to prevent

The proponents will be using Support vector machine algorithm for classifying. Support Vector Machine is a supervised machine learning algorithm for classification or regression problems where the dataset teaches SVM about the classes so that SVM can classify any new data. It works by classifying the data into different classes by finding a line (hyperplane) which separates the training data set into classes. As there are many such linear hyperplanes, SVM algorithm tries to maximize the distance between the various classes that are involved and this is referred as margin maximization. If the line that maximizes the distance between the classes is identified, the probability to generalize well to unseen data is increased.

## **Objectives**

The objectives of this study is:

1. To create a classification model that determine whether a link leads to a fake news article or not.
2. To use SMV (Support Vector Machine) algorithm to classify the post whether it is fake or not.

## **Scope and Limitations**

The study focuses on identifying fake news in Facebook using SMV algorithm. This study will cover Facebook and fake news links.

# Review of Related Literature

In this chapter, the researchers will be presenting an articles and related readings about this study. Moreover, this chapter proposes about fake news and how fake news affects people that give them false information.

**Fake News**

Fake news, a term initially coined by the news media to describe stories on the internet posted by websites of questionable integrity. The term has since been turned back on the media, some people in America including Donald Trump he charges accusations of the fake news against the likes of CNN, the New York Times, and others. We now have a constant back and forth in the public sphere: the media accuses online outlets of being fake, and politicians, in turn, accuse the media of being fake. Fake news had affected many people (Ordway, 2017).

Fake News is circulated largely through social media. Based on web browsing data, archives of fact-checking websites, and results from a new online survey, in 2016 election, there are many fake news appeared in the three months before the election, those favoring Trump were shared a total of 30 million times on Facebook, while those favoring Clinton were shared 8 million times; the average American adult saw on the order of one or maybe several fake news stories in the months around the election, with just over half of those who remembered seeing them believing them; and people are much more likely to believe stories that favor their preferred candidate, especially if they have social media networks (Alcott, 2017). These reviews are one of the examples of how fake news affects people.

**Identifying Fake News using classifier**

According to Conroy et al. (2015), classifiers are useful for automated numerical analysis. One common example of classifiers is Support Vector Machines (SVM). It shown high accuracy results in classification. It provides a basis for the design of a comprehensive fake news detection tool. Using classifier the accuracy which measures the number of articles correctly classified as real or fake.

# Technical Background

**Theoretical Framework**

**Support Vector Machine**

Support vector machine are good at solving problems. It is used computational biology due to their high accuracy, the ability to deal with large datasets, and the flexibility in modeling different sources of data. These are controlled learning models used for analyzing data and for its classification and regression analysis using sorting algorithms. Support vector machines use its ability to create forecasts based of the given set of data (Ben-Hur et al., 2008). It is also used for specific tasks such as classification of data and analysis. SVM used for sentiment analysis of opinion mining is directly focused on two things: classifying and forecasting. The support vector machine will be able to identify new inputs to the model and then designate each input to its rightful category just as how it processes previous ones. The application of SVM ranges from text categorization, image segmentation, hand-written character recognition (Jadav et al., 2016). The researchers will use SVM to identify fake news and real news in Facebook and it will prove its accuracy.

**Conceptual Framework**



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# Design and Methodology

# Conclusions

Fake news can be lessened or better yet eliminated, since people keep falling prey for such posts; it needs to be stopped. This paper is meant to do just that; the program we are proposing is meant to detect if the news posted in your social media websites, which would literally get marked as a fake if it is one. This program will be a plugin for the users’ internet browsers, but will only work for Facebook, and will not detect if posted news are fake from other websites. If this program could be implemented, there will definitely be a big change in how news would be spread, since users will no longer fall for faulty news articles and posts.

# Appendices

The steps to perform data classification using Support Vector Machine algorithm are as

follows:

Step1: Define a set of n data points in an array say

X= array([[x11, x21], [x12, x22], ....... [x1n, x2n]])

Step2: Define class of each data point in a vector of list type say Y = [-1, -1, -1 .....1, 1, 1]

Step3: **F**it the SVM model using the statements

clf = svm.SVC(kernel='linear') and clf.fit(X, Y)

Step4: Get the separating hyperplane xx as x1 coordinates anf yy as x2 coordinates

w = clf.coef\_[0]

a = -w[0]/w[1]

xx = np.linspace(-1, 8, 10, 1)

yy = a\*xx - (clf.intercept\_[0])/w[1]

Step5: Get the parallels to the separating hyperplane that pass through the support vectors

b = clf.support\_vectors\_[0]

yy\_down = a\*xx + (b[1] - a\*b[0]) (positive support plane)

b = clf.support\_vectors\_[-1]

yy\_up = a\*xx + (b[1] - a\*b[0]) (negative support plane)

Step6: Plot the line, the points, and the nearest vectors to the plane using appropriate python commands

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