Apparatus And Method For Determining A Location-Spoofing Application

Technical Field

[0001] The present invention relates generally to an apparatus and a method for determining a location-spoofing application.

Background

[0002] Global Positioning System (GPS) spoofing is a major problem to ride-hailing organizations and service providers as drivers are able to spoof their GPS information to get better allocation or to fake a completion of rides and leads to a loss of trust for ride-hailing organizations in the mind of passengers as well as drivers.

[0003] To spoof their GPO information, drivers usually use applications developed by third party developers for this specific purpose. Therefore, it becomes imperative to identify or keep a tab on such applications and determine a location-spoofing application to address the above issues.

Summary

[0004] According to a first aspect, the present disclosure provides an apparatus for determining a location-spoofing application, the apparatus comprising: at least one processor; and at least one memory including computer program code: the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to: generate a numeric representation of an application name of an application used for generating a geolocation position signal of a user using a variable derived from a list of application names relating to a plurality of other applications capable of generating a geolocation position signal of a user; and determine a prediction on whether the application is a location-spoofing application based on a scale of the generated numeric representation of the application name.

[0005] According to a second aspect, the present disclosure provides a method for determining a location-spoofing application, the method comprising: generating, by a prediction module of a location-spoofing application determination system, a numeric representation of an application name of an application used for generating a geolocation position signal of a user using a variable derived, by the prediction module, from a list of application names relating to a plurality of other applications capable of generating a geolocation position signal of a user; and determining, by

the prediction module, a prediction on whether the application is a location-spoofing application based on a scale of the generated numeric representation of the application name.

CLAIMS

1. An apparatus for determining a location-spoofing application, the apparatus comprising:

at least one processor; and

at least one memory including computer program code:

the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to:

generate a numeric representation of an application name of an application used for generating a geolocation position signal of a user using a variable derived from a list of application names relating to a plurality of other applications capable of generating a geolocation position signal of a user; and

determine a prediction on whether the application is a location-spoofing application based on a scale of the generated numeric representation of the application name.

2. The apparatus according to claim 1, wherein the at least one memory and the computer program code is further configured with the at least one processor to, at every fixed time interval:

extract the list of application names relating to the plurality of other applications stored in a database;

modify the variable;

generate a numeric representation of each of the list of application names relating to the plurality of other applications using the modified variable; and

determine the each of the list of application names is a location-spoofing application based on a scale of the numeric representation of the each for the list of application names.

3. The apparatus according to claim 1, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

generate a numeric representation of a character of the application name of the application using the variable derived from the list of application names relating to the plurality of other applications, wherein the numeric representation of the application name is generated based on the numeric representation of the character of the application name.

4. The apparatus according to claim 3, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

generate a numeric representation of a character combination of the character and one or more characters of the application name prior to and/or following the character using the variable derived from the list of application names relating to the plurality of other application; and wherein

the numeric representation of the application name is generated further based on the numeric representation of the character combination.

5. The apparatus according to any one of preceding claims, wherein, when processing one or more characters, the at least one memory and the computer program code is configured with the at least one processor to:

identify a pre-set numeric representation of the one or more characters; and

apply the variable derived from the list of application names relating to the plurality of other applications to the pre-set numeric representation of the one or more characters to generate a numeric representation of the one or more character(s)

6. The apparatus according to any one of preceding claims, the at least one memory and the computer program code is configured with the at least one processor to:

receive a plurality of application names corresponding to a plurality of applications used by one or more users within a time period for generating a geolocation position signal, wherein the plurality of application comprises the application and the plurality of other applications.

7. The apparatus according to claim 6, wherein at least one memory and the computer program code is configured with the at least one processor to:

compare each of the plurality of received application names against a list of application names stored in a database, wherein the list of application names corresponds to a list of location-spoofing applications, and each of the list of location-spoofing applications is either disallowed from being used for generating a geolocation position signal of a user or allowed from being used for generating a geolocation position signal of a user with a number of users less than a pre-configured number of users;

determine if one of the plurality of received application names matches one of the list of application name corresponding to the list of location-spoofing applications; and

generate the list of application names relating to the plurality of other applications to comprise the one of the plurality of received application names in response to the determination.

8. A method for determining a location-spoofing application, the method comprising:

generating, by a prediction module of a location-spoofing application determination system, a numeric representation of an application name of an application used for generating a geolocation position signal of a user using a variable derived, by the prediction module, from a list of application names relating to a plurality of other applications capable of generating a geolocation position signal of a user; and

determining, by the prediction module, a prediction on whether the application is a location-spoofing application based on a scale of the generated numeric representation of the application name.

9. The method according to claim 8, further comprising, at every fixed time interval:

extracting, by the prediction module, the list of application names relating to the plurality of other applications stored in a database of the location-spoofing application determination system in communication with the prediction module;

modifying, by the prediction module, the variable;

generating, by the prediction module, a numeric representation of each of the list of application names relating to the plurality of other applications using the modified variable; and

determining, by the prediction module, the each of the list of application name is a location-spoofing application based on a scale of the numeric representation of the each for the list of application name.

10. The method according to claim 8, further comprising:

generating, by the prediction module, a numeric representation of a character of the application name of the application using the variable derived from the list of application names relating to the plurality of other applications, wherein the numeric representation of the application name is generated based on the numeric representation of the character of the application name.

11. The method according to claim 10, further comprising:

generating, by the prediction module, a numeric representation of a character combination of the character and one or more characters of the application name prior to and/or following the character using the variable derived from the list of application names relating to the plurality of other application; and wherein the numeric representation of the application name is generated further based on the numeric representation of the character combination.

12. The method according to any one of claims 8 to 11, further comprising:

identifying, by the prediction module, a pre-set numeric representation of the one or more characters preconfigured by the prediction module and stored in a database of the location-spoofing application determination system in communication with the prediction module;

applying, by the prediction module, the variable derived from the list of application names relating to the plurality of other applications to the pre-set numeric representation of the one or more characters to generate a numerical representation of the one or more characters.

13. The method according to any one of claims 8 to 12, further comprising:

receiving, by the prediction module, a plurality of application names corresponding to a plurality of applications used by one or more users within a time period for generating a geolocation position signal, wherein the plurality of application comprises the application and the plurality of other applications.

14. The method according to claim 13, further comprising:

comparing, by the prediction module, each of the plurality of received application names against a list of application names, wherein the list of application names corresponds to a list of location-spoofing applications stored in a database of the location-spoofing application determination system in communication with the prediction module, and each of the list of location-spoofing applications is either disallowed from being used for generating a geolocation position signal of a user or allowed from being used for generating a geolocation position signal of a user with a number of users less than a pre-configured number of users;

determining, by the prediction module, if one of the plurality of received application names matches one of the list of application names corresponding to the list of location-spoofing applications; and

generating, by the prediction module, the list of application names relating to the plurality of other applications to comprise the one of the plurality of received application names in response to the determination.