F-Secure

AI-Based Fake Web Shop Detection

Introduction

- According to our consumer surveys, people don’t know how to spot a legitime online shop
- A use of a fake web shop includes a high risk for financial loss
- Blacklisting of fake web shops don’t work as new shops are created daily and people are scammed to those through social media, etc., campaigns
- Prevalence of fake-shops has been increasing driven by automated tools.

Project Goals

Implement pre-existing AI classification model for fakeshop detection

Reference paper: Real-Time Detection of Fake-Shops through Machine Learning. https://www.researchgate.net/publication/346317401_Real-Time_Detection_of_Fake-Shops_through_Machine_Learning and code: https://github.com/mal2-project/fake-shop-detection_models

F-Secure can supply data (urls with labels fakeshop/legitimate)

Students could:

- Review example paper and implement their methodology using the example code.
- This includes:
  - scraping website HTML
  - data preprocessing
  - modelling methodology
- Compare results to original paper.

Develop an app or browser extension for user validation and sample collection

Options

- An iOS and/or Android app
- A browser extension for PC/Mac

Examples

- https://www.fakeshop.at/en/download/
- https://play.google.com/store/apps/details?id=de.apptitan.mobileapi.llex4f
- https://apps.apple.com/de/app/watchlistat/id1477814765

Technologies

- There is example python code that students can start with: https://github.com/mal2-project/fake-shop-detection_models
- F-Secure can supply data and mentoring for implementing the example paper and associated code.
- We would expect backend development in python and otherwise Android and/or iOS development tools
- All necessary software is open-source and can be run on local machines.

Requirements for the students

- Students should have some background in ML theory, ML implementation (in python) and willingness to learn. This is what makes the project particularly demanding.
- Solid software development level -> building POC app

Legal Issues

Intellectual Property Rights (IPR):

- A. All IPRs to all Results will be transferred to the Client.

Confidentiality:

- A. The client will share some confidential information with the students.

Any other legal issues, e.g. if the default contract template does not cover something that needs to be agreed

Client

- F-Secure is a Finnish and globally operating cybersecurity company. F-Secure designs and offers award-winning security and privacy products and services that help tens of millions of consumers to protect themselves against online threats.

- **F-Secure's representatives**
  - Markku Siikala, business owner
  - Sean Robinson, data science owner
  - Tuuli Lindroos & Marko Komssi, project owners

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Additional Information

- Any other details, if needed.