Who's Fake News?

A Functional and Scale-able User Platform for Automatic Fake News Detection

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Introduction

Information shapes public opinion which shapes public policy, elections, how companies choose to run, health and safety of the public, the stock market/economy, views on minorities and people of other countries, and more. No one is above the harm that can come from misinformation.

Fake News as an area of research is relatively new and so some of the aspects are not very well researched, each aspect is researched separately and not intersectionally with each other, and there is no product for the user to use.

This research aims to create a functional user interface for automatic fake news detection that is accessible and human-centered. The interface would include a scale-able back end framework where the best methods for automatic deception detection can be added. As a whole, we would want this user platform to become a consumer-ready and comprehensive fake news detector that achieves an accuracy of 80% for all different types of topic domains and media and requires infrequent manual retraining as well as being easy to use and accessible.

Contributions

- Created a suite of interfaces for a user to use including a website and a web browser extension.
- Created the website with conversion rate optimization and search engine optimization in mind from the beginning
- Created a back-end framework that allows for machine learning scripts to be easily added to provide functionality for the suite of interfaces
- Create a suite of interfaces that is accessible for a range of different users
- Publicly available documentation and code

Design

Fig. 1: Architecture Design Overview

Fig. 2: Detailed View of User Interface/Data Finding Process
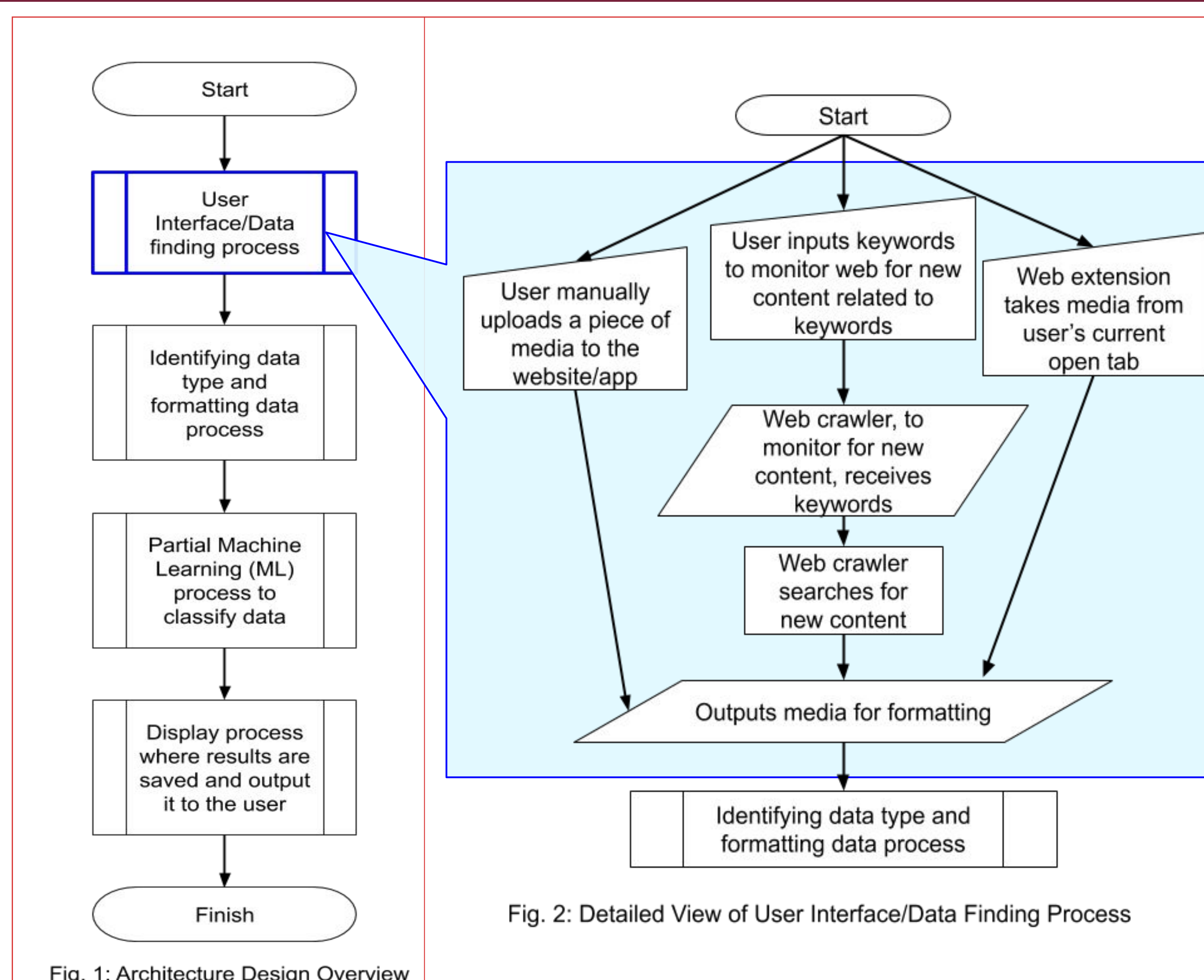
- Fig. 1 shows the four main processes of this design
- Fig. 2 shows a more detailed look at the User Interface/Data Finding process

- In the **Data Finding process** there are three different methods that each require a varying level of effort from the user
  - **Extension** - no effort
  - **News alerts** - little effort
  - **Uploads** - most effort
- **Identifying data type and formatting data process**:
  - Figuring out if it's a phtot, pdf, video, etc.
  - Extract key info like Url, Title, Author, etc.
- **Partial Machine Learning process**:
  - Takes formatted data and matches it to data sets to output a true credibilty result
- **Display process**:
  - The results will be shown to the user in an easy to understand way and notify the user that a result was found if the extension or news alerts were used.

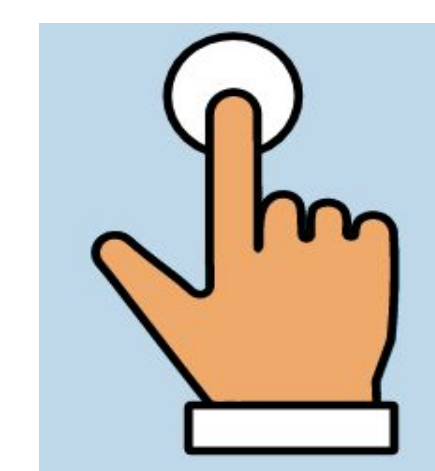## Blueprint for a Human-Centered Safety Net[1]

These are guiding principles that I am using to create my project to make sure it is accessble and human focused.
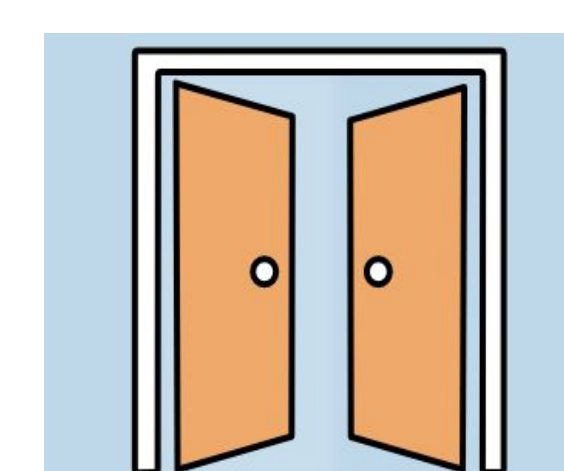
Many Welcoming Doors: Provide an equitable and positive experience both online and in person.

Easy to Understand: Clients should be able to make it through the process with minimal caseworker support.

Simple Actions: Each stage in the enrollment and eligibility process should be able to be completed in as few steps as possible.

Informed Decisions: Clients should clearly understand the implications of all of the actions they have to take throughout the process.
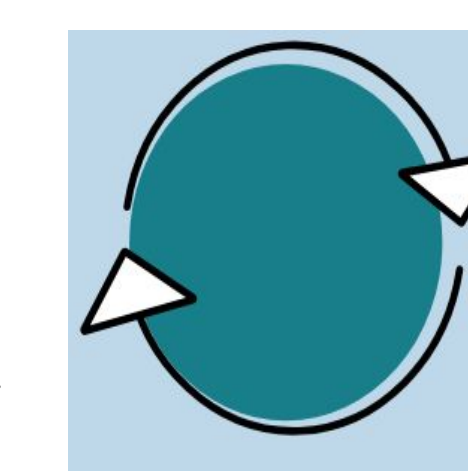
Responsive to Changing Needs: Build things that can change based on clients' needs, as well as shifts in policy and budget.

Results

- Found that published research papers about fake news detection are not reproducible
- Responsive for all devices, intuitive, monospace fonts, clear and large buttons
- The project is still in progress and so more pictures and results are coming soon.
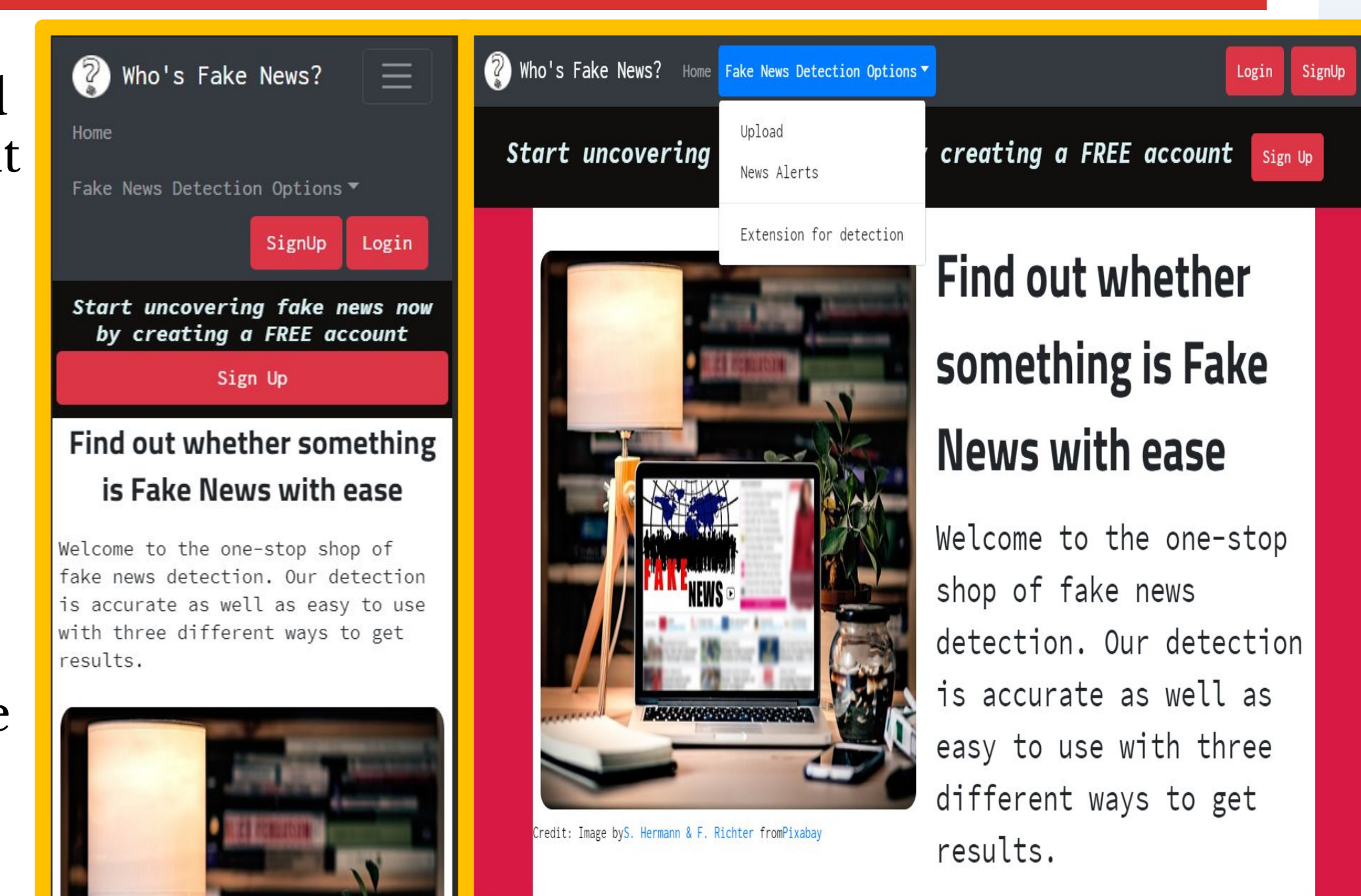
Future Work

- **Create full machine learning backend and formatting process**
  - **Take all types of media of all types of topics,**
  - **Adapt to new information that gets released as time goes on,**
  - **Use a variety of different types of features**
    - **(which are a factors in determining whether something is not credible)**
- **Implement periodically rechecking the database of past checks**
- **Make website and extension space efficient and rely minimally on an internet connection**

References:
1. https://www.codeforamerica.org/safetynetblueprint/

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