

TRUST INDICATORS STATEMENT OF WORK

2024/3/4

PROPOSER: SABRINA CALDWELL

TEAM MEMBERS:

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1. Background

- i** With the widespread use of social media and online digital media, the authenticity of photos and creative images has become a global concern. In this digital age, the extensive dissemination of images and advanced editing techniques make it difficult for ordinary users and consumers to discern the authenticity and credibility of images. Misleading, manipulated, or artificially generated images can lead to inaccurate and confusing information dissemination.

2. Objectives

- i** The project aims to develop a photo repository website with Australia as its theme, aiding consumers in better understanding and evaluating the credibility of images by displaying uploaded image metadata and providing visual cues. The website will be an open-source project, allowing users to upload their own images while adhering to knowledge sharing (CC) license requirements. By collecting image metadata and displaying credibility signals, the website will assist users in identifying and discerning authentic images. Additionally, website members can contribute contextual information, such as photographer statements, to provide more background details.

The project's objective is to offer consumers a reliable resource to improve their ability to judge image authenticity. It also provides photographers and creators with a platform to showcase their works and offer additional information, enhancing public understanding and awareness of images. By being an open-source project, the website encourages other developers to contribute and improve, facilitating ongoing project development and enhancement.

3. Target User

- General public and normal people
- Photographers and creators
- JPEG and image-related organizations
- GLAM organizations: Galleries, Libraries, Archives, Museums
- Students, Scholars and Researchers
- Media Professionals and Journalists

4. Functionality List

■ Website Planning and Development

1. Create a website, determine a suitable domain name, and set up the server environment.
2. Implement a member registration system, allowing users to register and log in.
3. Provide a website mission statement, clarifying the website's goals and mission.
4. Embed knowledge sharing (CC) license terms on the website to ensure copyright information for uploaded images and content.

■ Image Metadata Collection and Storage

1. Design an image upload feature, allowing users to upload images.
2. Extract and record image metadata, including shooting equipment, shooting date, geographic location, and other information.
3. Store image metadata in a database for future use.

■ Visual Cue Design and Contextual Display

1. Develop an interface to display uploaded images and their associated metadata.
2. Conduct research to explore credibility signal design based on image metadata, including visual cues or other symbolic representations.
3. Show credibility signals/visual cues to help users assess the credibility of images.
4. Allow website members to add contextual information to images, such as photographer statements or other relevant details.
5. Ensure the accuracy and credibility of added contextual information.

■ Search and Filter

1. Add image search functionality, allowing users to search based on keywords, date ranges, geographical locations, and other metadata information.
2. Provide filtering options, enabling users to narrow down image results based on credibility, license types, and other criteria.

■ Image Collection and Sharing

1. Allow users to create collections to save their favorite images for later viewing.

■ User Feedback and Interaction System

1. Set up a user feedback system, enabling users to provide opinions, suggestions, or report issues to website administrators.
2. Include a reporting feature, allowing users to report images that may contain false information or copyright infringements.

3. Enable users to leave comments and ratings on image pages, providing additional information and feedback to other users.
4. Offer image storyboard functionality, allowing users to create storyboards and combine multiple images into a cohesive narrative to share their creativity and stories.

■ Metadata-related Functionality

1. Allow users to view the EXIF information of uploaded images, such as aperture, shutter speed, ISO, and other shooting parameters.
2. Allow users to edit and update metadata for uploaded images to provide additional or corrected information.
3. Implement metadata validation mechanisms to ensure that user-uploaded metadata adheres to specific standards and formats, preventing errors or false information.
4. Record the modification history of metadata, allowing users to view previous versions of metadata and trace changes and sources of image information.
5. Allow users to add and manage tags and keywords for images, enhancing the accuracy and efficiency of image search.
6. Design metadata with extensibility, allowing users to add custom fields to meet different user and application needs.

■ Data Security and Privacy Protection

1. Set up a data backup mechanism to safeguard the security and integrity of images and metadata.
2. Knowledge Sharing License Embedding Feature: Displays copyright information for uploaded images and content on the website.

5. Technique Summary

Technology	Description
ASP.NET and Entity Framework	Our backend development will be done in ASP.NET, and we will employ entity framework to build and map the database using code first approach. Using Entity Framework will save us development time as we are all familiar with it
HTML, JavaScript, and CSS	HTML provides the foundation for a website's structure, which is then expanded and modified using CSS and JavaScript. Presentation, formatting, and layout are all controlled by CSS. JavaScript is used to control how certain elements behave. They are the three core programming languages that make up the World Wide Web.
Linux server	Linux servers are commonly used nowadays and are among the most popular due to their reliability, security, and flexibility and asp.net works on Linux servers as well.
Vanilla JS	Vanilla JS is the most lightweight JavaScript framework available, as well as the fastest of all the other JavaScript frameworks.

Bootstrap	Bootstrap is the most widely used CSS Framework for building responsive and mobile-first websites. The Bootstrap libraries provide ready-made code that can save us a lot of time for UI.
React	React is a JavaScript library for building user interfaces with a component-based approach and a virtual DOM. It emphasizes declarative syntax, making UI development more efficient and maintainable. Its ecosystem includes various tools and libraries, making it a popular choice for building dynamic web applications.
MySQL	MySQL is an open-source relational database management system widely used for storing and managing structured data. It supports SQL for querying and manipulating data. While MySQL is not specifically designed for storing large binary data like photos, it can handle photo storage by storing image file paths or binary data (BLOBs) directly in the database. However, for more efficient photo storage and retrieval, it is recommended to use dedicated file storage solutions or cloud-based storage services, and store file paths or links in the MySQL database for easy reference and retrieval.

6. Development Team

Team Member	Roles and Responsibilities
Yifang Meng	Spokesperson, Backend,
Vidhu Chaudhary	Vice Spokesperson, Documentation, UI/UX Design
Lingxiu Cai	Full Stack
Zhaoyun Zhang	Backend, Machine Learning
Tony Chen	Project Manager, CTO
Song Han	Frontend, Database Management

7. Resource and Cost Management

■ Cost

Hardware and server costs:

GPU devices: for deep learning model training. Purchasing a high-performance GPU may require a larger investment. (potential)

Servers: for deploying websites. Consider renting a cloud server such as AWS, Google Cloud or Azure.

Software costs:

Development tools: most open-source tools (e.g., Python, TensorFlow, PyTorch) are free, but certain specialized tools may require purchasing a license. (potential)

Server software: database management systems, web server software.

Third-party API licenses: licenses payment for some paid third-party API if use. (potential)

Other operating expenses:

Backup and Recovery Services: Prevent data loss or system crashes.

Marketing and Promotion Costs:

For increasing the visibility of the website and attracting users.

■ **Resource**

Data:

large amounts of edited, AI-generated and raw image data are needed to test function.

Basic web resources:

Domain name: the web address of the website.

SSL Certificate: Provides a secure connection for the website.

Computing resources:

Powerful computing power, such as GPU servers, is required to train models and process user requests in real-time.(potential)

Storage resources:

storing user uploaded images and model data requires a large amount of storage space.

Relevant research material:

Relative research paper, website, tutorial to improve function.

Legal and compliance advice:

Especially regarding data privacy and copyright issues.

8. Team Statement

We would like to clarify that the primary focus of our current work is on research review. We are deeply engaged in studying and evaluating various academic papers and practical cases concerning image credibility and visual cue design. The goal of this phase is to accumulate sufficient knowledge and understanding to lay a solid foundation for subsequent development work.

As for the development aspect, we plan to commence implementation in sync with substantial progress in the areas of image credibility and visual cue design. This means that our development activities will be closely aligned with our research findings to ensure that our product or solution is based on the most current and accurate information.

We believe that this approach will enable us to meet the project objectives more effectively while also ensuring that our work is grounded in a solid and comprehensive research foundation.

APPROVAL AND AUTHORIZATION

Team Member	UID
Yifang Meng	U7342064
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Team	Signature	Date	Client	Signature	Date