

STATEMENT OF WORK TRUST INDICATORS

01/08/2024

Client: SABRINA CALDWELL

Background.

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.

Client Vision and Goals.

Our client envisions creating an innovative, Australian-themed photograph repository website to address the challenges of image authenticity in today's digital media landscape. In an era where the genuineness of photos and creative images is increasingly problematic, and social media platforms often strip away image metadata, our vision is to develop a platform that not only showcases beautiful Australian-themed images but also uncovers and displays the metadata of these images. This approach aims to help users better understand and evaluate the credibility of the content they encounter. The project seeks to establish a user-friendly website that allows member registration and image uploads while adhering to Creative Commons (CC) licensing requirements, implement a credibility signaling system based on metadata information, and design an intuitive method for displaying photos alongside their metadata.

Objectives.

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.

Project Plan

General developing method: Agile development approach

Our project will adopt the Agile development approach, focusing on iterative delivery of high-quality software to respond swiftly to evolving requirements. Key aspects of the implementation include:

- **Short Iterative Cycles:** Each development cycle will last 2-4 weeks, known as a sprint, with the goal of delivering a working product increment at the end of each sprint.
- **Close Collaboration with Stakeholders:** We will maintain regular communication with all stakeholders to ensure the development direction aligns with their priority needs and make necessary adjustments in real-time.
- **Self-organizing, Cross-functional Teams:** Our team members will have a high degree of autonomy and cross-functional skills, enabling them to quickly address issues and challenges.
- **Adaptability to Changing Requirements:** We will employ flexible planning, allowing us to adjust priorities during the project to accommodate new demands and market changes.

Project Milestones and deliverables.

number	Milestone	Deadline
1	Finish statement of work	week3
2	reviewed the work done by the previous TechLauncher team including the current website-in-progress, gitlab, and design	week5
3	Begin to understand algorithms related to image detection.	week6
4	restructuring and reorganizing the frontend code(add function like chatbot in webpage)	week10
5	Finish the final AI detect model	week10
6	Attach the AICG model to a web page and make it work	week10

Deliverables

1. STATEMENT OF WORK

Description	The Statement of Work is a project report used to describe to the client what needs to be accomplished and the final deliverables of the project. This report should clearly outline our timeline and specify the milestones and deliverables.
Due date	2024-08-05
Quality Criterion	SoW should identify technical and other constraints. Sow should identify resources, risks, potential costs and who will bear them.

2. FRONT-END WEB PAGE

Description	AskIndicator ChatBot Functionality Design (For prior AskIndicator, users cannot interact with it or receive any meaningful responses)
Due date	2024-10-8
Quality Criterion	In the ChatBot, users can enter keywords or questions, and the results will show relevant articles and answers written by the developers to help users better understand and use the site.
Developer	Yunshan Zhang

3. DATABASE BACKEND

Description	Research how to use EXIF metadata to detect if an image has been modified.
Due date	2024-10-3
Quality Criterion	<ol style="list-style-type: none"> investigate how EXIF metadata can be used to detect whether an image has been altered and write a report. complete a basic metadata-analysis-based model that determines whether an uploaded image has been modified and returns which problematic metadata indicates the likelihood that the image has been tampered with.
Developer	Jingbin Liu

4.MODEL ESTABLISHED

Description	We need to develop an image detection model that can assess the likelihood of an image being AI-generated. The model should analyze various characteristics of the image to determine if it exhibits features commonly associated with AI-generated content.
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Due date	2024-10-4
Quality Criterion	<p>The model must accurately evaluate images and provide a probability score indicating the likelihood of the image being generated by AI.</p> <p>The model should consider factors such as image artifacts, patterns, and inconsistencies that are typically present in AI-generated images.</p> <p>The model should be capable of analyzing images in real-time, providing quick feedback on the likelihood of AI generation</p>
Developer	Juliang

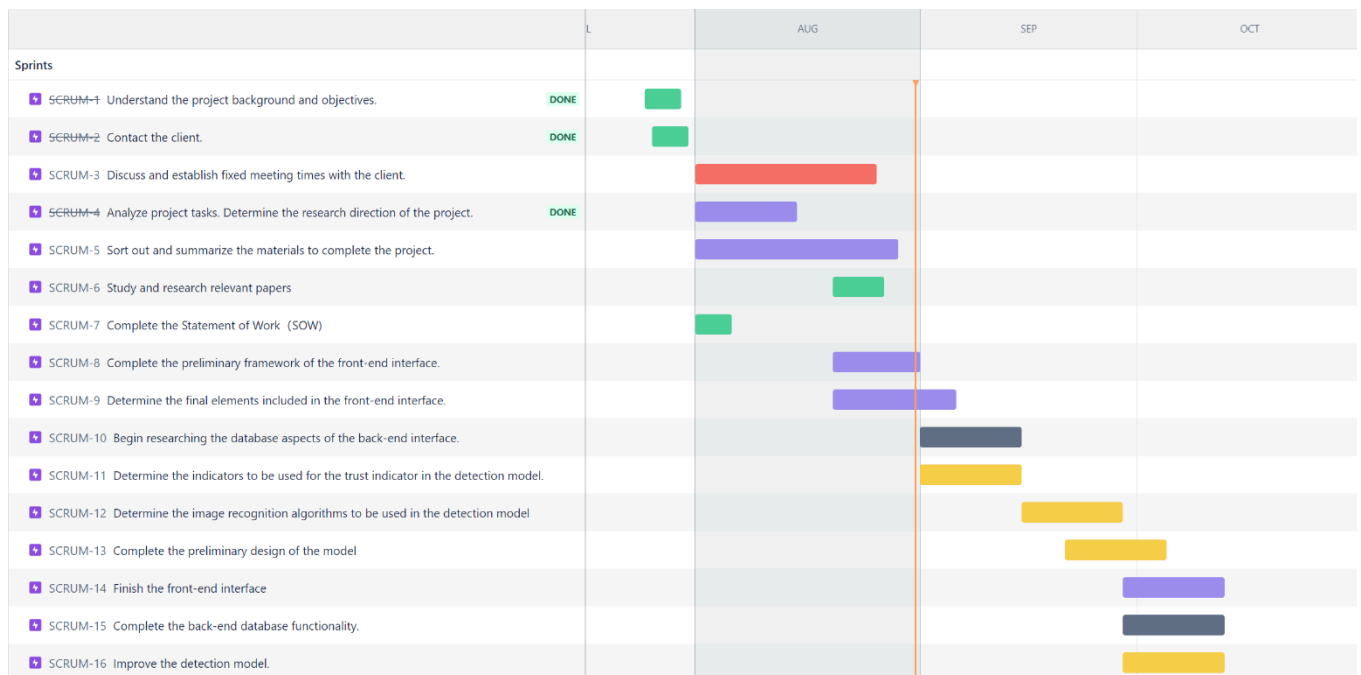
Description	We need to integrate the developed image detection model into our existing server architecture so that it can be directly invoked through the current frontend interface. This will allow users to leverage the model for image analysis via the established frontend interface to determine if the images are AI-generated.
Due date	2024-10-11
Quality	<p>The model must integrate smoothly with the existing server and frontend infrastructure, ensuring that its deployment does not disrupt the current user experience or system performance. It should maintain full compatibility with the existing interface to support efficient data exchange. The integrated system must demonstrate stability and reliability during prolonged operation, preventing failures even under high loads. Additionally, the solution should be easy to maintain and upgrade, with well-documented code and clear comments to facilitate future modifications.</p>
Developer	Juliang

5. PROJECT MANAGEMENT

Description	We decided to use Github Project as a project management tool and upload all the logs we used to monitor the project progress, collect project feedback, make reflection and manage potential risk. The developers who are responsible for this part need to write and update
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	these logs as required. Also need to finish other course required documents such as showcase video and poster.
Due date	Throughout all the project session
Quality Criterion	Need to show all the parts of logs and design the layout to make the documents easier to understand. Also need to ensure all the documents satisfy the course's requirement.
Developer	Chu Zhang

Project schedule.



Sprints	Task discription	Task Owner	Start date	Due date	duration	Status	Adut1													
							Week1				Week2				Week3					
							M	T	W	T	F	S	S	M	T	W	T	F	S	S
Project conception and initiation																				
1	Team formation		28/07/2024	31/07/2024	3d	done														
1.1	Project Respoistory	Juliang	30/07/2024	12/07/2024	3w	done														
1.2	Langding page	Jingbin	30/07/2024	12/07/2024	3w	done														
1.3	Statement of Work(SOW)		30/07/2024	12/07/2024	3w	done														
1.4	Project charter	Juliang	30/07/2024	10/07/2024	3w	done														
1.5	Schedule	Juliang	30/07/2024	10/07/2024	3w	done														
1.6	Stakeholders analysis	jingbin	30/07/2024	9/07/2024	3w	done														
1.7	meeting minutes templete	yushan	30/07/2024	11/07/2024	3w	done														
1.8	Risk log	yushan, haifan	30/07/2024	9/07/2024	3w	done														
1.9	decision log	kun	30/07/2024	9/07/2024	3w	done														
1.10	feedback log	derek	30/07/2024	9/07/2024	3w	done														
1.11	meeting with client		30/07/2024	11/07/2024	3w	Process														

Technique Overview

ASP.NET and Entity Framework

Our backend development will be implemented using ASP.NET along with the Entity Framework, leveraging a code-first approach to construct and map our databases. This methodology is familiar to our team and is expected to reduce development durations significantly.

HTML, JavaScript, and CSS

HTML forms the structural basis of our websites, which are further enhanced and styled using CSS and JavaScript. CSS governs the site's presentation, formatting, and layout decisions, whereas JavaScript handles the behavior of interactive elements. These three languages are fundamental to the creation of web content globally.

Linux Servers

Linux servers are now standard due to their stability, security, and adaptability, and they are compatible with ASP.NET operations.

Vanilla JS

Among JavaScript frameworks, Vanilla JS stands out as the most streamlined option, offering the quickest execution across the spectrum.

Bootstrap

Bootstrap remains the leading CSS framework for developing responsive, mobile-first sites. Its libraries offer ready-to-use code that accelerates UI development tasks considerably.

React

React is a JavaScript library designed for crafting user interfaces with a component-based approach and employs a virtual DOM. This setup enhances UI development by making it more declarative and sustainable, supported by a robust ecosystem of tools and libraries ideal for dynamic web applications.

MySQL

MySQL is a widely utilized open-source relational database management system for storing and managing structured data, supporting SQL for data manipulation. While not designed for large binary data storage such as images, it manages photo storage by incorporating file paths or binary data (BLOBs) within the database. For optimized photo

storage and retrieval, it is advised to employ dedicated storage solutions or cloud services, storing file paths or links within the MySQL database for streamlined access and retrieval.

Risk Management Plan

Introduction

The purpose of this part is to identify and assess potential risks that may impact the project and to develop a plan to mitigate those risks.

The plan focuses on three key objectives:

1. The algorithmic model for the Trust Indicator is accurate and reliable.
2. The Trust Indicator application and webpage is user-friendly and accessible.
3. The Trust Indicator project is completed on time and within budget and timeline.

Risk Management Process

The Risk Management Plan will be updated according to the current status of the project. The Risk Management Plan will be reviewed and updated at the following stages: reviewing and documenting.

Risk Identification

According to the PMBOK guide, risk identification is the process of determining which risks might affect the project and documenting their characteristics.

Methods for Risk Identification:

- Brainstorming
- Interviews
- Delphi Technique
- SWOT Analysis
- Root Cause Analysis
- Checklists
- Assumption Analysis
- Diagramming Techniques

With these methods, risks are identified and documented in the Risk Log.

Risk Assessment

Risk assessment is the process of evaluating the probability and impact of risks on the project.

Tools and standards:

- Probability and Impact Matrix
- Risk Data Quality Assessment
- Risk Categorization
- Risk Urgency Assessment
- Risk Score
- Risk Tolerance
- Risk Appetite
- Risk Thresholds
- Risk Triggers

Likelihood-Qualitative Scale

	likelihood	description
1	Rare	May occur in exceptional circumstances
2	Unlikely	Could occur at some time
3	Possible	Might occur at some time
4	Likely	Will probably occur in most circumstances
5	Almost Certain	Is expected to occur in most circumstances

Harm-Qualitative Scale

	Harm	description
1	Insignificant	Minimal impact on project objectives
2	Minor	Minor impact on project objectives

3	Moderate	Moderate impact on project objectives
4	Major	Major impact on project objectives
5	Catastrophic	Severe impact on project objectives

Risk Matrix

	1	2	3	4	5
1	Low	Low	Medium	Medium	High
2	Low	Medium	Medium	High	High
3	Medium	Medium	High	High	High
4	Medium	High	High	High	High
5	High	High	High	High	High

Industry standards: ISO 31000, PMBOK Guide, etc.

With the tools above, potential risks are assessed and documented in the Risk log.

Risk Response Planning

Risk response planning is the process of developing options and actions to enhance opportunities and reduce threats to project objectives.

Strategies for Negative Risks (Threats):

- Avoidance
- Mitigation
- Transfer
- Acceptance

Strategies for Positive Risks (Opportunities):

- Exploitation
- Sharing
- Enhancement

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- Acceptance

Risk Monitoring and Control

Risk monitoring and control is the process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.

Tools and techniques:

- communication
- risk reassessment
- control measures
- risk audits
- risk monitoring

With the tools above, risks are monitored and controlled according to the Risk log.

Risk log

The Risk log is a document that contains all the identified risks, their likelihood, impact, response plans, and status. The Risk log will be updated throughout the project to reflect the current status of risks. Here are examples:

Risk	Risk Description	Likelihood	Impact	Response Plan	Status
R1	Algorithmic model is inaccurate	3	4	Mitigation	Open
R2	User interface is not user-friendly	2	3	Mitigation	Open
R3	Project is delayed	2	4	Mitigation	Open

Resources:

Technical Resources:

Website Development and Maintenance:

This part includes the design, development, and keeping of the website, containing front-end development (UI/UX design), back-end development (server and database management), and ongoing maintenance (bug fixes, updates, and security measures). These are essential to ensure the platform operates smoothly and provides a good user experience.

Trust Indicator Model:

This is a core technical component used to analyze and tag the credibility of images. It involves designing and training machine learning algorithms, validating and optimizing the model. The model helps to automatically identify the origin and authenticity of images, which directly affects user trust.

Image Processing Technology:

This technology is used for analyzing and processing images, including image recognition, feature extraction, and classification. It supports the trust indicator model by helping to determine the authenticity and reliability of images.

Human Resources:

Project Management:

Our team is responsible for coordinating various aspects of the project, including resource allocation, progress tracking, and goal setting. To ensure that the project is completed on time and meets the requirements and quality standards.

Content Review:

Our team also includes member to review the images and the descriptions to ensure accuracy and authenticity. Their work directly impacts the reliability of the project and user trust.

Community Support:

This part of member is to handle feedback, answers questions, and provides assistance. It's part is to enhance the user experience by resolving issues and maintaining a positive community environment.

Data Resources:

Image Datasets:

Used for training and testing the trust indicator model, including original images, artificially generated images, and modified images. These datasets are crucial for the model to learn and assess image credibility.

User-Generated Content:

Includes images and descriptions uploaded by users, which are vital for building and maintaining the project's database. This content allows the model to continuously update and improve, providing more accurate trust indicators.

Potential Costs

Development Costs:

Website Design and Development:

Includes expenses related to designing user interfaces, implementing functional modules, and ensuring website responsiveness and stability. This is fundamental for the project's launch and achieving its goals.

Development of Trust Indicator Model:

Involves costs for data collection and processing, model development, training, and testing. These expenses ensure that the model can accurately evaluate image credibility and provide reliable results.

Operational Costs:

Server and Storage Costs:

Covers the costs of hosting the website and storing user data. Servers need regular maintenance to ensure platform stability and security.

Content Review and Community Support Costs:

Includes time costs for content review and community support team members, as well as related operational expenses. These costs are used to ensure the accuracy of platform content and user satisfaction.

Technical Support and Website Maintenance:

This covers the costs for technical support and technical maintenance and updates for the website. These expenses are necessary to resolve technical issues and optimize platform performance.

Cost Bearers:

Project Client:

Responsible for the overall management and planning of the project, the allocation and utilization of resources and potential costs involved in the project.

Project Team:

Responsible for costing time and energy for processing the project, including all parts related to website design, development, and the creation of the trust indicator model. And for further support and maintenance.

Stakeholders Analysis:

Client:

The client expects the development of a photo repository website with Australia as its theme, aimed at helping users better understand and evaluate the credibility of images. The website should display metadata for uploaded images and provide visual cues to assist users in identifying and discerning authentic images. Additionally, the website should allow users to upload their own images under the Creative Commons (CC) license and provide a platform for photographers to showcase their work. The client desires a website with good usability, responsiveness, and security, ensuring a smooth user experience while encouraging other developers to contribute to the project's ongoing development and improvement.

User Identification

End Users: The primary end users include regular users and photographers. Regular users expect the website to help them easily identify the authenticity of images and provide a reliable resource to enhance their understanding and judgment of images.

Photographers, on the other hand, hope that the website will offer a platform to showcase their work, allowing them to add contextual information, such as photographer statements, to enhance public understanding of their images. Users also expect the website to be user-friendly, easy to use, and to offer extensive learning resources and guidance.

Team Members

Team Members: Team members aim to deepen their understanding of complete project execution, particularly in developing backend functionalities related to user interaction and image management. Their goal is to enhance skills across various stages of software development, from initial design to implementation, testing, and deployment. Throughout the project, team members will hone their technical abilities and gain professional experience, with a particular focus on improving their knowledge in database management, user authentication, and data security, preparing them for future career challenges.

Shadow Team

Shadow Team: As a peer review body for the main team, the shadow team regularly reviews project progress, offering new perspectives and constructive feedback to enhance project quality. The shadow team will use this opportunity to develop critical analysis and project management skills, ensuring comprehensive quality assessments during project execution and assisting in the successful completion of the project through meticulous review.

Tutor/Course Convener

Tutor/Course Convener: The tutor is responsible for providing professional guidance and overseeing each stage of the project, ensuring that the project is on the right track and meets the expected quality standards. The course convener is responsible for the overall planning and management of the course, determining the evaluation criteria

and submission requirements for the project, and providing the team with the necessary resources and support to ensure the project's successful completion and the achievement of learning objectives.

Team members.

Name	Emails
Juliang Xiao	U7757949@anu.edu.au
Jingbin Liu	u7664372@anu.edu.au
Yushan Zhang	u7759158@anu.edu.au
Haifan Yang	u7776711@anu.edu.au
Derek Huang	u7300484@anu.edu.au
Chu Zhang	u7770023@anu.edu.au
Kun Gong	u7628201@anu.edu.au

Client Approval.

Client Signature:

Signed by: ***Sabrina Caldwell***

Date: **9 October 2024**