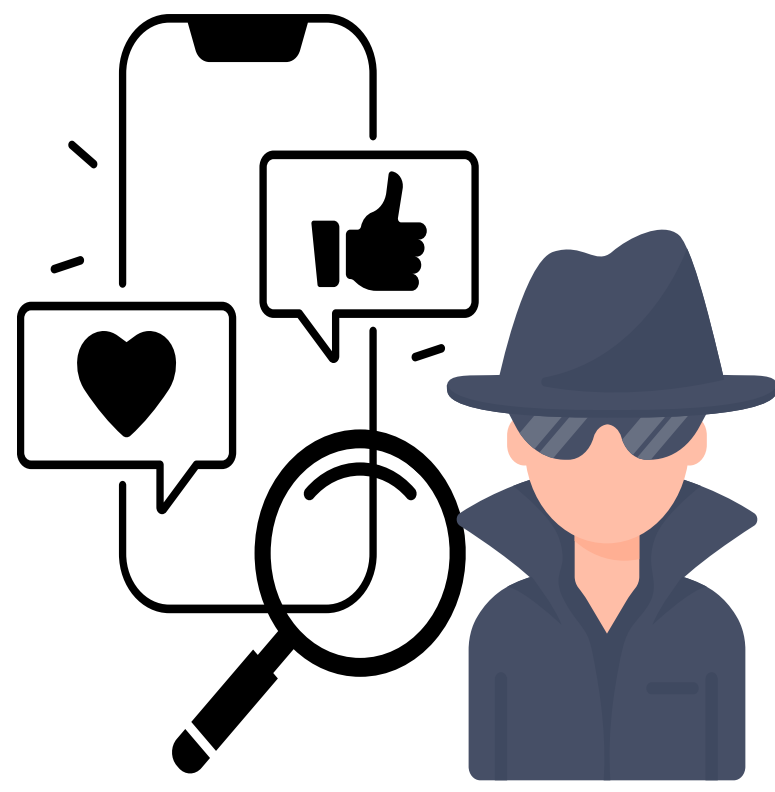# AIdentify
~Enhancing Privacy in Social Media Photos~

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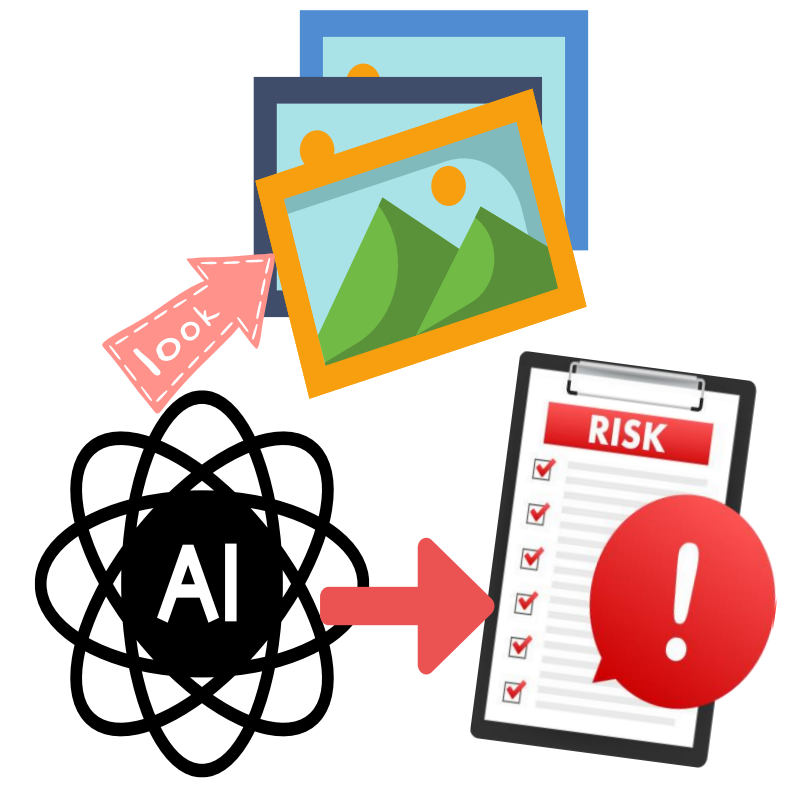National Institute of Technology, Hachinohe College

Problem

Many people go on social media platforms, unaware of the risks to one's privacy

Many people use SNS, but there is a hidden risk of personal information leakage.
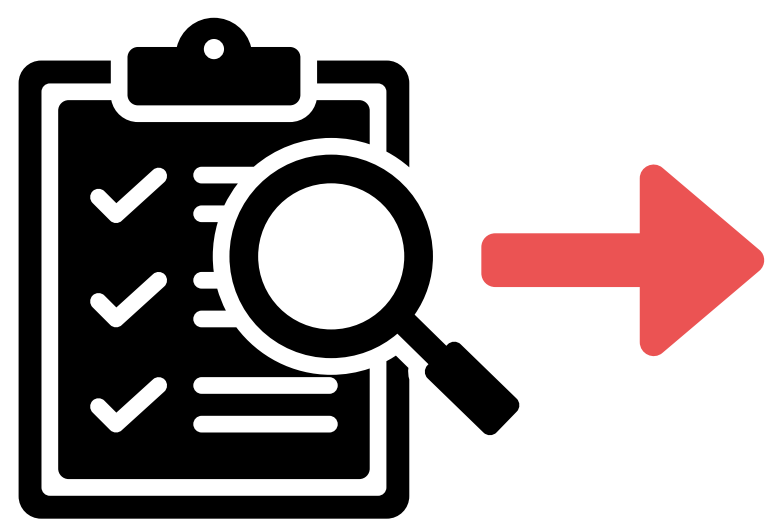
Therefore, we propose automating most of the processing using AI tools.

The aim is not only to edit the photos, but also to improve social media literacy by informing people how dangerous the photos are.
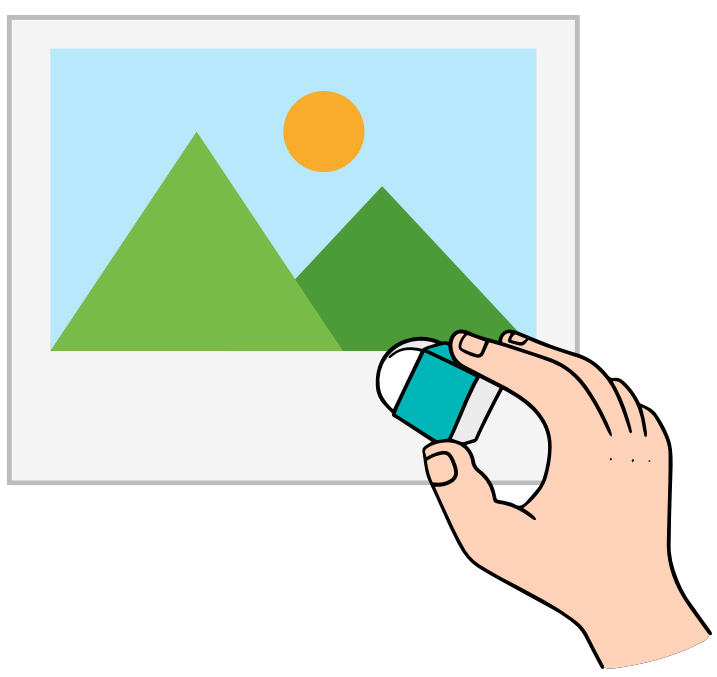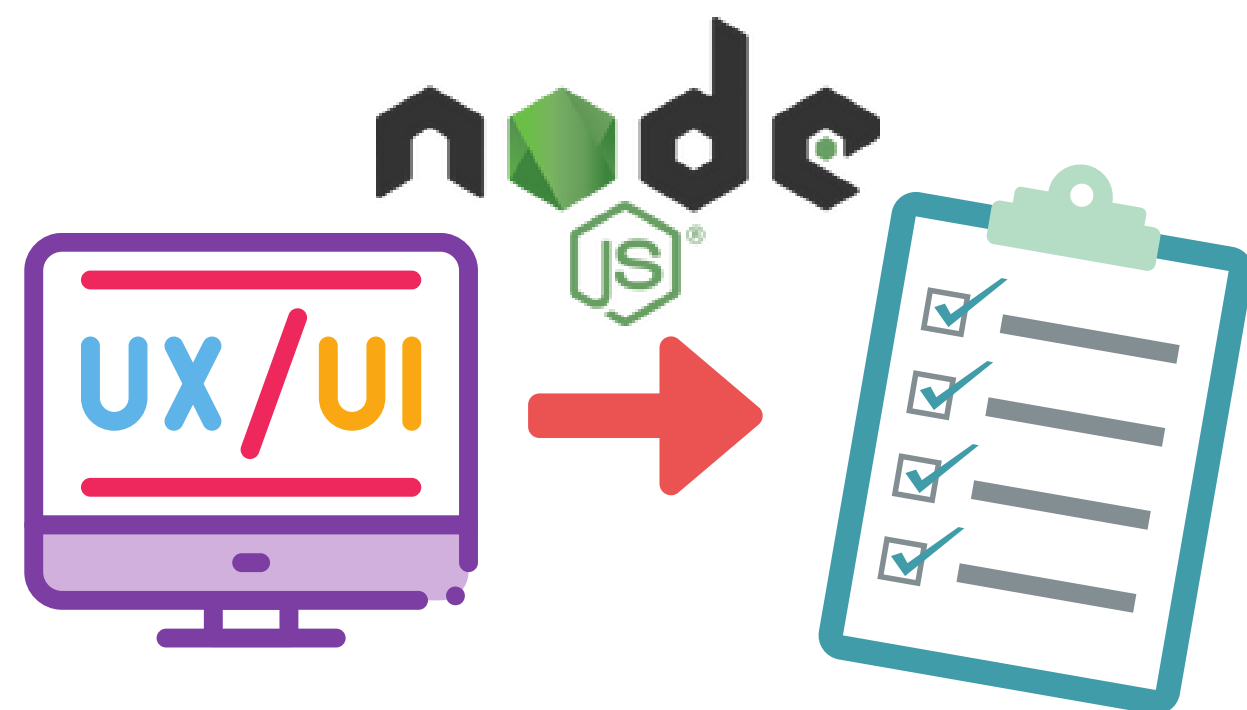
Flamework

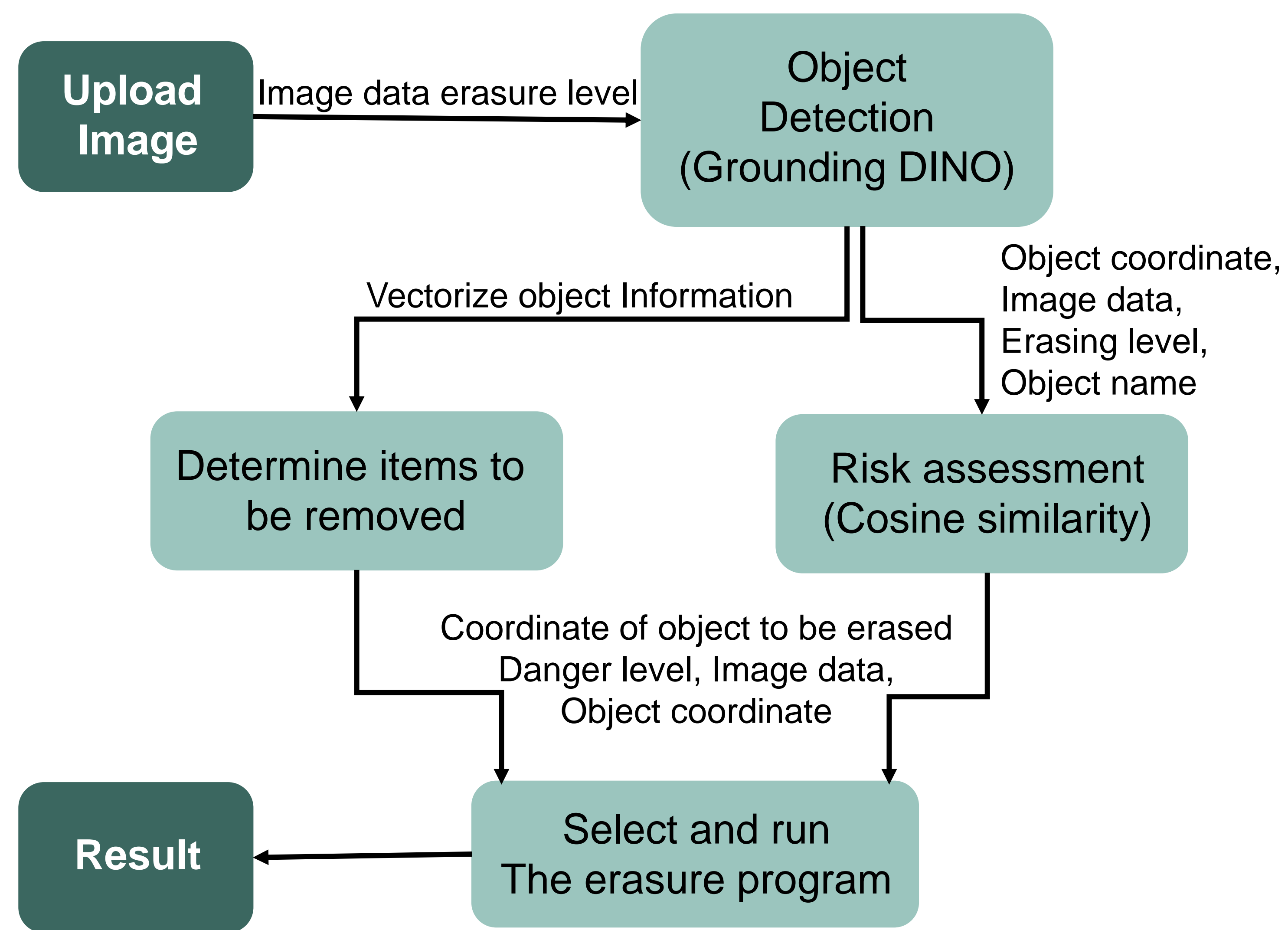Investigating what can be deleted to prevent personal information leaks

Developing an image recognition model that can effectively detect what needs to be recognized

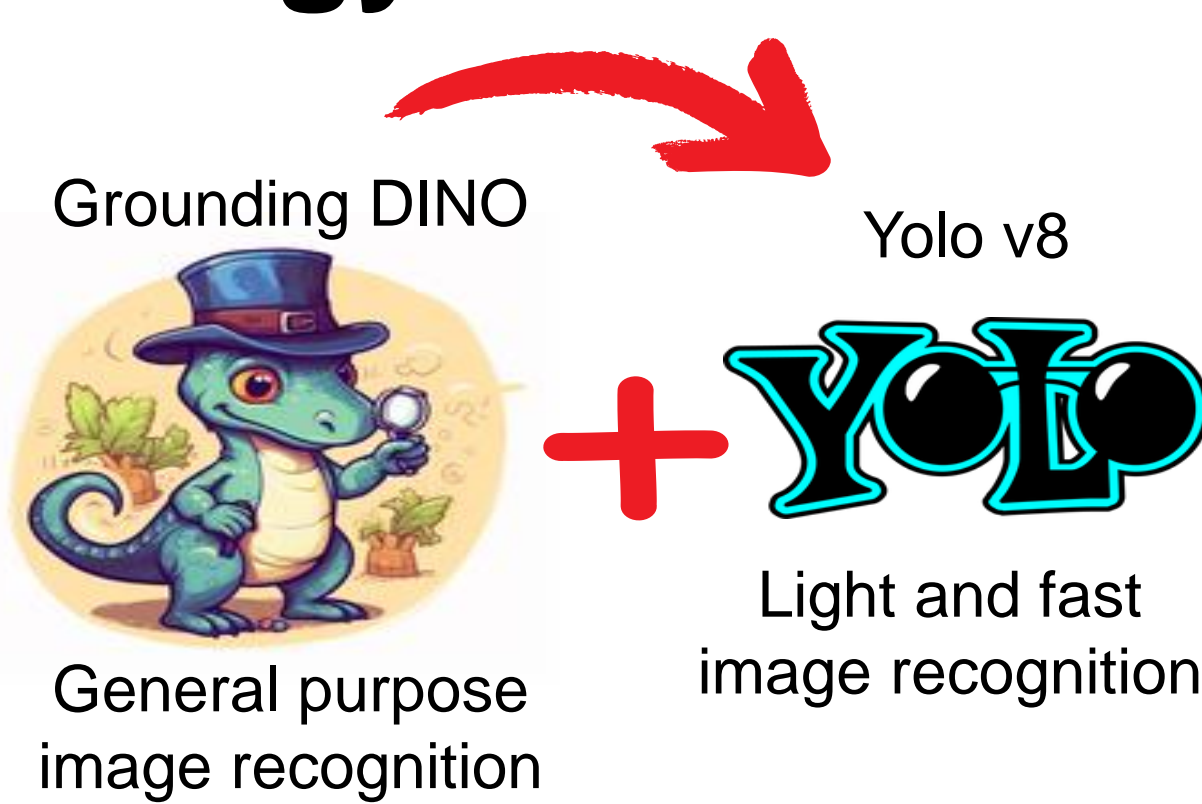Building a system that can erase objects from images without leaving artifact

Creating a UI that is easy for anyone to use and investigate the usability of the tool

Upload Image →(Image data erasure level)→ **Object Detection (Grounding DINO)**

Vectorize object Information

Object coordinate, Image data, Erasing level, Object name

Determine items to be removed

Risk assessment (Cosine similarity)

Coordinate of object to be erased Danger level, Image data, Object coordinate

Select and run The erasure program

Result

Finding

Implementation of High-Precision Detection Technology

By combining YOLOv8 and Grounding DINO, we developed a system capable of detecting personal information quickly and accurately
YOLOv8's inference time was reduced to **0.1163** seconds and achieving a **75%** reduction compared to previous versions.

Grounding DINO
General purpose image recognition

Yolo v8
Light and fast image recognition

Introduction of a Risk Evaluation System

We implemented a system that analyzes information within images, automatically quantifies the risk of personal information Being leaked, and masks high-risk areas.
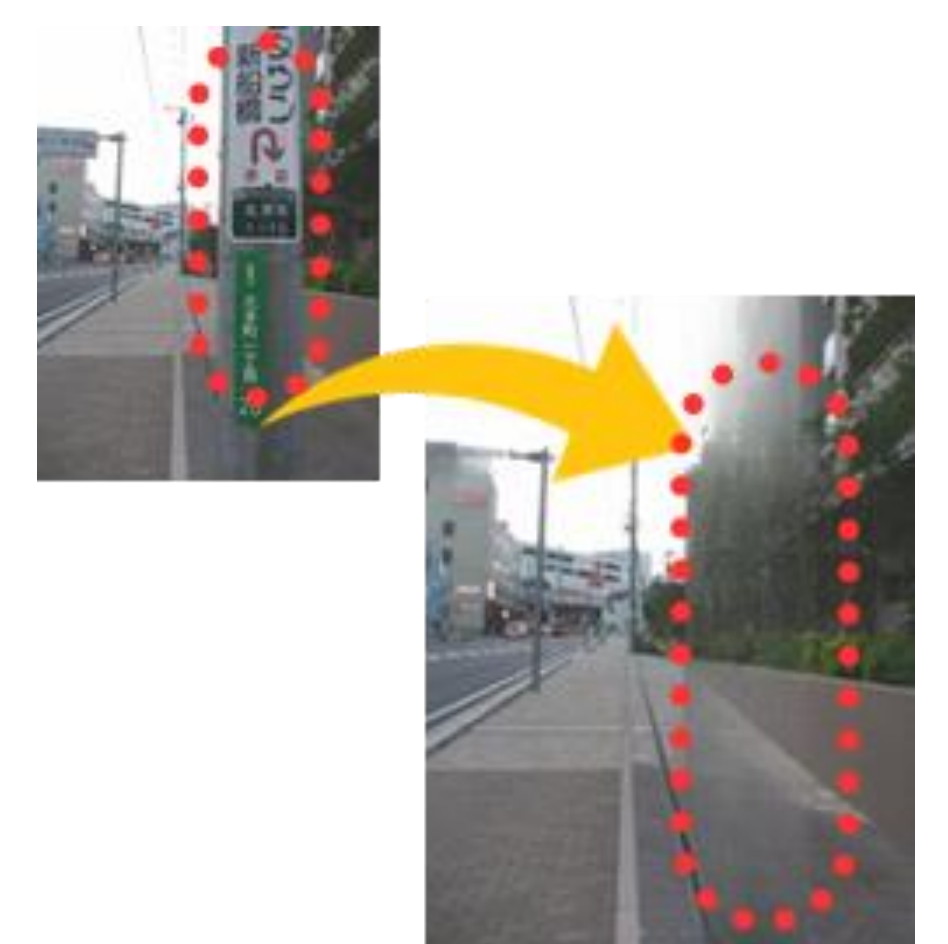
Fast and natural correction

We combined three different methods with focus on speed. Each method specializes in its own strength, achieving high quality and fast processing by leveraging their unique advantages.

Enhanced Versatility and Usability

Utilizing image recognition technology, we created an application that protects personal information naturally with ease, regardless of the OS or device, offering a seamless experience.

Conclusion

The "AIdentify" tool developed in this project plays a crucial role in alleviating concerns regarding personal information protection and promoting a safer and more enjoyable use of social media. Moving forward, we aim to enhance the accuracy of the risk assessment function and further reduce processing time. Additionally, we plan to expand the features and consider adopting new technologies to meet the diverse needs of the users.

Preference

[1] Pengchuan Zhang. (2021). GLIP: Grounded Language-Image Pre-training (online), Search on September 24,2024 from. https://github.com/microsoft/GLIP
[2] Ren Tianhe. (2023). Grounding DIno (Online), Search on September 24, 2024 from. https://github.com/IDEA-Research/GroundingDINO