INT3404E 20 - Image Processing - Group 3
Sino-nom character localization report

Hoang Duc Anh Tran Thi Van Anh
Nguyen Thi Thuy Huong Tran Hanh Uyen

1 Team Leader

Nguyen Thi Thuy Huong

2 Planning and Proposal Development

2.1 Conducting a Literature Review and Survey

We conducted a thorough literature review and survey of existing solutions or methods relevant to the chosen problem. We surveyed some state-of-the-art (SOTA) Object Detection Models in Top Object Detection Models at roboflow.com. Among numerous options, we selected a few top models that are both easy to train and fast enough for our capacity in Google Colab. The selected models for use with the Sino-nom Character Localization dataset include:

- YOLOv5: A very fast and easy-to-use PyTorch model that achieves state-of-the-art (or near state-of-the-art) results.
- YOLOv8: YOLOv8 is a state-of-the-art object detection and image segmentation model created by Ultralytics, the developers of YOLOv5.
- Detectron2: Detectron2 has its own model zoo for computer vision models written in PyTorch.
- DETR: Detection Transformer (DETR) is an end-to-end object detection model implemented using the Transformer architecture.

2.2 Assigning Tasks to Team Members

To ensure efficient progress, we have broken down the project into manageable tasks and milestones. These tasks have been carefully assigned to team members based on their strengths and expertise. Regular communication and collaboration are maintained to ensure smooth coordination and progress.

- Van Anh:
  - Basic Data analysis.
  - Implementing a pipeline in DETR.
  - Evaluate output result in validate test in mAP.
- Duc Anh:
  - Implementing a pipeline in YOLOv8.
  - Evaluate output result in validate test in mAP.
- Huong:
  - Conducting a comprehensive literature review and survey of existing solutions and select the Models.

  - Implementing a pipeline in Detectron2.
  - Evaluate output result in validate test in mAP.

- Uyen:
  - Implementing a pipeline in YOLOv5.
  - Evaluate output result in validate test in mAP.

- All team members:
  - All team members will collaborate to optimize the best model achieved during phase 2. Additionally, we will collectively fine-tune the model with new data to achieve the best possible results.
  - All off us will contribute to documentation and report writing.