Weekly Report-5

CSE-541 (Computer Vision)

ProjectNo_2 **GroupNo_5**

Ahmedabad University

Project Title

"Road Markings Detection and Road Measurement in Aerial Imagery"

Date of Submission: 23-03-2024

Group Details:

Enrolment No.	AU2140001	AU2140017	AU2140032	AU2140149
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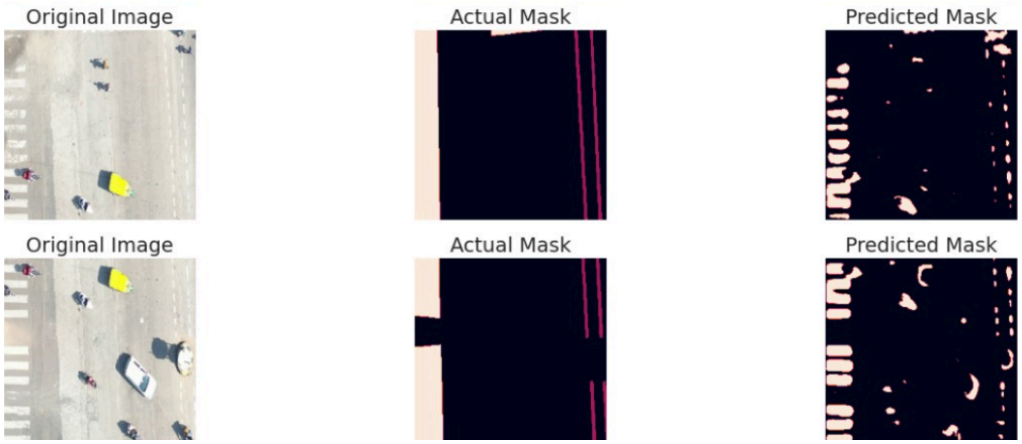
We've recently received the AU drone dataset for road marking detection and have begun working with it. After evaluating various approaches, we have decided to utilize image segmentation method to generate masks for road markings. Also, our dataset has the ground truth values for the masks.

We have also selected U-Net architecture, which employs an encoder-decoder configuration. This architecture first learns features by reducing spatial dimensions, then subsequently restores the original spatial representation of the marking masks by increasing dimensions.

The code can be accessed from here: https://www.kaggle.com/code/hingudhruv/u-net

We have written the code and we employed accuracy as our stopping criterion, but found the outcomes unsatisfactory, as evidenced by the images.



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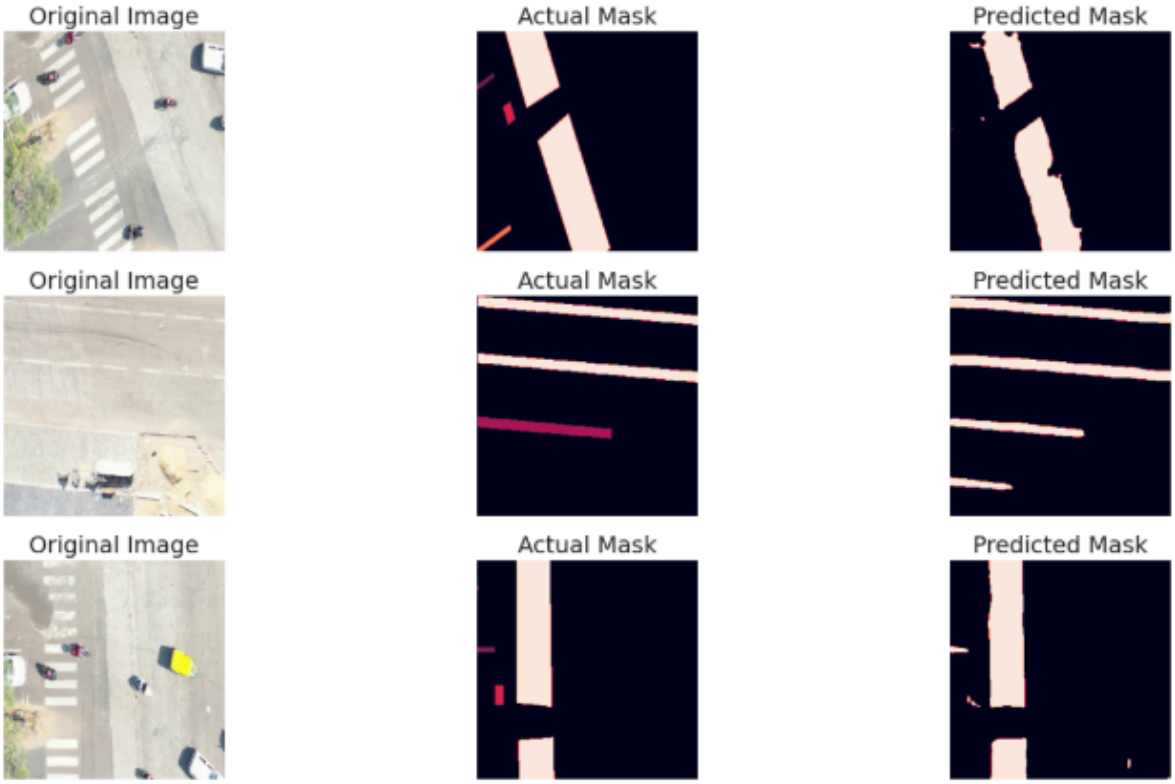
Subsequently, we transitioned to using Intersection over Union (IOU) as our criterion, and have observed significant improvements in binary class classification as seen in the images.



We have also worked on preparing for our mid-sem presentations.

- **Next Tasks**

Implement the binary classification and make the model more robust to the noise.

- **References**

[1] Ronneberger, O., Fischer, P., & Brox, T. (2015, May 18). U-NET: Convolutional Networks for Biomedical Image Segmentation. arXiv.org. https://arxiv.org/abs/1505.04597