Ahmedabad University

Weekly Report 2

Group : 4

Course: Computer Vision

Instructor: Prof. Mehul Raval

Project: Road markings detection and road measurement in aerial imagery

Group Members

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Progress this Week:

- **Understanding the problem:** This week focused on thoroughly understanding the problem statement and its various components.
- **Research on existing approaches:** Investigated existing literature and explored various techniques for road markings detection and measurement in aerial imagery, including:
  - **Image segmentation** for identifying road markings.
  - **Deep learning models** for automated detection and classification.
  - **Calibration techniques** for establishing the "pixel to cm" mapping.
- **Project planning:** Developed a preliminary project plan outlining the following:
  - Data acquisition and pre-processing steps for the imaginary dataset.
  - Model selection and training process for road marking detection.
  - Development and evaluation of the "pixel to cm" mapping function.
  - Reporting and analysis of the results.

Next Steps:

- Continue researching specific algorithms and techniques for each task (detection, measurement).
- Start gathering and pre-processing the AU drone dataset.
- Begin implementing and testing chosen algorithms on a smaller subset of the data.

Challenges and Considerations:

- **Data availability:** Ensuring access to a sufficient amount of high-quality aerial imagery with labeled road markings.
- **Model complexity:** Balancing model accuracy with computational efficiency, especially for large-scale applications with high-resolution imagery will be a challenge.
- **Environmental variations:** Accounting for various lighting conditions, weather effects, and image resolutions that may impact detection and measurement accuracy.