Weekly Report-4

CSE-541 (Computer Vision)

ProjectNo_2 **GroupNo_5**

Ahmedabad University

Project Title

"Road Markings Detection and Road Measurement in Aerial Imagery"

Date of Submission: 02-03-2024

Group Details:

Enrolment No.	AU2140001	AU2140017	AU2140032	AU2140149
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Road marking extraction in UAV imagery using attentive capsule feature pyramid network

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For Week 4, we have selected the above given paper, as we have mentioned in our previous reports, because the dataset was available which was used in this paper.

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Reading the Paper:

We looked into all the individual layers within the ACapsFPN architecture, in order to get the clearest understanding of its internal workings together with the exploration of its capabilities for UAV imagery analysis.

Explore the ACapsFPN architecture and enhance technical skills for the implementation of deep learning models in UAV imagery analysis.

- Selected the ACapsFPN paper for in-depth analysis due to the availability of the dataset used in the paper.
- Studied individual layers within the ACapsFPN architecture to gain a clear understanding of its internal workings.
- Explored the capabilities of ACapsFPN for UAV imagery analysis.
- Investigated the code infrastructure for ACapsFPN, emphasizing the use of convolutional layers, capsule networks, attention mechanisms, and FP Networks (FPN).

Our Findings:

- Focused on enhancing technical skills related to deep learning, computer vision, and knowledge extraction from drone images.
- Engaged in the process of coding and implementation to gain hands-on experience with complex technical skills.
- Recognized the determination and commitment demonstrated in exploring deep learning models for aerial imagery.
- Acknowledged the application of codified theories to actual data, laying the groundwork for future project elaborations.

References :

- Guan, H., Lei, X., Yu, Y., Zhao, H., Peng, D., Marcato, J., & Li, J. (2022). Road marking extraction in UAV imagery using attentive capsule feature pyramid network. International Journal of Applied Earth Observation and Geoinformation, 107, 102677. https://doi.org/10.1016/j.jag.2022.102677