Mafat (DDR&D) Challenge
Detection and fine grained classification of objects in aerial imagery

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Background...

1   The Task

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2   The Dataset

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3   Challenges

1. Oriented Bounding Box
The dataset consisted of Oriented Bounding Boxes (Bounding Boxes which are not axis aligned).
All the known formats however supports axis aligned Bounding Boxes only, called Horizontal Bounding Boxes. Therefore, I had to wrap each OBB in HBB.

2. Classes with a point instead of Bounding Box
The solar panel is marked with a point instead of 4 points Bounding Box. Therefore, I've decided to just create a 4 point Bounding Box for it containing the same point multiplied by 4.

3. High resolution images
Some images did not fit into GPU (50). I decided to ignore them for now.

4. Subclasses
I decided to ignore subclasses for now, since most of the detection networks modules do not support them.

5. Falsely annotated images

Some image annotations contained bounding boxes with coordiantes outside of the image. I decided to crop these coordinates to fit inside image.

4   State Of The Art Computer Vision Networks

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