1. **Formalization:** To extract foodprint of buildings from satellite image, I first as most common way form it as a semantic segmentation problem. So I try to use densly deep neural network to address this problem.

1. **Data:** Here I use satellite data from Spacenet challenge, due to the limitation of time and computational source. I only use the sub-dataset for Paris region which contains 1147 images (918 training, 229 test) , I futher devided training into trainning and validation(20%)
2. **Method:** Here I tried two different pipeline for this problem, (1) first I tried to solve this problem with an end to end netwrok (actually state of art winner for this challenge use similar idea and network). (2) Then, instead of end to end method I also try to preprocess groundtruth into distance map(pixel-wise distance between it’s nearest footprint boundry) form and train the network to learn distance map and use post-processing(contour finding, clustering) to find footprint polygon. Here is the networking I am using (Res-Unet)

**A close up of text on a white background

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1. **Experiement details:** Here I use Adam optimizer and Iou-coefficient loss, and trained 200 epochs. Here I only use IOU as metric (precision, recall, F1 score can be easily add).
2. **Results:** Here I randomly showed results for 3 images, and do not contain quantive result adasda
3. **Analysis and further work:**
4. **Reference**