Weekly Report 2019.08.19-2019.08.25

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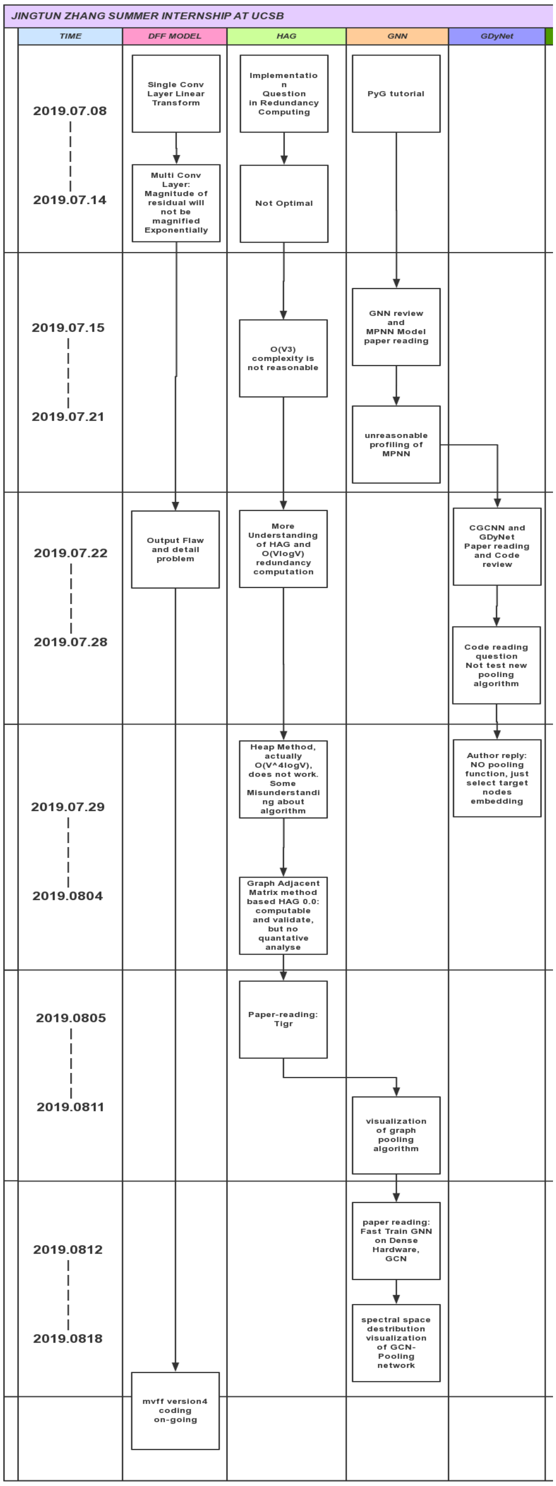
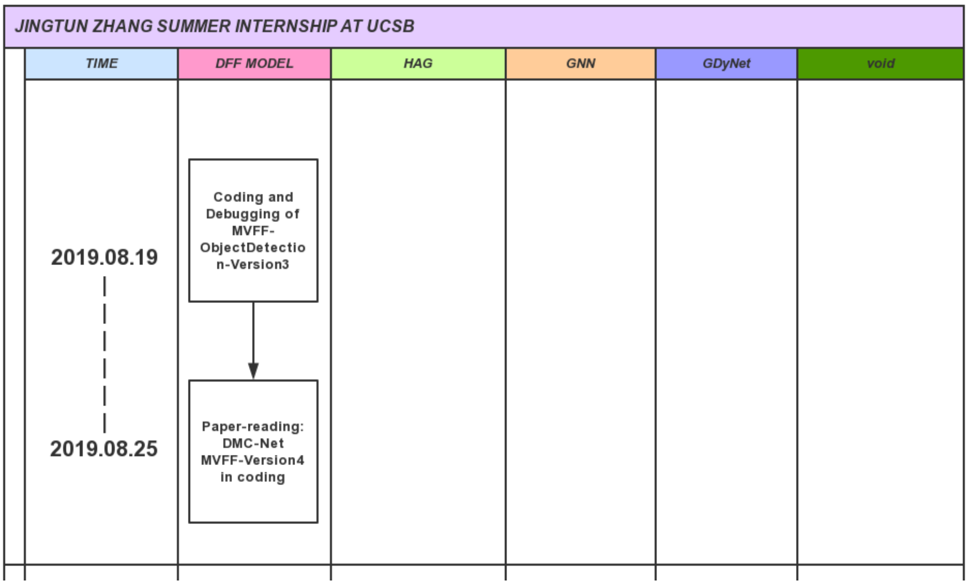
WHERE WE ARE:





Work and Progress

1. Paper-reading: DMC-Net note(in writing)

2. Coding and Debugging of MVFF-ObjectDetection-Version3

   More Discussion:

   1. Simply process Movtion-Vector by a not so deep CNN (4~5 layers) and Pooling to feature-map size will not work, Object-Detection will only work on key frames, bounding box regression will not work well on non-key frames' feature map get by Conv-Pooling processed Movtion-Vector (Map = 0.08 *on small dataset*)
   2. Simply change CNN structure or initialization method will not slove this problem (Map = 0.08)
   3. Only one layer Pooling or using Conv to replace Pooling will not work either (Map = 0.08)
   4. Interpolation+CNN without Pooling method will work --> Conv is in function (Map = 1.00)
   5. Firstly interpolation Movtion-Vector to a integer-times of feature-map shape and then process it by Conv+Pooling will work (Map = 1.00)
   6. Change Movtion-Vector loding size to make the width and height to have the same scale ratio, and then Conv-Pooling without interpolation method result will be improved by 2~3 times (Map = 0.15 ~ 0.25)

   Conclusion:

   *MVFF-Object-Detection task is sensitive to the information loss in integer-times scale and width-height-same-ratio scale of movtion vector in pooling process, so we need firstly use interpolation (non-integer-times) scale to scale the movtion vector to a integer-times of feature map shape (16*feat-map-width, 16*feat-map-height)*

This week plan

1. paper reading for idea:

   1. Quantum Computing
   2. GNN models

2. MVFF-Version4 coding