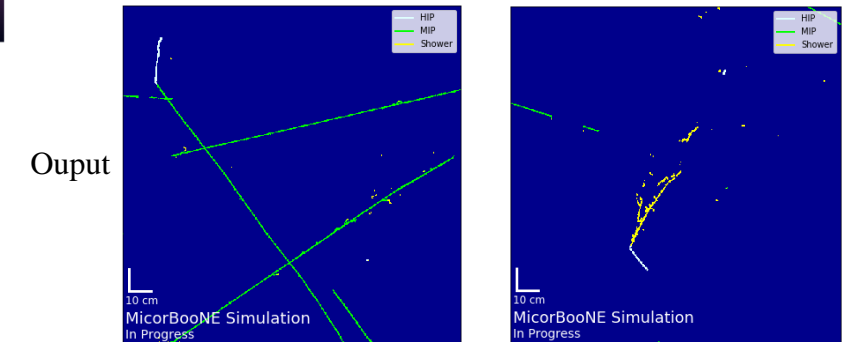
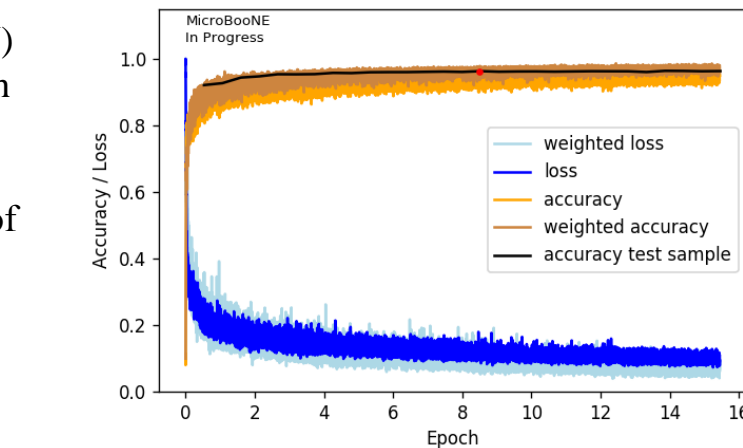
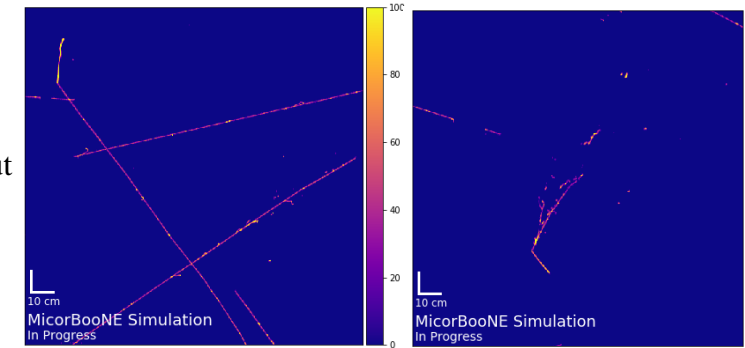
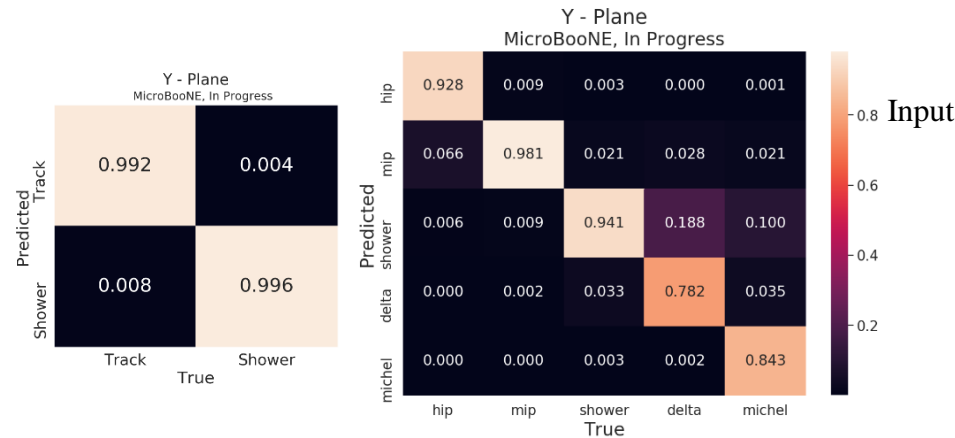


## Summary

- MicroBooNE data can be represented by 2D images
- One of the first task in DL LEE analysis chain is semantic segmentation
- Data is very sparse <math><1\%</math> non zero pixels (in MicroBooNE <math><0.5\%</math> within threshold)
- SparseSSNet
  - Crop image to 60 images (GPU memory limitation) -> no cropping of the image.
  - Improvement in memory usage ~GB/full\_image
  - Improvement in time ~2s/full\_image (CPU)
  - Allows to utilize existing infrastructure with computing resource improvement, no need to “optimize” network.
  - Higher accuracy (~99%) -> No “blurring” of data
- Scalability to 3D and bigger detectors



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