

CNN in offline reconstruction: goals

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Goal: train Convolutional Neural Network (CNN) prototype
for clustering and energy regression

→ Useful as baseline for later studies of graph networks (GNN)

Tasks:

- Use dataset with multiple particles shot in $\Delta R = 0.3$ = available
- Define coarse grid (“pixels”) in $(\eta, \phi, \text{layer number})$
with max. ~ 6 sensors per “pixel”
 - Layer number to be obtained from rechit z: needs lookup table
 - Find sensible grid
- Transform GNN training input to input needed for CNN
 - e.g. each pixel in grid will have corresponding features of contained rechits
- Construct CNN training architecture (layers, ...)
- Train and optimize CNN