

# ML4RECO GNN online

- Week's goal: implement & synthesize GarNet (distance-weighted graph network) within HLS4ML
- Intermediate goal: have HLS4ML generate a compilable GarNet C++ code
  - Synthesis requires proper optimization (and reduction of operations - likely by a lot)

# Intermediate goal achieved

- Python configuration parser + C++ templates
  - Compiles with g++
- Synthesis fails - too many loops to unroll
- In a parallel track, showed that the model can have a lot fewer multiplications than the default GarNet
  - We are performing only a very simple task (e/ $\gamma$  vs hadrons)
- Will re-implement reduced model, then ask the HLS4ML team for help on optimization