

04/05/2024 GELATO Weekly

Max Cohen



Updates from this week

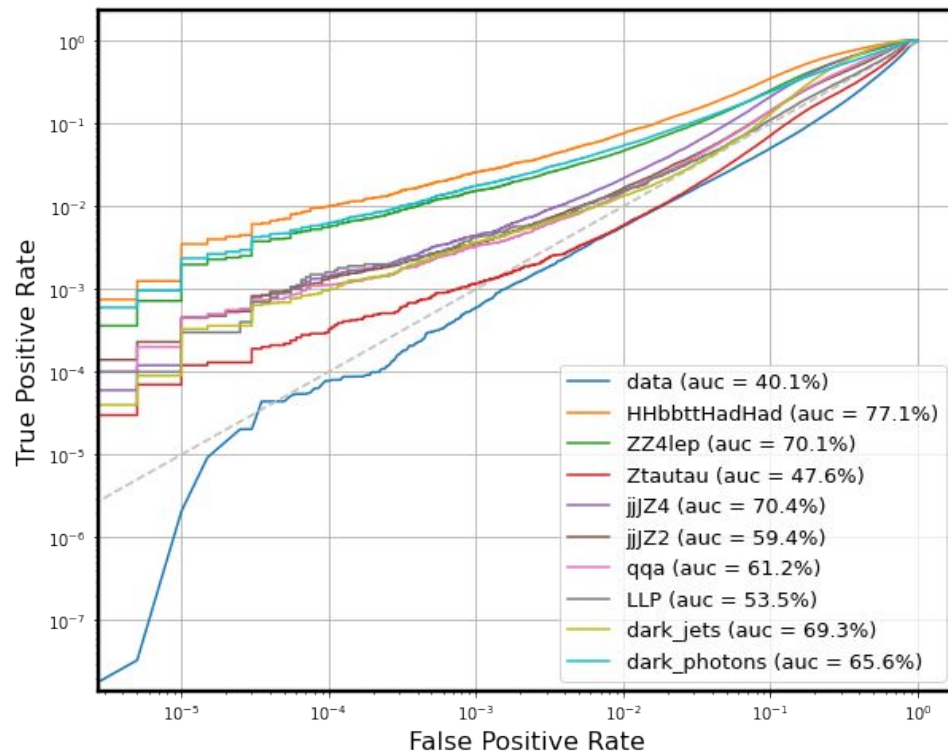
- Finished adding support for L1 objects to xAODAnaHelpers
- Made new EB ntuples with L1 objects
 - MC samples coming soon
- Tried training with zerobias events for HLT algo

Training with zerobias

- Up until now, the HLT algorithm was only being trained with events that passed an L1 trigger
 - This results in not training over “zerobias” events
- I tried including the events that did not pass an L1 trigger, weighted at 0.5
 - Now the network is being trained over the entire EB spectrum with this weighting scheme

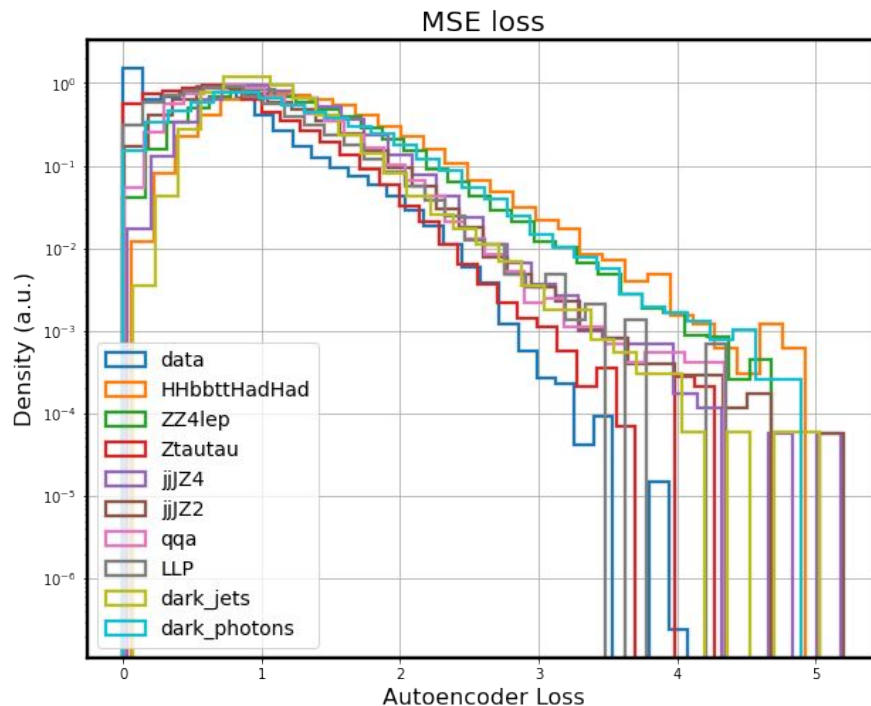
Training with zerobias

- Test data split ROC curve now has extraordinarily low TPR at low FPR values
 - This wasn't present previously
- TPR on other signals has gone down as well



Training with zerobias

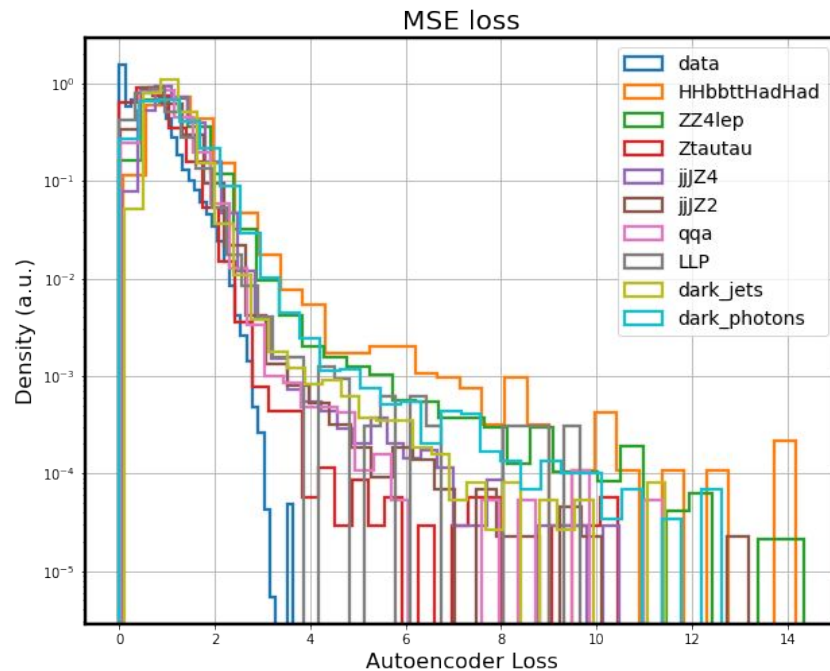
- Test data split has peak in lowest loss bin
 - This wasn't present previously



Training with zerobias

Next, I tried scaling the zerobias weights by 0.1:

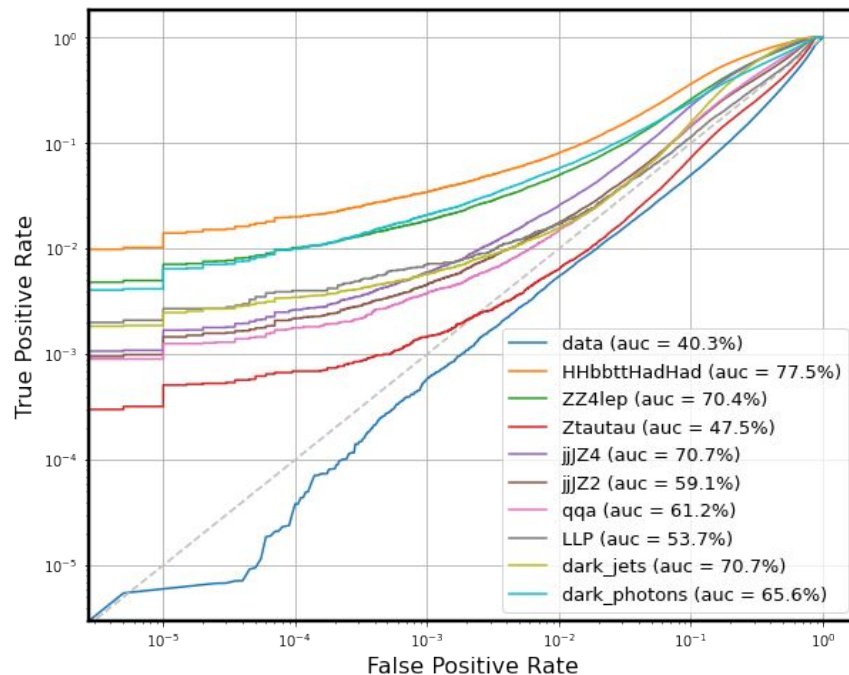
- Greatly increases the MSE for non-data signals



Training with zerobias

Next, I tried scaling the zerobias weights by 0.1:

- Also increases signal TPR
- Still getting strange data ROC curve



Training with zerobias

- Inverse overlap of JZ2:

Previous value: 1.149

zerobias scaled 0.5: 1.111

zerobias scaled 0.1: 1.184