Update: GenAI for BIB Team

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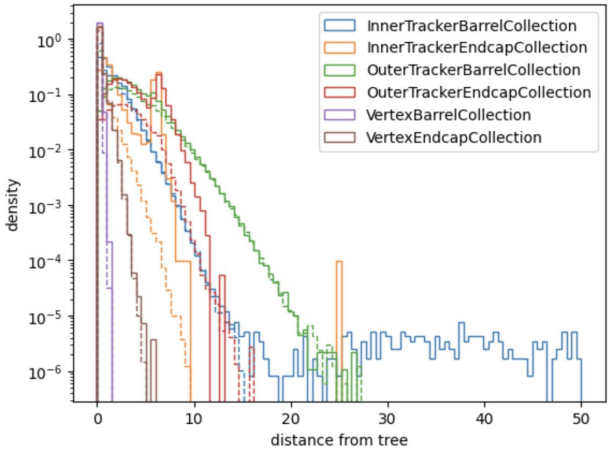
Progress so far: BIB generation

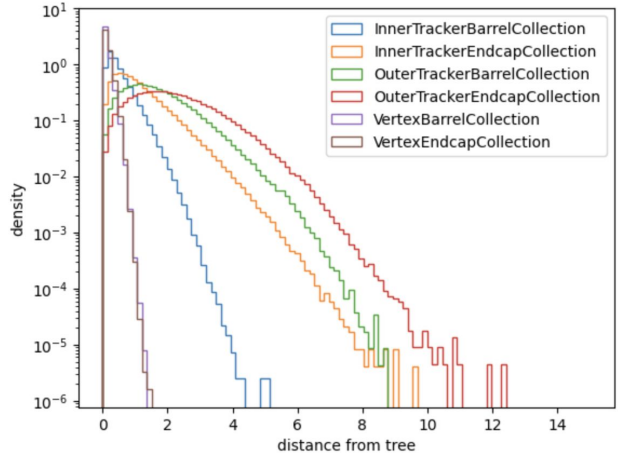
Tasks worked on

1. Assigning detector cell IDs to BIB samples

   Done with a scipy lookup tree that assigns the cell ID of the closest Sim BIB hit in the training data

   Found and resolved 2 bugs in the detector masking code!





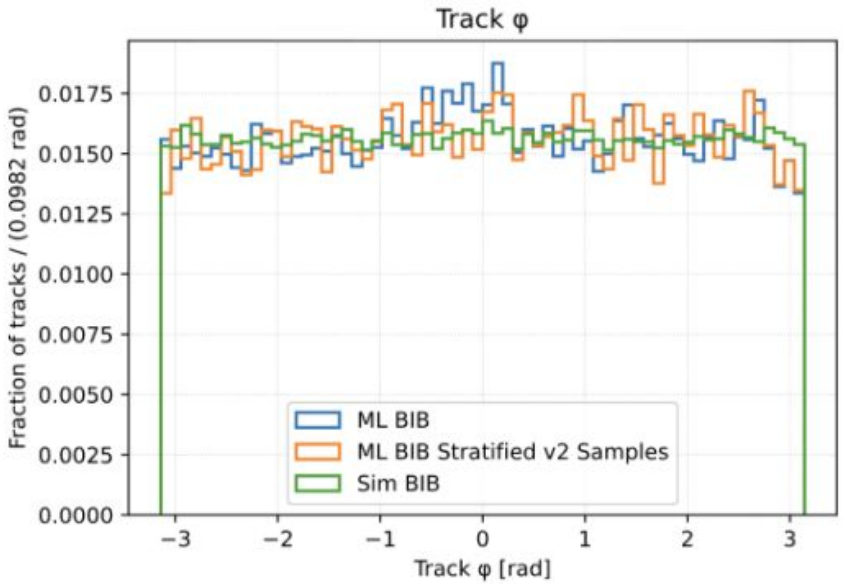
Progress so far: BIB generation

Tasks worked on

2. Debugging spike at phi = 0 in the Sim BIB

    This came from the ML model being “too good” at modelling phi = 0 BIB, and thus too many of those samples passed the detector mask.

    Seems like this can be mitigated by conditioning on fewer detector system indices.



Progress so far: BIB generation

Tasks worked on

3. Running digitization and reconstruction on the ML BIB samples (10%)

    We get similar numbers of SiTracks from ACTS with the ML BIB as we do with the Sim BIB.

    We get 1 refitted track with the Sim BIB and 0 with the ML BIB.

    In general, we are continuing to understand the difference between the nuGun samples (v7) and the 10% ML BIB.