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RNN-based track finding in the Fermilab Muon g-2 experiment

Tuesday, 13 July 2021 15:45 (15 minutes)

We report on the development of a track finding algorithm for the Fermilab Muon g-2 Experiment's straw tracker using advanced Deep Learning techniques. Taking inspiration from original studies by the HEP.TrkX project, our algorithm relies on a Recurrent Neural Network with bi-directional LSTM layers to build and evaluate track candidates. The model achieves good performance on a 2D representation of the Muon g-2 tracker detector. We will discuss our targets for improving efficiency and performance, and plans towards application on real data via training on a synthetic dataset.

Are you are a member of the APS Division of Particles and Fields?

Yes

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