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## Track Matching Using ML Techniques in the ALICE Muon Forward Tracker

Accurate track matching is vital for reconstructing particle trajectories in high-energy physics. In ALICE at the LHC, the upgraded muon tracking system combines data from the Muon Spectrometer with the new Muon Forward Tracker (MFT), a highly segmented silicon pixel detector positioned near the interaction point before the hadron absorber. With the MFT recording orders of magnitude more tracks than the spectrometer, we developed a refined machine learning-based matching method trained on Monte Carlo data. A subsequent data-driven approach will be explored to address potential limitations of Monte Carlo training. These enhancements aim to improve muon track reconstruction in ALICE, thereby supporting more precise physics analyses.

### Apply for student award at which level:

MSc

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Yes, I ACCEPT

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