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Exploring the DNN Performance in Jet Physics

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Since the machine learning techniques are improving rapidly, it has been shown that the image recognition technique can be used to detect jet substructure. And it turns out that deep neural networks can match or outperform traditional approach. To push it further, we investigate the Recursive Neural Networks (RecNN), which embeds jet clustering history recursively as in natural language processing, with particle flow information implemented. In this way, we can have the data input in a most complete and effective way. We show its performance in jet observables and indicate its potential in helping detect Higgs signals at the LHC.

Presenter: CHENG, Taoli

Session Classification: The ”energy frontier”: LHC and future colliders