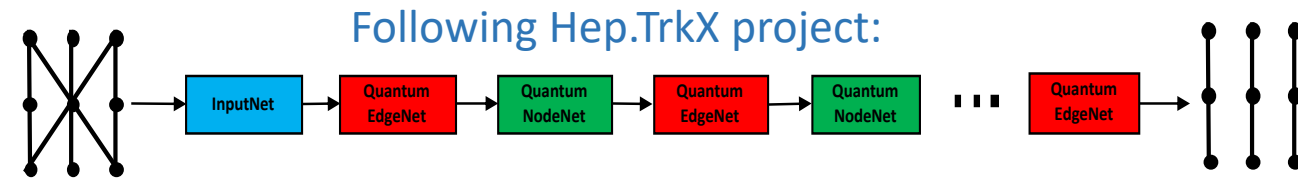


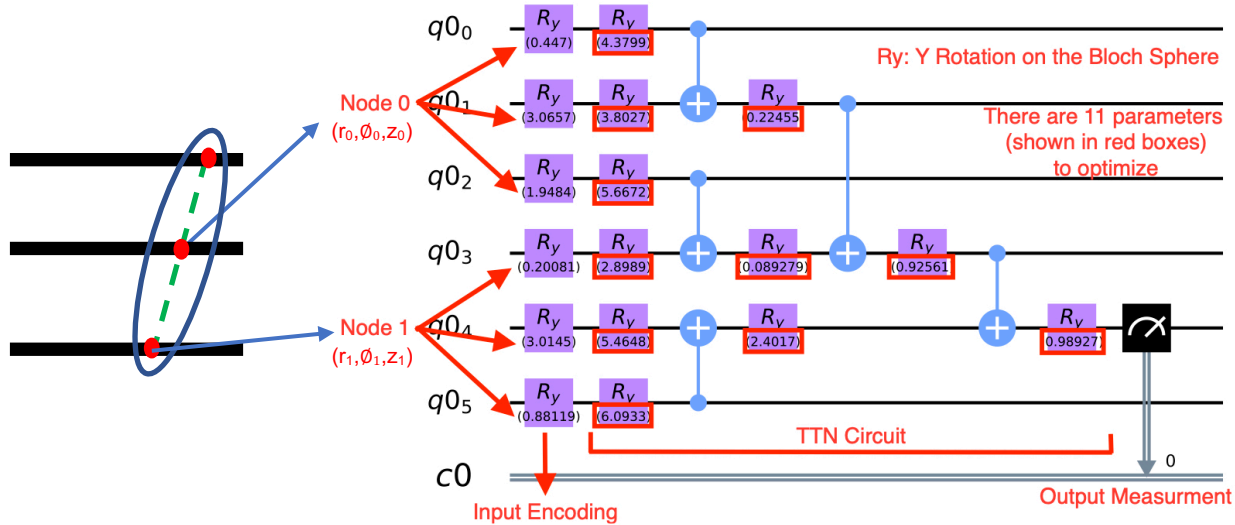
A Quantum Graph Neural Network Approach to Particle Track Reconstruction

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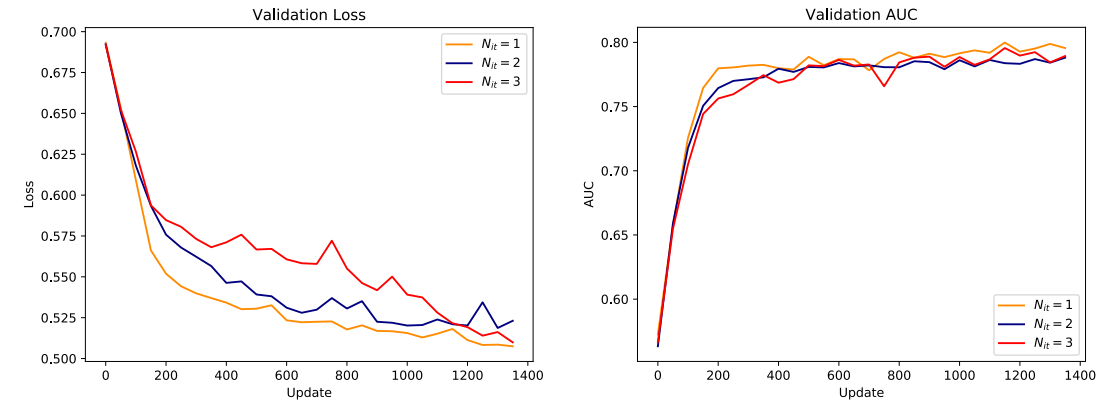


Simple Quantum Edge Network



Very first results were presented at CHEP2019: ArXiv: [2003.08126](https://arxiv.org/abs/2003.08126)

Training with single epoch



Training set: 1400 subgraphs, Validation set: 200 subgraphs, using ADAM, binary cross entropy, lr = 0.01, shots = 1000.
Hidden Dimension Size = 1.

Conclusions:

- Promising results with simple models (the above model has 41 trainable parameters)
- More complex models can perform close to AUC = 1.0
- Simulation times are pretty long.
- No Quantum Advantage is shown.

