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Finetuning Foundation Models for Joint Analysis Optimization

Wednesday 2 October 2024 15:00 (45 minutes)

This talk highlights the significant gains in performance and data efficiency that can be achieved in HEP by moving away from the standard paradigm of separate reconstruction and analysis optimization. We introduce the key idea of fine-tuning a foundation model as a generalization of choosing working points in a physics analysis. The sensitivity gains achievable from end-to-end pipelines are demonstrated in an example with a heavy resonance decaying to a di-Higgs to four b-quark system from the Open CMS dataset with a ParT backbone taken as the foundation model.

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Session Classification: Foundation Model MiniWorkshop