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Imaging Quarks and Gluons: From Global Analyses to AI-Driven Insights

Reconstructing the internal quark and gluon structure of nucleons and nuclei is a central goal of the JLab 12 GeV program and the future Electron–Ion Collider. Achieving this goal is a formidable challenge that demands the integration of theory, experiment, and data science. In this talk, I will present recent progress by the JAM Collaboration toward this mission and highlight emerging opportunities enabled by advances in AI and machine learning.

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