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Extracting Proton 3D structure with AI: Highlights of the EXCLAIM project

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Recent advances in nuclear theory, QCD phenomenology and experiments at the future EIC could soon lead us to both penetrate and visualize the deep structure of visible matter, answering questions that could not even be afforded before. In particular, deeply virtual exclusive experiments are believed to be probes of the orbital angular momentum of the proton's constituents, as well as of its 3D spatial structure. I will present results of the EXCLUSives with AI and Machine learning (EXCLAIM) program centered on going beyond simple regression analyses that allow us to gain information from experiment from a quantitative analysis of the underlying correlations in the data.

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