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ARTIFACT: AI-Driven Optimization of Accelerator Systems

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The ARTIFACT project leverages AI to enhance tuning, calibration, beam focusing, and anomaly detection in accelerator systems. By developing an advanced AI framework, the project aims to improve the efficiency and precision of accelerator operations across various scientific applications. A key feature is the creation of a unified metadata schema to structure and separate metadata from different accelerators, enabling cross-system analysis and optimization. This will allow for real-time monitoring and enhanced model performance, driving innovation in fields like high-energy physics, materials science, and medical research.

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