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## Real-time ML-based anomaly detection with FPGAs at the LHC

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At the LHC, collision data events are produced every 25 ns. To handle these large data streams, the CMS trigger system filters events in real time. The first stage of that system, the Level-1 trigger, is implemented in hardware using FPGAs. We present a novel ML-based anomaly detection algorithm that has been integrated in the Level-1 Trigger and successfully taken data during the 2024 pp collisions of CMS.

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