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## Machine learning based classifications on FPGAs

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In modern high energy physics experiments, one of the biggest challenges is handling an enormous amount of data in a short time period. This is important to achieve higher statistics while keeping the modest data throughput rate with sustainable resources. In COMET Phase-I, which is searching for the muon to electron conversion with a highly intense muon beam, we are going to implement the machine learning based classifications in order to perform a primary event selection with high precision with a fast processing time at the level of sub-microseconds. Recently, we successfully implemented a simple neural network into the commercial middle-end FPGA and evaluated the classification performance. We will report the result and future prospects.

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