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Machine Learning in Velo LHCb monitoring and calibration in Run I and II.

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Studies of High energy physics rely on cutting edge technology of particle detectors. These detectors are working under harsh conditions of constant radiations, and their operation must be strictly supervised to achieve maximum efficiency and quality of data taking. The LHCb's Vertex Locator is a strip silicon detector used in Run I and II of Large Hadron Collider. We study the application of machine learning algorithms for some of the monitoring and maintenance tasks. In this work, we present solutions based on data taken during Run I and II, that should inspire similar methods for new VeloPix detector in run III in 2021.

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