PHYSICS

ARTS AND SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE students

APPLICATION DEADLINE: 03/01/2023

PROJECT TITLE: <u>Machine Learning for High Energy Physics</u>

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Project Description

The student will help develop machine learning algorithms for the LHCb experiment at CERN to replace the most computationally expensive parts of the event pattern recognition algorithms;to increase the performance of the event-classification algorithms; and to reduce the number of bytes persisted per event without degrading the physics performance. The student should have significant Python programming experience, be comfortable with multidimensional calculus, and have some college-level experience with probability and statistics. Knowledge of physics at the level of the freshmen-level calculus-based course will be useful, but is not necessary.