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Fink

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The Legacy Survey of Space and Time (LSST), using the Vera Rubin Observatory LSST Camera at the Simonyi Survey Telescope, aims to survey the southern sky deeper and faster than any wide-field survey to date. Starting in 2024, and for its 10 years of operations, LSST will enable the discovery of an unprecedented large number of astrophysical transients, opening a new era of optical big data in astronomy. Among several challenges, the alert rate forecast for LSST will be at least one to two orders of magnitude larger than any survey to date and it will trigger on typically fainter objects, making it impossible for currently available systems to operate efficiently. In addition, the next decade will see detectors more sensitive to gravitational waves and neutrinos, and new instruments will allow a thorough search of a large part of the sky and a large part of the electromagnetic spectrum, paving the way for multi-messenger astronomy at scale. Fink is an LSST community broker specifically developed to address all these challenges. Designed for fast and efficient analysis of big data, Fink encompasses historical developments and adds state-of-the-art machine learning techniques to generate classification scores for a variety of time-domain phenomena from solar system science to galactic, and extra-galactic science. I will briefly summarize the status of the project, present the current scientific results on the ZTF data stream, and future plans towards Rubin.

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