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Fink broker, enabling time-domain astronomy with ML

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Next generation experiments such as the Vera Rubin Observatory Legacy Survey of Space and Time (LSST) will provide an unprecedented volume of time-domain data opening a new era of big data in astronomy. To fully harness the power of these surveys, we require analysis methods capable of dealing with large data volumes that can identify promising transients within minutes for follow-up coordination. In this talk I will present Fink, a broker developed to face these challenges. Fink is based on high-end technology and designed for fast and efficient analysis of big data streams. I will highlight the state-of-the-art machine learning techniques used to generate early classification scores for a variety of time-domain phenomena including supernovae and microlensing events. Such methods include Deep Learning advances and Active Learning approaches to coherently incorporate available information, delivering increasingly more accurate added values throughout the duration of the survey.

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