For expanded coverage of this month's topic "Machine Learning," you can find the following paper in the Digital Edition. Visit the SMPTE digital library at http://journal.smpte.org to access the issue and to read this additional paper.

Realtime Semantic Enrichment of Video Streams in the Age of Big Data

By Maurizio Montagnuolo, Paolo Platter, Alessio Bosca, Nicolò Bidotti, and Alberto Messina

This paper describes AgileRAI, a framework for searching, organizing, and accessing multimedia data in a fast and semantic-driven way. AgileRAI supports realtime ingestion of video streams on which different machine-learning techniques (such as global and local visual features extraction and matching) are applied in a parallel and scalable way. Extracted features are matched to a reference database of visual patterns (e.g., faces, logos, and monuments) in order to produce a set of meta tags describing the ingested contents. Furthermore, these tags are semantically enriched using open semantic data repositories. The system is designed with a scale-out pattern architecture based on Apache Spark, ensuring high performance in Big Data management environments.

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