In this paper, we propose a semantic routing and filtering framework for large-scale monitoring of video streams. Our goal is to build a distributed system that at any given time is capable of simultaneously monitoring the content of multiple video streams being transmitted over the Internet (or a proprietary network). A key design requirement of such a system is the ability to handle tens of gigabytes of multimedia data per second. Traditional techniques have an important limitation. Once a bottleneck in terms of CPU or storage is reached, data is dropped indiscriminately. In this paper, we propose distributed real-time semantic filters to route and filter video data. We propose a mechanism to alter the accuracy of classification with the complexity of execution; thus avoiding system failure during periods of overload. We propose a set of novel video features that perform better than our previous semantic classifiers. This system is capable of classifying over a hundred concepts.
SEMANTIC ROUTING AND FILTERING FOR LARGE-SCALE VIDEO STREAMS MONITORING (FriAmPO1)

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Abstract (cont.):
Experiments on 190 hours of pre-stored and live video streams validate the effectiveness of the proposed system.