Abstract

Software Framework for Hosting Component Video Analytics Engines

In this patent application, we propose an efficient software framework to host component video analytics engines, such as face recognition, license plate recognition, vehicle detection and classification, intrusion detection, attribute detection and so on. The system is designed for real-time robustness and efficiency. The system must take advantage of data parallelism and task parallelism with multi-GPU structure to achieve the fastest processing. It also allows programmers and video analytics vendors to focus on the algorithm instead of software architecture. The software framework is in-built with anti-lock systems. When we are adding more and more modules, as computing resource is limited, the system will hang if it cannot meet the ‘deadline’ of producing the result. With the framework, the system will continue to function by destroying the bad processes and have “guaranteed response” as in any real time system. The designed system has high run-time robustness, which means that, when one modular video analytics engines does not work, other ones will still function. System bottleneck identification and profiling which is able to show insights into the system and where the problem might occur.

(Figure 1)