Integrating Computer Vision Libraries in Networked Robotic Systems

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The niche where computer vision software meets networked robotics remains unfilled so far. Descending costs, and technological advances in wireless communications, digital video capture, and computing power provides roboticists with powerful yet affordable tools to develop cooperative, distributed, vision-based control tasks. This paper presents a consistent framework for such networked, visually-controlled environments, where the main assumption is that video may be captured, processed, and used for control in different machines across the network. To do so, care has been taken in order to ensure efficiency, scalability, and reusability of software. The presented framework aims to seamlessly integrate rock-solid, fast, existing vision processing libraries within a cross-platform, distributed environment, based on Java and agents. Different applications in real setups are envisioned.