

Simple Object Tracking

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Tracking is an important part of many Computer Vision applications. Tracking the instructor in the physical classroom can be used to enhance the realism of the Distance Learning system by updating the image of the virtual classroom according to the position of the instructor. Since face tracking is too hard a problem to be implemented in a straightforward way, a simpler task is first studied - tracking a small and regular red ball - to gain insight. The approach taken is to learn the colors of the ball pixels and to compute a "signature" of the ball image offline and then to attempt to match it at a number of positions in a new image. Simple color clustering and a color histogram are used and they enable the detection task to be performed at high speeds (approximately 12 fps). We plan to use a similar approach to face tracking, but new problems will have to be dealt with, such as dynamically updating the signature and color set and using information from two simultaneously acquired images.