Chapter 1

Introduction

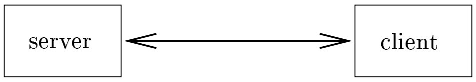

Figure 1.1: Thinwire model.

We are interested in the visualization of large images across a network. Upon request, the *server* sends an image across the network to the *client*, who in turn, presents this image to the *viewer*. As the network is of relatively low bandwidth, we call it a *thin wire* (Figure 1.1). A usual practice under this setting is progressive transmission where a low resolution image is first sent across and it is then progressively and uniformly refined (Figure 1.2). A key observation is that, at any moment, the viewer is only interested in a region around a point (the *gaze point*) in the image. To exploit this, we give a scheme where the viewer interactively indicates this region and the selected region has higher priority in the refinement process (Figure 1.3). As a result, the displayed image in the client-side does not has uniform resolution. We call such image a *space-variant* image and call the scheme *interactive progressive transmission*.