

Ubiquitous Stereo Vision (USV)

● Contact-free, position-free, human interface - Manipulation by actions

AIST develops technologies able to detect and identify multiple individuals, to perform real-time recognition of their intentions indicated by gestures. This is accomplished by using stereo cameras arranged at multiple points (ubiquitous computing environment) and a high-speed network system. The aim of this research is to realize a real-time human centered interface, by simply placing stereo cameras at suitable points in the environment. The system permits the user to be at any position or to perform natural movements, and requires no contact with any object in the environment. To implement the system, four stereo cameras are placed in the four top corners of an experimental room (4.5 m × 3.6 m). The objective of this research is to develop technology able to detect and identify a specific person from others who enter and leave the area, to recognize the person's actions, thus providing real time personalized interaction through specific gestures.

● A variety of real world applications

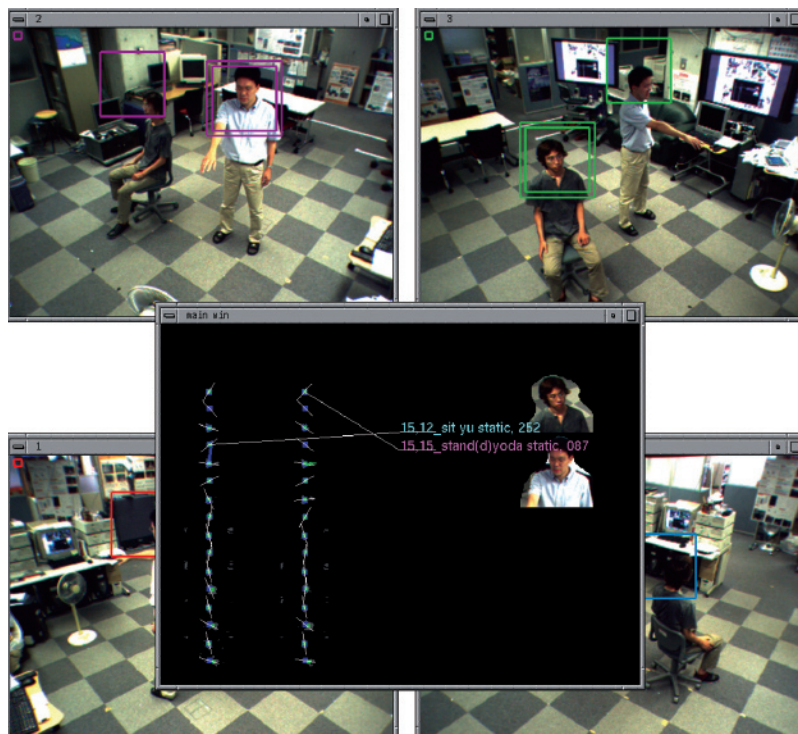
Regarding daily-assistance in indoor environments, AIST has

Human interface with a personal identification function

The system captures and utilizes 3-D images of the human body to recognize the posture and arm pointing gestures of the users. The image closest to the full-face view is automatically selected for each individual and used for personal identification.

succeeded in the development of human interface with personalized identification abilities. The function of the system is effective at any place in the room and not limited to any particular space. The system enables the user to manipulate the electric appliances in an ordinary room by arm pointing gestures without any touching and special devices.

Furthermore, safety enhancement in public places such as on train platforms is another important area to which the technology can be applied.



Real time, 3D integrated images via next generation cameras

The figure is a 3D view of a room constructed with 3D data sent by four network-linked stereo cameras and integrated at a rate of 12 frames per second. This is applied to the real time recognition of body postures and movements.