

Multi-Camera Target Tracking

Thesis outline

More and more surveillance equipment (cameras) are being installed in public environments. The magnitude of the data which is produced makes it impossible to process all this information in real time by life persons. Therefore, automated image interpretation methodologies are required. One aspect of this image interpretation is to detect persons (humans) in images, which has been done in the past at the Unmanned Ground Vehicle Centre.



A second issue is that these persons need to be followed (tracked) throughout multiple cameras installed in the same room / environment. The cameras therefore need to share information to pass the task of following the person from one to another. An important aspect is that the same person should be identified uniquely in all camera views to avoid misinterpretations.

An application of this technology is for example a people-counting system, which monitors the number of people in a room.

Student Tasks

The student will receive the following:

- Multiple cameras
- Source code (C++) for grabbing images from these cameras
- Source code (C++) for detecting persons in these images

The student is requested to output the following:

- Implement a methodology for multi-camera target tracking
- Install the cameras on a fixed location in the lab as a demonstration
- Demonstrate the performance of the tracking system by developing a people-counting surveillance system

Student Profile

- Knowledge of programming C++
- Sound interest in computer vision