POSITION AVAILABLE

Center for Biological & Computational Learning, E25-201
Dept. of Brain & Cognitive Sciences, MIT

Position: ITRI Fellowship for UROP/Masters/PhD position

Project Title: “A Vision System for Surveillance (Intelligent Visual Surveillance Technology)”

Description: The goal of this project is a study into visual recognition of humans using multiple modalities, cues, and views. We will experiment with elements of a system for recognition. A trainable module will detect, categorize and identify people and classify and recognize facial expressions for applications such as surveillance, smart man-machine interfaces, video conferencing, puppeteering and virtual newsreaders. Classification in our system will be based on the Support Vector Machine technology, which has been demonstrated effective for recognition across several visual modalities. Our system will provide optimal recognition performance in detecting a target individual visiting a sensitive site. The system will have the following capabilities: 1) It can be trained to detect specific moving objects (such as faces and people). This technique is essential to object recognition and teleconference. 2) It can identify trained objects such as faces. This technique can be applied to monitor the user’s identity in a surveillance application. 3) It can detect and recognize facial actions (such as eye’s opening and closing). This technique can be used to drive the synthesis of facial expressions.

Requirements: The applicant must know Matlab and Visual C++ well; experience with numeric programming is also useful. To work on this project, he/she needs to have experience with machine vision and machine learning. (This project is suitable for an advanced undergraduate, master or beginning Ph.D. student.)

Start Time: As soon as possible.

Duration: 1/1/02-12/31/03

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