## ELE700 / ELE800: Project Design 2004/2005

# Topic:

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Faculty lab coordinator:		Faculty advisor: Lev Kirischian
Estimated cost: \$ 250	Project rating: Average	Date: September 2004

#### **Title: ROBOT FOR PRESENTATIONS**

#### Preamble:

At presentations or exhibitions etc. it is usual situation when it is necessary to show real objects: machines, devices or units with the explanation of the purpose of their components and principles of operation. Normally presenter does that many times during a day. On the other hand movie or any other virtual presentation cannot give real imagination of a real object and it's functioning. Robot that can replace a human in this routine job may be the best solution. Equipped by the laser pointer in his "hand", robot can be programmed for demonstration of the object components with voice explanation of their purpose and operation principles. Being interfaced with PC or Laptop robot can coordinate his motions with slides demonstration using MS PowerPoint software. These features allow robot can repeating presentation as many times as it is necessary. Plus, robot itself can attract people's attention and increase interest for presenting object.

#### Objective:

Develop and design mobile robot-presenter that can speak, move, use laser pointer and synchronize his motions with PPT-slides demonstration. This robot can "learn" presentation procedure after simple training conducted by operator without any special programming procedures or special devices.

#### Partial specifications:

This project consists of two parts schedule for two students:

- 1. Mobile robotic platform with RISC-controller based local control system;
- 2. PC-based host with GUI software interfaced via API to Power Point software.
  - Use Microchip RISC-controller PIC16F877;
  - Apply Visual Basic or Java for GUI software development and PPT interfacing

### Suggested approach:

- Conduct literature survey on robotic systems for multi-media presentations
- Develop of low-cost control system on the base of RISC embedded controllers
- Develop GUI software and interface with Power Point software system
- Built and test robotic platform and interface it with host PC via RF-communication line