Internet-Based Control

09:00-11:00
Chair: Choi Gi Sang (Seoul Univ.)
Room: C105
Co-Chair: Sumalee Unhavanich (King Mongkut Institute of Technology)

09:00 - 09:20  I-FA01-1
Internet Teleoperation of a Robot with Streaming Buffer System under Varying Time Delays
J.-H. Park and J. Kwon
(Hanyang Univ.)

09:20 - 09:40  I-FA01-2
Design and Implementation of Internet-based Teleoperation Control System
Jin-Woo Park, and Jang-Myung Lee (Pusan Univ.)

09:40 - 10:00  I-FA01-3
Microcontroller-Based Liquid Level Control Modeling
Toerasilapa DUMAWIPATA, Sumalee UNHAVANICH, and Worapong TANGSRI RAT
King Mongkut’s Institute of Technology North-Bangkok (KMITNB)
This work presents a design technique for the implementation of the liquid level control system by based on the use of a single-chip microcontroller. The proposed model system offers the following attractive features: (1) application of the pressure transducer for sensing the height of liquid in tank (2) using the obtained liquid level for defining on-off condition of the water pump (3) the liquid values were controlled by using stepping motors for controlling of 57 points (4) can set up by using manual control or automatic control (5) can monitor and display the process status either on microcontroller-based control board or on the computer via RS232 serial-port. Experimental results have been employed to show the effectiveness...

10:00 - 10:20  I-FA01-4
Web-based Distribute Control Networks
Kiwon Song, Jonghwi Kim, Gi Sang Choi (Univ. of Seoul) and Gi Heung Choi (Hansung Univ.)
Requirements for device control networks differ greatly from those of data (business) networks. Consequently, any control network which uses a fieldbus protocol is, in general, different from IP network protocol TCP/IP. One then needs to integrate both fieldbus protocol and TCP/IP to realize distributed control over IP network or internet. LonWorks technology provides networked intelligent I/O and controllers which make it a powerful, expandable solution. Connecting these remote LonWorks networks to the Internet can provide a powerful, integrated, distributed control system. This paper suggests a basic concept that be applied to distributed control over IP network or internet. Specially, LonWorks technology that used LonTalk protocol is reviewed as device network and...

10:20 - 10:40  I-FA01-5
IP-based UPnP Control of Network-enabled IEEE 1394 Devices
Soo-Kyung Yang and Jong-An Park
(Chosun Univ.)
There are lots of wired and wireless home network technologies these days. However, an effective middleware is needed to control devices in home regardless of any kinds of home network technologies applied. We can integrate and simply control all the home appliances using the architecture that leverages TCP/IP and Web technologies, which is like UPnP control technology. This is UPnP technology and IEEE 1394 technology are introduced.. and also UPnP over 1394 is issued. Some results from the implementation show that it is possible to control IEEE 1394 devices using the IP-based UPnP technology instead of just using a direct AV/C command set. So, in the experiment, implements the modeling of the UPnP-enabled IEEE 1394 device which is not present for real. Therefore, promising...

10:40 - 11:00  I-FA01-6
Precision Control X-Y Table Using Dual Modulus Technique
V. Tipsuwanporn, C. Mitravakin, P. Ukokimaparn, S. Kulpachich and V. Konfratana (King Mongkut’s Institute of Technology Ladkrabang)
This paper presents the control X-Y table being the precise movement by point-to-point in the x-y plane. The dual modulus technique is used for our system to control the frequency of pulse supplied to the motors. Such technique is used to stop motor of both axes accurately as the desired target point in the same period. Both motors are stepping motor. To improve steps per revolution, we employ ministep form to drive motors. In system, personal computer, using parallel port, is used for computing algorithm in open-loop form to control motors. In experiment, our system applies on the X-Y table for drawing to test system performance.