10:10-12:10
Chair1 : Chaeyoun Oh (Chonbuk National Univ., Korea)
Room : Base 1st Floor-Inntal
Chair2 :

10:10 – 10:30   **SA02-1**

A Controller Design for Teleoperated Systems with Signal Transmission Time Delay

Sung Ho Ahn, Jae Hyun Jin, Byung Suk Park, Ji Sup Yoon(KAERI, KOREA)

When the teleoperated system has a signal transmission time delay between slave and control system, the system stability as well as the position tracking and the force reflecting performances are likely to be deteriorated. This paper proposed a bilateral control scheme and a controller design method for the teleoperated control systems with a signal transmission time delay. The proposed controller is a modified type of smith predictor for the time delay in each input and output stage of an open loop unstable plant. The proposed controller not only satisfies the system internal stability but also improves the position tracking performance with disturbance rejection capability. The simulation ...

10:30 – 10:50   **SA02-2**

A Study on a workpiece characteristic indentification in a force feedback teleoperation

Chaeyoun Oh, Kiho Kim, JangJin Park(KAERI, KOREA), Hyokjo Kwon(Chonbuk Nat'l Univ., KOREA)

● Introduction
● Teleoperation System
● Stiffness Identification
● Frictional Characteristic Identification
● Conclusions

10:50 – 11:10   **SA02-3**

A Force-Force Control Technique of a Teleoperation system for Wiping Work

Chaeyoun Oh, JiMyung Jun, Hyokjo Kwon(Chonbuk Nat'l Univ., KOREA), Heegeun Oh(KRISS, KOREA), Kiho Kim(KAERI, KOREA)

● Introduction
● Teleoperation System for Wiping Operation
● Virtual Force Generation Algorithm
● Virtual Velocity Generation Algorithm
● Force-Force Control Technique
● Experimental Results and Discussion
● Conclusions
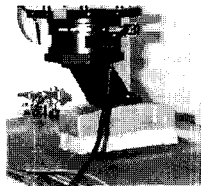
11:10 – 11:30   **SA02-4**

Development of an Embedded Vision Platform for Internet-based Robot Control

Tae-Hee Kim, Jae Wook Jeon(Sungkyunkwan Univ., KOREA)

● In case of using overhead camera system, mobile robot moves under static working area.
● Mobile robot must use onboard camera system to work under wide working area.
● Mobile robot must have wireless LAN to remove restriction of movement.
● Onboard camera system must have wireless LAN environment.
● We develop embedded vision platform using onboard camera.
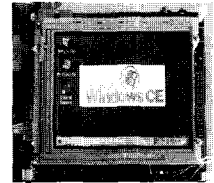
11:30 – 11:50   **SA02-5**

Improved Image Feedback Scheme for the Control of Telerobotics Equipment

Jong Kwang Lee, Byeong Nyeon Kim, E-Sok Kang(Chungnam Nat'l Univ., KOREA), Ji Sup Yoon(KAERI, KOREA)

In remote control of telerobotics equipment, the real-time visual feedback is necessary in order to facilitate real-time control. Because of the network congestion and the associated delays, the real-time image feedback is generally difficult in the public networks like internet. If the remote user is not able to receive the image feedback within a certain time, the work performance may tend to decrease, and it makes difficulties to control of the telerobotics equipment. In this paper, we propose an improved visual feedback scheme over the internet for telerobotics system. The size of a remote site image and its quality are adjusted for efficient transmission. The constructed system has a be...

11:50 – 12:10   **SA02-6**

Adaptive Scaling Based on Vision in Micromanipulation

Jaehoon Lee, Jong-Oh Park(KIST, KOREA), Pil Sang Yoon, Seok Joo Lee(Korea Univ., KOREA), Jong Hyeon Park(Hanyang Univ., KOREA), Kyunghwan Kim(Wooshin Mechatronics Co. Ltd., KOREA)
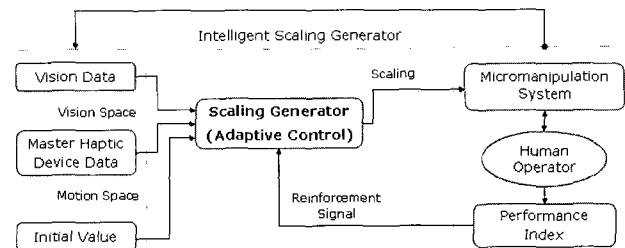
● Concept of Adaptive Scaling Factor
● Initial Value and Boundary Conditions
● Adaptive Scaling Factor
● Simulation and Experimental Results