13:00-13:50   **Chair : Huh Uk-Youl (Inha Univ.)**
Room : Terrace(3F)   **Co-Chair : Kim In Won (Konkuk Univ.)**

13:00 – 13:50   **D-FMP-25**

Design of Input/Output Interface for ARM/AMBA based Board Using VHDL

Dong-Wan Ryoo, Jeon-Woo Lee
(ETRI)

At the present time, multimedia chip, internet application, and network equipment is designed by using ARM core. Because it has a good debugging, software compiler and needed low power. We must process a data coding to send a multimedia data by real time. So need to connect software and hardware algorithm. In this research, We design interface for ARM9/AMBA based board using VHDL for these function implementation. The board is used the ARM company's ARM940T for software function implementation and Xilinx company's Virtex E2000 for hardware function algorithm. The various hardware algorithm(ME,ME,DCT) block for performance can be implemented on this system

13:00 – 13:50   **D-FMP-26**

Tracking of an Object using Image Processing through JAVA

Chang Ho Ji, Lee Dong Youp, Jeong Seung Gweon, Chang Yu Shin, Lee Man Hyung(Pusan National Univ.) Bae Jong Il (Pukyong Univ.)

This paper's purpose is to obtain tracking information of an object using a camera. This system embodies to know tracking information of an object using Kalman filtering. As we use java program, it is possible to make system regardless of operating system, set up the system. We used an comfortabe USB port camera everywhere without the capture board. We can use the internet by using the applet and JMF everywhere. We regard the camera as fixed.

13:00 – 13:50   **D-FMP-27**

A Study on Development of 3D Outsole Profile Scanner for Footwear Bonding Automation

Lho Tae-Jung, Park Pil-Gyu, Suh Jong-Chul(Tongmyong University of Information Technology), Park Dong-Joo(Nanux Co.), Ahn Hee-Tae(Inner Tech Co.)

A 2-dimensional scanner have been generally used for an office, but 3-dimensional one was seldom used in industry. A footwear bonding process has been operated manually by the skilled operators, but it is needed to be operated automatically. So we developed an automatic outsole profile scanner, which consists of PC, CCD camera, laser beam diode and moving mechanism, to scan automatically the 3-dimensional profile of outsole inner face to be bonded. Here the developed algorithm makes 2D image into 3D outsole profile. This profile will be used enough to bond automatically the outsole to something like leather or clothes.

13:00 – 13:50   **D-FMP-28**

Optimal Path Planning Using Critical Points

Lee Jin-Sun, Choi Chang-Hyuk, Song Jae-Bok, Chung Woo-Jin (Korea Univ.) , Kim Munsang(KIST)

A lot of path planning algorithms have been developed to find the collision-free path with minimum cost. But most of them require complicated computations. In this paper, a thinning method, which is one of the image processing schemes, was adopted to simplify the path planning procedure. In addition, critical points are used to find the shortest-distance path among all possible paths from the start to the goal point. Since the critical points contain the information on the neighboring paths, a new path can be quickly obtained on the map even when the start and goal points change. To investigate the validity of the proposed algorithm, various simulations have been performed for the environment where the obstacles with arbitrary shapes exist. It is shown that the optimal paths can be found with relative easiness.

13:00 – 13:50   **D-FMP-29**

Measurement of Vibration Using a 3-facet Mirror

Park Won Shik, Cho Hyung Suck(KAIST), Byun Yong Kyu(SAIT)

A new measurement method to measure vibrational motions of objects is presented. The original principle is similar to the previous work that utilized a 3-facet mirror to obtain three dimensional positions and orientations of rigid bodies. While the previous work was presented for only stationary objects, in this paper, we newly investigate the feasibility of this method for dynamic applications. The 3-facet mirror that looks like a triangular pyramid having an equilateral cross-sectional shape. The mirror has three lateral reflective surfaces inclined 45 degrees to its bottom surface, and is mounted on the object whose motion is to be measured. As optical components, a He-Ne laser source and three position-sensitive detectors(PSD) are used. The laser beam is emitted from the He-Ne laser source located at the upright position and vertically incident to the top of the 3-facet ...

13:00 – 13:50   **D-FMP-30**

A Development ATCS for Automating the Stacking Crane

Choi Sung Uk, Lee C.H.,Kim Jung Ho, Lee J.W. Lee Young Jin, Lee Kwon Soon,
(Donga Univ.)

During the operation of crane system in container yard, it is necessary to control the crane trolley position and loop length so that the swing of the hanging container is minimized. Recently an automatic control system with high speed and rapid transportation is required. Therefore, we designed a controller to control the stacking crane system.