

が活動する場面に応じて最適な形、機構を考えていく方法は、ある意味でヒューマノイドと対極のアプローチであり、「鉄腕アトム信仰」に対する切れ味の良いカウンターパンチとも言えるだろう。

プレゼンテーションでは、広瀬研究室で今まで作り上げてきた数々のシステムの紹介が行われ、最新の成果のビデオまで気前よく見せてもらえた。ヘビ型移動ロボット、歩行 ↔ 車輪型変形移動ロボット、恐竜型歩行ロボット、螺旋型水中移動ロボットなどが一堂に紹介される様子はまさに圧巻であり「うーん、かっこいい！」と思わずうなってしまう。機能性の追求によるユニークなメカニズムの発案、設計と実現は、もはや芸術の域に達しているように感じられた。

## ◆参加報告 3 ICAT 3日目

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On the last day of the ICAT, I had been busy listening to the presentations and having a technical tour. In the morning, four reporters presented their excellent papers, which were concentrated on the application by using virtual reality technology. Many good demonstrations allowed us more easily understand their work. Except papers, there was also one keynote. Thick academic atmosphere was full of the conference all-long.

The first presenter, Moez Bellamine of Kyushu Institute of Technology, introduced a remote maintenance and fault diagnosis system by using the virtual reality techniques. Then, Kazuhiko Kobayashi of Chiba University, proposed a welding simulator for industrial applications, which is an application with VR technology for training. The third presenter, Kenji Funahashi of Nagoya Institute of Technology described how to interactively manipulate the liquid in virtual reality. Their proposed system showed the possibility of catching, holding and spilling the liquid by using a virtual vessel. After that, The Gifu MVL Research Center and Tokyo University demonstrated their plate window manager system, which was called pwm system for short. It is said that in their virtual 3D space environment, pwn user could manipulate plates including position and orientation

(6DOF) by using their NINTENDO 64 controller as an input device which is a mouse with many different buttons. Finally, professor Kwang Yun Wohn, who was from Korea Advanced Institute of Science and Technology, gave a wonderful closing keynote on his reflection on almost 12 years of egocentric endeavor.

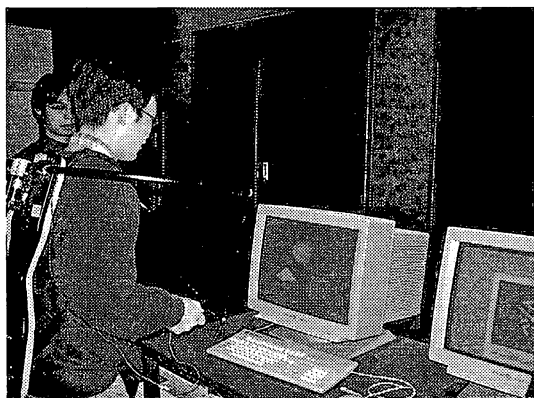
### ◆ Technical Tour

In the afternoon, I first visited the Nakamura-Okada Laboratory, many kinds of robots such as humanoid robot and medical robot attracted my attention, some of them walked like a human being with "legs", some of them had peculiar "hands" and "eyes". Apart from robots their developed virtual human software system were shown to us.

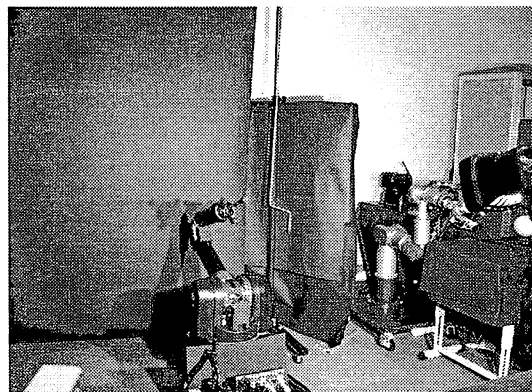
In the Gifu MVL Research Center, there were many advanced equipment such as big graphics workstation, network servers, immersive projection technology display COSMOS and so on. In their virtual 3D space projected by an immersive multi-screen display, by wearing glass I could not only see many floating plates but also put the plates to the place what I wanted just like what were demonstrated by their presentation.

Finally, in Tachi Laboratory what impressed me was two teddy bear-like robots, when one of them acted, such as raising hand and nodding head, another did the same action simultaneously. It was said that they were used in RobotPHONE system, when a user communicated with this system, one of the teddy bear could act as another, their research mainly focused on tactile information system, a projector based Augmented Reality system, Tele-Existence Master-Slave System, SmartTool, RobotPHONE and so on.

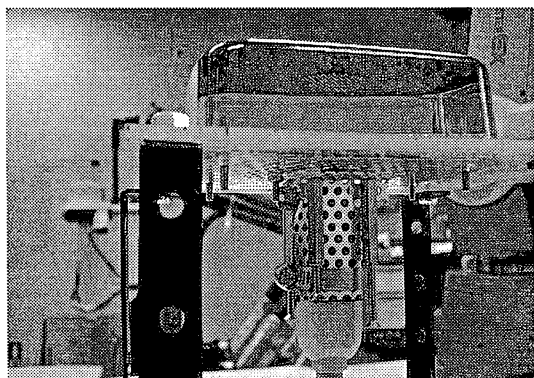
This technical tour let us see the various VR applications. I had been very excited when I immersed in the virtual world. I had the honor to join such top-level international conference. During the short three days, I learned very much from the reporters and technical tour. I look forward to join the next ICAT.



廣瀬研究室の Haptic Gear



石川橋本研究室の高速把持システム



館研究室の触覚カメラ