Oct

- Gave seminar on “Multi-modal Mixed Reality and Tangible User Interface” at USC on 2nd Sept, 2006

- Developed Mixed Reality Tangible Navigator for George Lucas’ Building groundbreaking project. Secured US$20K from USC for the IDM lab. Once the funding is secured, working day and night for 3 weeks making the demo successful.

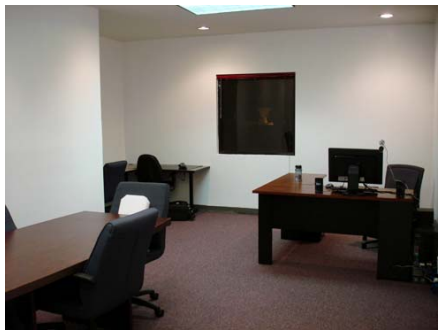
Testing demos overnight and setting up early in the morning

Demo attracted around three thousands visitors including famous Hollywood director George Lucas (who donated US$175M) and Steven Spielberg

Demo appeared on the huge screen on the stage where George was giving the talk

Nov.

1. Setup the lab space, furniture, PC, network, telephone line etc.



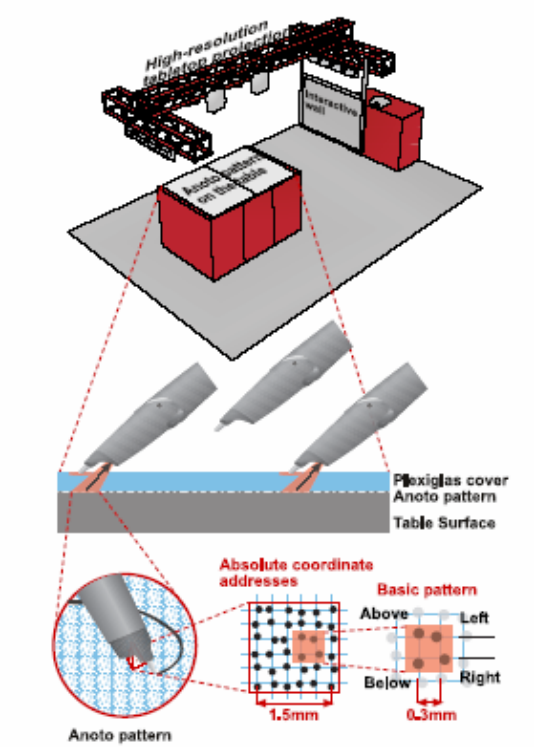
2. Continue working on the Lucas' Building demo – tested and fixed bugs – got it ready for a one-year exhibition at the building lobby.
3. Brainstormed about the projects, attended USC IDM faculty meetings on proposal discussions
4. Discussed and obtained initial approval from Prof. Fisher, Prof. Bolas, and Prof. Balsamo to work on a specific project which is part of the big proposal.
5. Started drafting the project proposal. Meanwhile, started testing the prototype from Austria. This project is a three parties collaboration among NUS, USC, and Upper Austria University of Applied Sciences, Austria.

Short Description about the project:

The current project which I am writing proposal for is called 24/7 – a project that will create life-size video conferencing + shared design space between two labs. It involves the technology of Gigabyte network, social computing, mixed reality, shared space, HCI design, Bluetooth, and optical tracking technology. The purpose is to make the collaboration as seamlessly as possible.

Video cameras are used to capture the activities happened in both design labs (USC and NUS for example). Each lab will have a wall-size projected screen showing the

life-size working area of the other lab. The video images taken from one lab will be transferred to another lab in real time with high resolution. Each lab has a physical table of the same looking, with the projected digital images on table top merged with the physical papers/objects on the table. Optical tracking pen with Bluetooth will be used to interact with the digital projected paper/object on the table. Any modification happened on one lab will be updated instantly on the other lab. Mixed reality vision-based tracking algorithm will also detect tangible objects on the table, report the position and orientation of the objects (virtual and physical) to the server. The server will then broadcast to all clients (can actually more than two) so that all design spaces are digitally shared and with instant audio-visual communications.



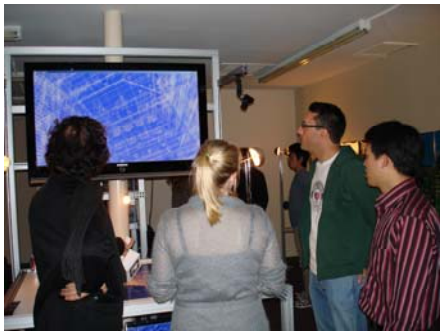
The life-size projection of work space in another lab is important as it extends own design space, resolves the psychological feeling of disconnection in traditional window-based video conferencing, merges the physical spaces visually, and creates the illusion of being in the same physical space. The tracking algorithms using pen and objects are crucial as they update the remote designers with the focus of local designers, update both sides with new designs that both parties are contributing, and refresh the position and orientation of the physical and virtual paper/object that both sides can refer to.

The system aims at running in 24/7 manner to allow a seamless collaboration happened at any time between two labs. The proposed system has the potential of becoming a very useful and ultimate solution for remote collaborations – while most of the current solutions only focus on video quality. The commercialization potential of the system is also obvious for universities and MNCs, as it can expertise remote

design process, save a lot of cost in traveling, hotel, administration, and most importantly, time.

Dec

1. Prepared demos and participated in the Open House Exhibition in Dec.




2. Attended the final presentation of the Project Immersive Entertainment Research Initiative.
   a) As reported before, this is a module carried out by Prof. Michael Naimark with USC Marshall Business School to research on Commercialization of Immersive Viewer – which the IDM lab may want to invest research on. I was invited to help in this module.
   b) I was helping the students in deciding the target market which is children's educational product, finding possible research directions and problems, and providing technical consultancy. I also helped students refining their presentations and commented on their results at the discussion sessions.


3. Finished the draft of ***Stereo AR*** proposal with Prof. Perry Hoberman before X'mas
4. Continued writing the proposal on ***24/7 Shared Design Space*** and submitted to Prof. Mark Bolas for his comments
5. Started learning Anoto® System which I think would be important component of ***24/7 Share Design Space*** project.