Lab's voyage officially begins

Over 180 guests gathered to celebrate the HIT Lab NZ's official launch conducted by the Minister of Economic Development Hon Jim Anderton in February.

Several world-leading researchers and representatives from government agencies, universities and prominent organisations around the globe attended the formal opening of the Lab on Monday February 17 2003. High profile international guests included representatives from Eastman Kodak, Battelle (Pacific Northwest National Laboratory); Infocom Development Authority of Singapore; National University of Singapore; University of South Australia; University of Osaka and Technical University of Vienna.

In his opening address, Mr Anderton said the HIT Lab NZ project was an ideal example of the kind of innovative technology New Zealand needed to foster if it wanted to be at forefront of global economics.

“It is a milestone in terms of the development of high-tech capability among New Zealand Business.”

Mr Anderton thanked HIT Lab NZ international director Professor Tom Furness, and HIT Lab NZ director Dr Mark Billinghurst, “for their belief in the potential of this project and their faith and commitment in turning it into a reality.”

Dr Billinghurst likened the opening of the Lab to the start of a “new voyage of exploration.”

“We invite you to join us on this journey, a journey that will hopefully solve some of the pervasive problems we all suffer from.”

Professor Furness spoke about the Lab’s vision of being dedicated to making the world a better place.

“We are tool builders. We intend to build tools that magnify the human mind and enlarge the human spirit. We want to help make the world healthy, safe and free. . . . full of happiness and joy. . . . To these ends we dedicate our hands and our minds, our time and energy, and our hearts,” he said.

Dr Billinghurst presented guests from each of the Lab’s three stakeholders; Acting Vice Chancellor Professor Bob Kirk representing the University of Canterbury, Chris Pickrill from the Canterbury Development Corporation Ltd and Professor Furness representing the University of Washington, with a gift in recognition of their outstanding contributions in bringing the HIT Lab vision to New Zealand.

Professor Kirk described the opening of HIT Lab NZ as a “very proud and exciting occasion for the University of Canterbury.”

“It is an important step in the ongoing development of the University of Canterbury as a leading research university. We regard it as a strong affirmation of the role the University intends to increasingly play in closer ties with its communities of interest.”

Mr Pickrill said in the past New Zealand had not been very successful at commercialising ideas in a productive and effective way. He said the achievements of HIT Lab US to date, demonstrated that it had found a successful formula and the HIT Lab NZ had done a fantastic job in replicating the US model.

“The HIT Lab has already hit the ground running here with six companies (Applied Research Associates New Zealand (ARANZ), Effusion Group Ltd, Jade Software Corporation Ltd, Mobile Surgical Services Ltd, Trimble Navigation New Zealand Ltd and Pulse Data International) committed to working with the lab through its consortium.”

Minister for Economic Development Hon Jim Anderton congratulates HIT Lab NZ director Dr Mark Billinghurst on the official opening of the Lab.

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Mr Anderton said that HIT Lab NZ is an extremely important economic development initiative for the Canterbury region which is targeting the information and communication technology (ICT) and electronics industries. “Computers and computer technology are increasingly important to our economy and any headstarts we have in these areas will be vital for our future.”

Mr Anderton said the HIT Lab was creating strong partnerships with companies in the high technology industries such as electronics, software, telecommunications, medical engineering and light-electro mechanical engineering.

“The opportunities of working with the Lab are enormous and the companies who have already joined (the Lab’s consortium) are pretty clear indications that companies in New Zealand and international corporations see this as a very big opportunity to be at the cutting-edge of new technology.”

He said it was crucial to encourage the leadership of key individuals and to capture their creativity and innovation in order to create new commercialised technologies, and satisfying jobs in New Zealand. “I’ve just met one of the (HIT Lab’s) PhD students who said he was staying in New Zealand to work here (at the Lab), when before this, he would’ve left New Zealand and we probably would’ve lost him forever. In fact we probably would’ve lost Dr Billinghurst if we hadn’t provided these facilities,” he said.

HIT Lab NZ director Dr Mark Billinghurst said he was very grateful for the continued support from the Government. “Government support is vital in the transfer and commercialisation of technology from academia to industry, and we applaud the Government for recognizing this. Not only will the funding enable us to complete our infrastructure development and build a world-class research facility for New Zealand students, but it will also allow us to engage more fully with industry and add value to their products.”

Mr Anderton said he was looking forward to hearing of the successes the Lab has in creating technology that will result in new jobs and commercial opportunities for Canterbury and New Zealand. “I’m proud to take part in such an innovative initiative and I look forward to returning here to be stunned again by the exciting technological advances generated on our doorstep.”

The funding is to be paid in four instalments. Although the first is to be paid immediately, the other three payments are dependent on the HIT Lab meeting specific research and partnership requirements.

Meeting fosters exchange of ideas

Attendees from the Lab’s inaugural consortium meeting in February say the event provided an excellent forum for facilitating the exchange of ideas on human-computer interaction research.

US consortium member, Fred Ordway director of Change Tools says the HIT Lab NZ meeting was an ideal forum for bringing people together and networking.

“Building relationships is all about networking and having the more informal aspects of the meeting like the consortium dinner is fantastic for this….it is after all the ‘human interface technology laboratory’ and the dinner was a great example of human interaction and this is what will drive the companies and the HIT Lab forward” he says.

The two-day meeting, held on February 18-19 2003, attracted over 70 representatives from both the New Zealand and US consortia, prospective member-companies, government agencies and academia.

The HIT Lab US consortium was represented at the meeting by delegates from three member-companies, Eastman Kodak, Battelle (Pacific Northwest National

HIT Lab NZ Virtual Worlds Consortium Attendees.
Directors Editorial

A new beginning

Summer holidays in New Zealand are normally a time for working on your tan and spending lazy days at the beach. However for the HIT Lab NZ staff and students the last three months have been a frantic time. We have been working on getting proposals written, engaging with industry, bringing students on board, conducting research and moving into a new space.

Everything came to a climax on February 17, our official opening. As I stepped out onto the lawn in front of the HIT Lab and saw the gathered crowd, I knew that this was going to be a special evening, a new beginning for us.

Like many new beginnings it was a time for reflection, and as I prepared for the event I thought about how New Zealand has always been a land of pioneers and explorers. Over a thousand years ago the great navigator Kupe sailed across the vast Pacific Ocean and led the people of Hawaiki to this land. One hundred and fifty years ago my ancestors arrived from England and Scotland and like many others struggled as pioneer farmers.

New Zealanders have not only been pioneers in their own land, but have also carried that same spirit far from home, conquering the world’s highest mountain, discovering the mystery of the atom and some say, even being the first to fly. We truly are a nation of explorers.

On February 17, after months of preparation we began our own new voyage of exploration. This journey is not to a far off land, but into the digital domain of bits and bytes. A journey that will enable us to discover how to use technology to solve some of the pervasive problems that we all suffer from.

The journey itself began over a decade ago at the Human Interface Technology Laboratory, in Seattle Washington. Founded by Professor Tom Furness, the HIT Lab in the US has as its goal the invention, development, and commercialization of technologies that unlock the power of human intelligence and link minds globally. Over the years this ambitious goal has led to the discovery of remarkable technologies such as the Virtual Retinal Display, glasses that enable Parkinson’s sufferers to walk normally, and a medical simulator that allows surgeons to practice nasal surgery before the real operation. Over 20 companies and 500 jobs have been created in the state of Washington and by any standard the HIT Lab US has been a resounding success.

In New Zealand we are carrying on that same vision. Just like Kupe, as he crossed the Pacific, we have been guided on our journey by stars that show us where we should be heading and light the way. These include the visionary stakeholders in the HIT Lab NZ; the University of Canterbury, the Canterbury Development Corporation and the University of Washington, and the individuals we work most closely with from those organizations; John Raine, Larry Podmore and Tom Furness. Without their foresight and hard work none of this would be possible.

In addition to the stars above we wouldn’t be able to begin this journey without a strong canoe beneath. For us that is the students and staff of the HIT Lab NZ who have worked unceasingly to make this happen. As I looked out over the crowd that evening and saw the tired faces of people who just days ago had been moving furniture and cleaning rooms I realized that with people like that on board we can’t help but be successful. It would be difficult to find a more talented and hardworking group.

Finally, although I was able to speak to many of you that evening, I would like to thank you all for the continued support of the HIT Lab NZ. Without your help we wouldn’t be here. Thank you for beginning this journey with us. Just like Kupe, we are off to discover some amazing lands, I hope that you can travel far with us.

Mark Billinghurst
mark.billinghurst@hitlabnz.org
Industry pledges strong support for Lab

Two leading New Zealand organisations have joined five other prominent companies in expressing their support for the HIT Lab NZ by becoming members of the Lab’s Virtual Worlds Consortium.

Pulse Data International, a world-renowned manufacturer and exporter of products for the blind and visually impaired and Virtual Spectator, a cutting-edge sports and entertainment graphics animation business, joined the consortium last month.

HIT Lab NZ director Dr Mark Billinghurst says “it’s wonderful to welcome Pulse Data and Virtual Spectator to the Lab’s consortium.”

“These are both outstanding companies with world-class technology and we’re delighted to be able to partner with them. There are a number of projects that we’re eager to assist them with right away.”

He says the rapid growth of the Lab’s consortium is evidence of how far-sighted leading-edge New Zealand companies are.

Pulse Data International development manager Dr Robin Williams says his company is extremely enthusiastic about establishing a relationship with the HIT Lab NZ.

“We are impressed by the dedication, enthusiasm, and achievements of their team and we believe this is a strategically important alliance. They (HIT Lab NZ) have a range of research directly relevant to our field that can really enhance our information access products and benefit people who are blind or vision impaired.”

Dr Williams says the benefits of joining the consortium are huge for his company. “It will enable us (Pulse Data International) to develop working relationships with other leading technology corporations and gain access to proprietary technologies that could enhance and complement our existing product range. The consortium also gives Pulse Data access to a range of expertise available for reviewing, benchmarking and short-term collaborative research projects.”

Virtual Spectator chairman Neville Jordon says combining Virtual Spectator’s skills with the HIT Lab’s will result in the delivery of many innovative animated experiences into the sports and entertainment market.

“These opportunities go way beyond what we currently see and experience today, this will bring research and development faster to an ever-expanding demand for sports entertainment,” says Mr Jordon.

The five other consortium member-companies are: Trimble Navigation NZ Ltd, Effusion Group Ltd, Jade Software Corporation Ltd, Mobile Surgical Services and Applied Research Associates New Zealand (ARANZ).

For further information on the Lab’s Virtual Worlds Consortium contact Miranda Hogan via email miranda.hogan@hitlabnz.org or on +64 3 364 2349.

Pulse Data International is a major manufacturer and exporter of innovative products for people who are blind and visually impaired. The company has gained a reputation as a major supplier of integrated Braille and speech technology, a range of video magnification solutions, screen reading software and speech synthesizers.

Pulse Data International produces two major product lines — the BrailleNote family of products and the SmartView range of video magnifiers. The BrailleNote and VoiceNote products are personal information management systems designed specifically for people who are blind. Both ranges are built on Microsoft’s Windows CE operating system and incorporate a range of powerful functions including: a word processor, email, a book reader, a daily planner, contact lists and a web browser.

www.hitlabnz.org
info@hitlabnz.org
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Virtual Spectator is a leading interactive sports entertainment company. Its innovative technology enables sports fans to watch, understand, analyse and interact with their favourite sports via television, the Internet and mobile devices. Virtual Spectator technology has been used for the America’s Cup and Louis Vuitton yacht racing and is utilised in the World Rally Motorsport Championships.

Virtual Spectator works by taking data from GPS satellites and processing it through 3D animation software to produce real time 3D graphics. It allows the user to interact with the software, when and where they want to, by:

- reading streaming text
- reviewing race statistics
- listening to an audio commentary of the action
- selecting continuously available action replays

Virtual Spectator International Ltd became part of the Endeavour Capital Group in May, 2002. Endeavour Capital is owned by Neville Jordan, New Zealand’s leading technology entrepreneur.

The SmartView is a video magnifier developed for people with serious low vision. Pulse Data was one of the first companies in the world to release sophisticated split screen PC connectivity, and automatic focus. The success of the SmartView and BrailleNote products has helped the company gain international recognition as the most innovative in its field.

Pulse Data has also experienced phenomenal growth in recent years, staff numbers have doubled over the last 24 months from 68 staff to 130. Today approximately 98% of Pulse Data International’s products are exported from New Zealand to more than 30 countries worldwide.

American Ambassador Swindells and his wife Mrs Swindells visited the HIT Lab on Thursday March 13 2003 to discuss ways in which the Ambassador could help the HIT Lab NZ maintain close ties with the United States.

Lab director selected as NZ Innovation Leader

HIT Lab NZ director Dr Mark Billinghurst was one of eight leading New Zealand innovators and entrepreneurs showcased at the Carter Holt Harvey New Zealand Innovation Pavilion from November 2002-March 2003.

“...To have a world-class New Zealander like Dr Billinghurst return home to head up a virtual reality laboratory and undertake leading-edge research is fantastic,” says Mr Mackay.

Dr Billinghurst has received several accolades in recent years for his human-computer interface research. Most notably, he won a Discover Magazine Award in 2001, an award many regard as equivalent to winning an Oscar for Science and Engineering, for best entertainment application for his MagicBook invention. In 2001, Dr Billinghurst was also listed in technology trends guru, Richard Wurman’s register of the 1000 most creative people in America.

Dr Billinghurst describes New Zealand as a very innovative and creative country. “It’s never ceases to amaze me just how...
many world-leading innovations come out of a country as small as New Zealand. We often don’t realise that our innovations stack up just as well if not better, than other countries on the world stage.”

Inside the Pavilion, over 80 screens provided a multimedia experience featuring Leadership Stories and Innovation Vignettes. The seven other Innovation Leaders featured were: fencing entrepreneur Bill Gallagher of Gallagher group, literacy exporter Wendy Pye of Wendy Pye Group, IT innovator Sir Gil Simpson of Jade Software Corporation, multimedia entrepreneur Ian Taylor of Animation Research, special effects guru Richard Taylor of Weta Workshop, international fashion designer Karen Walker and biotechnology guru Dr Jim Watson of Genesis Research and Development Corporation. The HIT Lab NZ was one of approximately 60 cutting-edge New Zealand companies profiled in the Innovation Vignettes section. The other companies featured were from the biotechnology, ICT, creative and niche manufacturing sectors. The Pavilion was developed by Industry New Zealand in partnership with business.

Inaugural workshop a hit with students

Third and fourth year computer science students from around New Zealand attended the HIT Lab NZ’s Augmented Reality (AR) summer school workshop last November.

The week-long workshop, which ran from November 18-22 2002, attracted students from the University of Canterbury, the University of Otago, the University of Waikato, the University of Auckland, Victoria University of Wellington and K-JIST in South Korea.

The workshop was intensive, condensing the equivalent of a full year’s course into one week’s tuition. Students learnt how to use the AR Toolkit tracking software which was invented by Dr Hirokazu Kato at Hiroshima City University in Japan. Students worked in small groups to develop their own AR technologies using the AR Toolkit.

Dr Billinghurst says it is important to run workshops like the AR summer school and to have them open to people throughout New Zealand.

“It helps increase the number of people working in areas like AR. Students can go back to their home universities and teach their peers the new skills they have learnt.”

At the end of the week students demonstrated their projects to over 50 people at a Hi-Tech BBQ hosted by HIT Lab NZ on Friday November 22.

Dr Billinghurst says he was impressed by the quality of the projects given the short time frame the students had to complete them.

“The quality of these projects indicates to me the high-level of talent and teaching there is in this discipline within New Zealand. The students were so enthusiastic and hardworking, many of them stayed up till the early hours of the morning working on their projects,” says Dr Billinghurst.

Overall the feedback received from each of the workshop attendees was extremely positive.

Minkyung Lee travelled from South Korea to attend the course, and she says it was extremely worthwhile.

“I learnt so much at the workshop. Everything I learnt will be very beneficial to my studies. I’d strongly recommend the course to other students.”

Andrew Golightly from the University of Waikato says the workshop was an “amazing experience.”

“Dr Billinghurst is one of the most helpful lecturers I’ve ever met.”

Students stayed at Bishop Julius Halls for the duration of the week. Living in the halls provided the students with the opportunity to get to know each other outside of the workshop setting.

Due to the success of the AR summer school workshop, the Lab intends to run the course on an annual basis. Over the coming year, the HIT Lab also plans to hold a range of workshops, covering a diversity of topics and fields of interest.

An overview of the AR workshop projects

**STAR** (Speech in Augmented Reality)
Created by Andrew Golightly (University of Waikato) and Mark Pethick (University of Otago).

STAR allows you to give speech commands to life-sized virtual characters that appear overlaid on the real world. The characters respond to speech. “Run!” will cause the character to start running, “jump” makes it jump etc. This work could be applied in new interactive entertainment applications.

**Augmented Mirror**
A prototype of an augmented reality conferencing system - developed by Mathew Duignan (University of Waikato).

Looking at a name card, a user will see live
video of a remote collaborator. Unlike normal video conferencing the remote collaborator appears superimposed over the real world, potentially solving many of the pervasive problems in traditional teleconferencing.

AR Music

Created by Preeti Jain (University of Waikato) and Johannes Prinz (University of Canterbury).

AR Music is a music making interface that allows you to manipulate real cards to combine several musical instruments together. As the cards get closer or further away from each other the music volume changes, so users can interactively choose which instruments can play together and how loudly they will play.

AAR (Artistic Augmented Reality)

Developed by Christian Graf and Jing Li (University of Auckland).

AAR uses non-photorealistic techniques to show artistic renderings of virtual models overlaid on the real world. Users can manipulate real objects to change the parameters of the rendering such as the line thickness, or shadowing shown. These techniques could be applied in a museum display setting.

AR Physics

Developed by Rainer Wang (University of Otago).

AR Physics is a physics lab that allows students to hit a virtual ball with a real paddle and see the path the ball takes superimposed over the real world.

Physics simulation equations are encoded in the interface to give a realistic appearance. This work has applications in the educational sector.

ARC (Augmented Reality Count)

Created by Rachel Hunt (University of Auckland) and Mingyung Lee (K-JIST, Korea).

ARC is an interface that recognizes groups of AR tracking markers and causes an interaction when the correct markers are placed together. This is fundamental to many AR applications.

HIT Lab NZ Projects

In each edition of ‘Interface’ we endeavour to provide the latest information on HIT Lab projects. Outlined below is a brief overview of a project that is currently being worked on in the Lab.

“Smart-Its” are small-scale embedded devices that can be attached to everyday objects to augment them with sensing, perception, computation and communication. The function of “Smart-Its” depend on the type of Add-on board that it connects to.

This project is based on the design from University of Lancaster in UK. There are two main sections in this device: the transmitter and the receiver. The transmitter consists of a Smart-It board where an add-on sensor unit can be attached to it to suit different types of applications. Another Smart-It in receiver mode detects the signal from the transmitter and displays the information on a computer screen through the serial port.

Some of the possible applications for this device are:

1. Count the number of times a ball was caught in a game (accelerometer).
2. Orientation of an object in free space (using 2 double axis accelerometers).
3. High-tech household central monitoring system:
   a. Touch sensor to replace a doorbell switch or as humidity monitor (e.g. water in the garden when soil moisture content is low).
   b. Light sensors for room brightness control,
   c. Digital thermometer for room temperature control and
   d. Motion detector(s) to trigger a burglar alarm.

Interactions at Graphite 2003

Eric Woods reviews Graphite

The inaugural Graphite 2003 (International Conference on Computer Graphics and Interactive Techniques), was held in Melbourne from February 11-14, 2003.

The conference was held at the Australian Centre for the Moving Image. This venue was ideal and even though the complex was not yet complete it was still very impressive, with a distinctive exterior, two large digital theatres and about 40 plasma screens embedded into the walls displaying computer-controlled content.

New Zealand had a strong presence, with a number of ‘kiwi’ speakers. A majority of the exhibition booths were from New Zealand.

One of the Lab’s industry partners, ARANZ was also present, exhibiting their Fastscan product which resulted in multiple sales.

The HIT Lab NZ also had a solid presence, with an exhibition booth showing a variety of demonstrations for the duration of the conference. Dr Billinghurst was one of three prominent researchers invited to give a keynote address. Eric Woods concluded events by giving a presentation on: "MagicMouse: an Inexpensive 6-Degree-of-Freedom Mouse".

The other two keynote speakers were equally inspiring. Stelarc, Honorary Professor of Art and Robotics at Carnegie Mellon University talked about his interpretation of interaction. He demonstrated a highly realistic virtual head that could verbally respond to text conversations using a sophisticated artificial intelligence engine called Alice.

David Kirk, Chief Scientist and Vice President of Architecture at NVIDIA discussed past, present and future improvements in computer graphics, touching on the potential of real-time ray tracing and demonstrating NVIDIA’s latest CineFX hardware. This was capable of calculating up to 16 rendering passes per frame, resulting in “cinema quality” graphics being generated in real-time.

Continued page 8
The Graphite art exhibition at the Span gallery was fantastic, with a combination of new pieces, and a collection from the SIGGraph 2002 travelling road show. In addition to some stunning prints there were a number of sculptures and interactive exhibits that often used very creative and unique interaction metaphors. These ranged from digitally enhanced sea shells to an Augmented Reality view of Singapore sidewalk, where a virtual woman would get older the closer you got to her.

The papers presented were also of high quality and came from disciplines as diverse as geometric algorithms through to interaction techniques.

Numerous social functions also provided excellent opportunities to make new contacts and further discuss many ideas with other participants. An opening was held at the Span gallery, a welcoming function at the ACMi, and a conference dinner at the Hilton.

Graphite 2004 will be held in Singapore, with the subsequent one hopefully hosted in New Zealand.

Graphite is organised by ANZGraph, a group affiliated with the ACM Special Interest Group in Graphics (SIGGraph) that is intended to be a branch that focuses specifically on Australasia and South East Asia.

For further information on Graphite 2003 visit (www.anzgraph.org/graphite2003).

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**New staff profiles**

**Andy Evans**

Andy is developing an Outdoor AR Tracking system, which is a joint project between the HIT Lab NZ and its consortium member Trimble Navigation NZ Ltd.

Andy comes to the HIT Lab after completing a PhD in the United Kingdom where he studied surveying and mapping with a specialisation in the use of GPS for precise positioning. Recent research includes the involvement in a successful project utilising GPS and Augmented Reality for Subsurface visualisation.

**Marilyn Lim**

Marilyn is a programmer/analyst at the HIT Lab NZ. She works with HIT Lab students and staff on hardware design, interfacing projects as well as providing electrical engineering support for the MagicBook research project. She will be involved in establishing and maintaining a hardware research lab within the Lab.

Marilyn is also a part-time student at the Electrical and Computer Engineering Department (ECE), University of Canterbury. Her PhD research at the ECE department involves creating a device that will allow patients in an Intensive Care Unit who are unable to speak by natural means due to airway obstruction to produce natural sounding speech by "mouthing the words".

**Student profiles**

**PhD students**

**Julian Looser**

Julian is embarking on PhD in Computer Science at the HIT Lab. He will be researching computer vision algorithms and interaction techniques for the MagicBook project. In 2002 Julian completed his honours degree in computer science at the University of Canterbury. During his studies, Julian developed interests in software engineering, computer graphics programming and human-computer interaction.
Matthew Keir

Matthew is commencing a PhD in Mechanical Engineering with the Lab. The focus for his work will be to develop a hybrid tracking technology that will combine inertial, gyroscopic and computer vision tracking methods into a single low cost tracking module. The tracking module will also be integrated into a custom display unit facilitating augmented reality (AR) tracking and display in a single device. 

Matt recently received a Bright Future Scholarship from the Foundation for Research Science and Technology (FRST). This award is given to the top PhD candidates in New Zealand and is an extremely sought after scholarship. Prior to Matt gaining his scholarship only one other student in the Mechanical Engineering department at the University of Canterbury had been awarded a Bright Future scholarship. It pays Matt $25,000 per year plus a travel allowance that will enable him to attend conferences to present his work.

Matt Powell

Matt has an Honours degree in Computer Science from the University of Canterbury and is commencing his PhD with the Lab. His research involves supporting gesture and speech input for systems with multiple users. Matt aims to create a system that not only understands the interaction between the users and the computer, but between the users themselves.

Philip Lamb

Philip is a Psychology PhD student based in the HIT Lab. He is investigating human factors issues in augmented reality applications. Philip’s research aims to further develop the MagicBook technology and to expand its range of applications to include the data visualisation and educational domains.

Masters students

Barbara Garrie

Barbara, a Masters student in the Art History Department, won a summer scholarship late last year and has been working with the Lab, Canterbury Museum and the University of Canterbury to determine the feasibility of implementing augmented reality (AR) and virtual reality (VR) displays into the Canterbury Museum. This pilot study has included a review of current museum/cultural heritage applications utilising AR and VR technology, a review of raw technologies required for AR and VR displays and the creation of a technology database.

Chandra Harrison

Chandra is a Psychology Masters student. Her research is focused on User-Centred Design. Chandra’s thesis will focus on techno-phobia, exploring why users suffer from anxiety when using mainstream consumer electronics and developing more usable interfaces to reduce this anxiety. Studying at the Lab will provide Chandra with exposure to the technology of the future, allowing first hand knowledge of potential human factors issues. The concept of hiding technology while enhancing its benefits is something she is keen to explore.

Trond Nilsen

Trond is beginning a Masters degree with the HIT lab this year. He completed a BSc in Computer Science at the University of Canterbury in 2000, and has since worked in the area of business and internet software for Alchemy Group, and more recently as a freelance contractor.

He is interested in a variety of topics within Computer Science, including 3D graphics, artificial intelligence, distributed systems, and human computer interaction.
**Interns**

**Florent Vial**
Florent recently joined the Lab from Lyon in France, to undertake a six month internship working on the MagicBook project. Florent will work on enhancing image processing technologies to be used for natural feature tracking for the MagicBook.

He is in the final stages of completing a Masters of Science degree in Electronics, Telecommunications and Computer Science at the University of Lyon.

**Christian Graf**
Christian is on a five month internship at the HIT Lab until July 2003. Christian's research area is collaboration with agents. He will conduct user studies to measure the impact of different types of agents on collaboration, especially in the field of augmented reality.

He studied at the University of Magedeburg in Germany, where he took courses in humanities, arts and majored in Computer Science. He's predominately interested in databases, graphics, human computer interaction (user interfaces) and usability.

After finishing his internship at the Lab, Christian will complete his round-the-world trip (previous stops were Japan and Australia) with a visit to Hawaii, Los Angeles, New York and London. He hopes to be able to continue his research in the field of collaboration in his upcoming Diploma thesis once he is back in Magdeburg.

**Volunteers**

**Chia-Chen Pen**
Chia Chen is a volunteer undergraduate student from the University of Canterbury's Computer Science Department. She is working on the TouchMe project at the Lab.

The TouchMe work explores how a sense of touch can be used to enhance remote presence and collaboration. This work builds on the Logitech ForceMouse that is a traditional mouse with force feedback hardware integrated into it. For the first time force feedback can be added to normal desktop applications. Users can collaboratively view and interact with a desktop application, but they can feel what their collaborator is doing. We will conduct user studies to evaluate how force feedback can improve the sense of remote presence.

**Eri Taylor**
Eri is in her last year of her undergraduate degree in Computer Science. She is working with Chia-Chen on the TouchMe project. The TouchMe project is allowing her to pursue her interest in how the sense of touch can facilitate collaboration work with remote participants.

**Johannes Prinz**
Johannes is a volunteer in the Lab who is working on a project to write a flash tutorial for the ARToolkit. A ‘jack of all trades,’ Johannes has been invaluable for helping to do odd jobs around the Lab in many different areas ranging from software development to hardware maintenance.

Johannes is currently an undergraduate student at the University of Canterbury completing a Bachelor of Science degree majoring in Computer Science.

**Kushal Vaghani**
Kushal is a final year Computer Science student at the University of Canterbury. He is an asset to have around as he is eager to work on everything and anything. Kushal is interested in computer graphics and networks and is part of a team working on a project to make software for facilitating writing and playing "guitar tabs".
Announcements

- The HIT Lab NZ has two new interns: Florent Vial (France) and Christian Graf (Germany) are both working in the Lab until August 2003.
- Matt Keir, a HIT Lab NZ & Mechanical Engineering PhD student received a Bright Future Scholarship from the Foundation for Research Science and Technology last month.
- Eric Woods and Miranda Hogan celebrate their one year at the HIT Lab NZ on April 12.
- HIT Lab NZ turns ONE on April 19! (It is also Tom Furness’ birthday, but I didn’t tell you that!)

Upcoming Events

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<tr>
<td>March 28</td>
<td>Inaugural Consortium Member Lunch Symposium</td>
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<tr>
<td>April 5–10</td>
<td>ACM CHI 2003 Conference</td>
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<tr>
<td></td>
<td>Fort Lauderdale, Florida, USA</td>
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<td><a href="http://www.chi2003.org">www.chi2003.org</a></td>
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<td>Mark Billinghurst is presenting a tutorial on developing AR applications.</td>
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<td>May 2</td>
<td>Second Consortium Member Lunch Symposium</td>
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<td>May 6</td>
<td>HIT Lab NZ short course in developing AR applications (6 weeks), for further information contact Miranda Hogan, <a href="mailto:miranda.hogan@hitlabnz.org">miranda.hogan@hitlabnz.org</a>, or on +64 3 3642349</td>
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<tr>
<td>May 9–10</td>
<td>Wanganui School of Design, Design Camp, Wanganui, NZ</td>
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<td>HIT Lab NZ presentation to 600 design students.</td>
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<td><a href="http://www.newmedialab.co.nz">www.newmedialab.co.nz</a></td>
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<td>June 27</td>
<td>Third Consortium Member Lunch Symposium</td>
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<tr>
<td>July 3–4</td>
<td>ACM SIGCHI NZ Conference, University of Otago NZ</td>
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<td></td>
<td>Mark Billinghurst will give a keynote address.</td>
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<td><a href="http://www.business.otago.ac.nz/infosci/mrsi/chinz03/index.htm">www.business.otago.ac.nz/infosci/mrsi/chinz03/index.htm</a></td>
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<tr>
<td>July 27–31</td>
<td>SIGGRAPH 2003</td>
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<tr>
<td></td>
<td>San Diego, USA</td>
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<td><a href="http://www.siggraph.org/s2003">www.siggraph.org/s2003</a></td>
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<tr>
<td>August 1</td>
<td>Fourth Consortium Member Lunch Symposium</td>
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<tr>
<td>August 6–7</td>
<td>HIT Lab US Consortium Meeting</td>
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<td></td>
<td>Seattle, USA</td>
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