IMI Annual Activity Report
October 2009 - September 2010
Provost’s Message

“...This research institute is dedicated to creating an environment where technology and creativity can coexist and develop.”

- Professor Bertil ANDERSSON
  Provost, NTU
  April 2008

Director’s Message

IMI strives to be an incubator of multidisciplinary cutting edge media related research ideas and establish Singapore as a key player at the forefront of the global interactive digital media revolution.

- Professor Nadia Magnenat-THALMANN
  Director, IMI
IMI Vision & Goal

The Institute for Media Innovation has the following vision:

- To develop worldwide recognized top research areas in 3D simulation
- To do out of the box research and produce breakthroughs
- To be identified as a must place to visit, the place where we are sure we discover something new
- To facilitate and promote cross-disciplinary collaboration between the natural sciences and social sciences, bridge media systems research and media content research, and challenge the boundaries of R & D innovation in digital media.
- To be a place where we like to be, where we enjoy the team work and the discovering together
- To educate the next generation of scientists and technologists in the multi-disciplinary field of interactive digital media (IDM) by harnessing and leveraging on their strong engineering, design, educational and social science research potential
IMI Mission

- Create synergy and interactions with the schools to empower IDM interdisciplinary research

- Offer top students international and interdisciplinary PhD opportunities in IDM

- Promote and disseminate IMI activities in Singapore and all over the world
Steering Committee

1. Overview

Prof. YEO Hian Heng, Gillian
Interim Dean, Nanyang Business School

Prof. CHING Chi Bun
Chair, Chemical & Biomedical Engineering

Prof. LO Yat-Man, Edmond
Chair, School of Civil & Environmental Engineering

Prof. Srikanthan THAMBIPILLAI
Chair, School of Computer Engineering

Prof. KAM Chan Hin
Chair, School of Electrical & Electronic Engineering

Prof. BOEY Yin Chiang, Freddy
Chair, School of Materials Science & Engineering (Provost-Designate)

Prof. LING Shih Fu
Chair, School of Mechanical & Aerospace Engineering

Prof. QUAH Teong Ewe, Euston
Acting Chair, School of Humanities & Social Sciences

Prof. HUNG Wei Loong, David
Associate Dean, National Institute of Education

Assoc. Prof. Benjamin H. DETENBER
Chair, Wee Kim Wee School of Communication & Information

Prof. LAW Sai-Kit, Alex
Acting Chair, School of Biological Sciences

Prof. LING San
Chair, School of Physical & Mathematical Sciences

Prof. BOEY Yin Chiang, Freddy
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Chair, School of Computer Engineering
IMI in NTU New Media
Peak

- Interactive learning through 3D serious game technology
- Virtual and augmented environments for life sciences and medical applications
- Web-based application as virtual housing, social networking
- Simulating the past and the future
- Immersive 3D worlds
- Art, design, digital photography
- Virtual engineering and manufacturing
- Wearable and mobile pervasive media
Research Areas

The general objective of IMI Core Research framework is to create true synergies between the real and the virtual worlds. This means the development of a true interaction between real people and virtual or artificial creatures like virtual humans, virtual animals and robots in a way of creating a real social relationship.

In all cases, the mechanism will be very similar, the real participant will be tracked, his/her motion will be captured and recognized in order that the virtual creatures can react and a real interaction and dialog can be generated. Immersion will be also used to improve the presence aspect of the simulation.

In the same spirit, research is focused on the most innovative ways of feeling the Virtual World through a multisensory experience with visual, audio, and tactile feedback. These vibrant experiences will be created inside the Immersive Room combined with motion capture, sensors, and robots.

The heart of IMI Core Research is in Virtual Humans, a full domain of research that will last at least all the 21st century as it is to model real humans as they are and behave. Virtual Humans technology is a very INTERDISCIPLINARY field. At the level of appearance (geometry), it is not so much more complicated than to model other objects. But we need to add the physics of the motion of each human in each activity, and also the behaviour which is unpredictable as it is different for each human. We need also to model the interior of the human, all the organs, his/her behaviour. The ultimate long term vision is to recreate a biological and physiological humans as in reality.
2. Research

Research Areas

The ultimate goal in the new Virtual Humans technology is to communicate with them and do things together. Because of that, we need to model their knowledge, reasoning, memory, consciousness, emotions, various attitudes, etc. Otherwise, they are just dummies used for films that have no proper autonomy.

We as real humans could try on or experience any situation before it happens and get instant help from virtual humans. For example:

Helping in the education in general, as a virtual tutor or for training as a virtual trainer for sports.

During surgery, the medical doctor will have a 3D view of the patient with his/her complete anatomy. In case of orthopaedics, the surgeon could see the effect on the gait of the patient after surgery.

In case of emergency (fire, tsunami, flood, or earthquake), people can be immersed in crowds of Virtual Humans and learn how to behave in such situations. Virtual Humans can also help the user to bring first aid or to escape safely.

Using a Virtual Try On, people can see themselves as virtual clones with the clothes of their dream walking in beautiful landscapes.
IMI BeingThere Centre

The objective is to make major technological and systems-level advances leading to a 3D experience of telepresence. The results will be a breakthrough in the quality of interpersonal communication at a distance allowing for eye contact and proper motion parallax among a group of users.

The centre, comprised of groups in UNC, ETH and NTU, will develop four prototypes of the telepresence system of the 21st century:

- **A fitted room with a table for the standard group meeting situation.** The room provides “windows” into the meeting rooms of the remote groups with 3D representation tailored to each of the participants. The two persons engaged in a conversation experience true eye-contact whereas other participants see them from the side with parallax as in a real meeting room.

- **A roving display which brings a 3D representation of a single distant person to a place, controllable by both users.** The display is semi-transparent and will bring the illusion of the other person being present into a room, a laboratory or a hospital.

- **An animatronic robotic mannequin onto which a faithful representation of the remote user is projected.** The robot is remote controlled by the remote user and can navigate laboratories or hospital rooms.

- **In absence of one of the users, an autonomous Virtual Human will replace him/her with a real appearance similar to the user.** This Virtual Human will have some capabilities of sensing, gesturing, memory, and communication. It adds an “anytime” component to the “anywhere” component of the overall project. IMI is responsible for this prototype.
Projects Supported by IMI Grant

2. Research

Engineering Collaboratories – Conceptualizing an Initiative and Forging Partnerships
Grant: SGD$ 10,000
PI: Asst. Prof. Steven J. Zuiker, NIE
Co-PI: Asst. Prof. Sathyan Subbiah, MAE

The Archive of the Indigenous Languages and Cultures of South East Asia
Grant: SGD$ 100,000
PI: Asst. Prof. Francesco Cavallaro, HSS
Co-PIs: Asst. Prof. Luke Kang Kwong, HSS
Asst. Prof. Tan Ying Ying, HSS
Asst. Prof. Goh Geok Yian, HSS

A High Impact User Centric Approach to Point-to-Point Purchase Information Delivery Using Biometric Data
Grant: SGD$ 99,200
PI: Assoc. Prof. Russel W. Pensyl, ADM
Assoc. Prof. Ser Wee, EEE
Collaborators: Prof. Martin Reiser, IMI
Lee Shan Ping, IERC
Qui C.T. Tran, IMI
External Collaborators: Craig Lindley, Blekinge Institute of Technology, Sweden
Charlotte Sennersten, Blekinge Institute of Technology, Sweden

The Living Line – Evaluation of Inbetweening Software Through Experimental Animation
Grant: SGD$ 10,000
PI: Asst. Prof. Hans-Martin Rall, IMI
Co-PI: Prof. Seah Hock Soon, SCE

Asian Heroes – Interactive Table at Asian Civilization Museum
Grant: SGD$ 10,000
PI: Assoc. Prof. Ng Bee Chin, HSS
Asst. Prof. Fabrizio Galli, ADM
Co-PIs: Assoc. Prof. Halina Gottlieb, HSS
Prof. Seah Hock Soon, SCE
Collaborators: Asian Civilisations Museum

A Tangible Multi-Touch Learning Environment for Children with Special Needs
Grant: SGD$ 75,000
PI: Assoc. Prof. Goh Wooi Boon, SCE
Co-PIs: Visiting Prof. Libby Cohen, NIE
Marissa Wettasinghe, NIE
Projects Supported by IMI Grant

Computational Photography: The Application of Computational Aesthetics in the Acquisition and Treatment of Digital Images
Grant: SGD$ 119,078.34
Investigators Team 1
PI: Assoc. Prof. Ramakrishna Kakarala, SCE
Co-PIs: Asst. Prof. Shannon L. Castleman, ADM
Asst. Prof. Deepu Rajan, SCE
Investigators Team 2
PIs: Asst. Prof. Martin Constable, ADM
Assoc. Prof. Kap Luk Chan, EEE
Co-PI: Asst. Prof. He Ying, SCE

VisuaPedia: A Collaborative Learning Studio
Grant: SGD$ 200,000
PI: Prof. Seah Hock Soon, SCE
Co-PIs: Assoc. Prof. Margaret Tan, SCI
Asst. Prof. Steven Zuiker, NIE
Asst. Prof. Feng Tian, SCE

Walking Bach Slowly
Grant: SGD$ 20,000
PI: Asst. Prof. PerMagnus Lindborg, ADM
Co-PI: Yong Rong Zhao, Freelance sound & light

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Co-PI: Yong Rong Zhao, Freelance sound & light

Time Rojak
Grant: SGD$ 30,000
PI: Prof. Isaac V. Kerlow, ADM

Beyond Typography – Interactive Environment with Radio-Frequency Identification Integration
Grant: SGD$ 20,000
PI: Asst. Prof. Yeo Puay Hwa Jesvin, ADM
Co-PI: Assoc. Prof. Ma Maode, EEE

The Birds Singing Club
Grant: SGD$ 20,000
PI: Assoc. Prof. Louis-Philippe Demers, ADM

MMObility
Grant: SGD$ 50,000
PI: Asst. Prof. Zuiker Steven John, LST
Co-Pls: Prof. Seah Hock Soon, SCE
Asst. Prof. James Patrick Williams, HSE
Asst. Prof. Lee Yew Jin, NSSE
Collaborator: David Kirschner, HSS

Time Rojak
Grant: SGD$ 30,000
PI: Prof. Isaac V. Kerlow, ADM

Beyond Typography – Interactive Environment with Radio-Frequency Identification Integration
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IMI-Industrial Joint Projects

Clothes Modeling and Simulation for Mixed-Reality Clothing

This is a collaborative research project, between IMI/NTU and Institute for Infocomm Research, the Agency for Science and Technology (I²R/A*STAR). This project agreement started in 01 April 2010 and to continue for a term of thirty six months.

**IMI/NTU**
- Principal Investigator: Prof. Nadia Magnenat Thalmann
- Members: Assoc. Prof. Jianmin Zheng, Ms. Yuzhe Zhang, Mr. Qui C.T. Tran

**I²R/A*STAR**
- Principal Investigator: Dr. Ishtiaq R Khan
- Members: Dr. Miaolong Yuan, Dr. Arthur Niswar, Dr. Qiu Bo
Infrastructure

1. The Immersive Room (Triple I System)

The Triple I system will bring together Innovation, Immersion and Interaction. This is a curved screen structure of 300 degree by 3.2m radius enabling an all round truly immersive interaction experience.

It provides a platform for research innovations encompassing immersive and interactive media and producing novel methods in tracking, analyzing and understanding of the human activities by making advancement in computer imaging, graphics and vision methods. Meaningful display and sensor feedback responses upon human activities will also bring about innovation in interactivity between real and virtual characters and scenes. Typical applications are:

- Motor skill learning, training and rehabilitation.
- Ergonomics studies.
- Conveying of scientific concepts through 3D interactive visualization.
- Design innovation in products, structures and manufacturing.
- Arts, social sciences, humanities, cultural heritage.

2. The Motion Capture System

This real-time passive multiple camera optical motion capture system has video capturing capability of full body optical marker tracking for studying of human movement and animation:

- Creating realistic 3D animated movements.
- Human motion recognition, analysis and understanding.
- Biomechanics, sports and gait studies.
- Man-Machine interactions.
- Intelligent gaming.
IMI PhD Program

The IMI PhD Program is at the core of IMI's effort to promote New Media. Playing a crucial part in ensuring the future of New Media in Singapore, IMI aims to educate the next generation of scientists and technologists and encourage them to share and benefit from their knowledge of engineering, business, design, educational and behavioral research.

"IMI offers doctoral students vibrant multidisciplinary research capabilities. In particular, they will have an opportunity to work in the area of cutting-edge interactive 3D simulation with top equipment as The Triple I system (Interactive, Immersive, and Innovative) and real-time motion capture in a multidisciplinary team. Through their personal work, seminars, courses, and interaction with research experts, PhD candidates are prepared for research positions in leading academic institutions as well as private and public organizations."

- Professor Daniel THALMANN
  PhD Coordinator
## Current PhD Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3D Reconstruction of Human Bodies with Clothes from Un-calibrated Monocular Video Images</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>2 3D Simulation of Articulation in Physiological Human</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>3 Adolescents’ Information Disclosure on Facebook: Impact of Their Parents and Personality</td>
<td>HSS/SCI</td>
</tr>
<tr>
<td>4 An Improvement to K-Mean Image Segmentation Method: A Region-Merging-Based Approach</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>5 Automatic 3D Clothing: from 2D Pattern to Garment</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>6 Behavior Modeling for Effective Decision Making in Virtual Worlds</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>7 Computer-Aided Evaluation of Prosody for Language Learning</td>
<td>EEE/HSS</td>
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<tr>
<td>8 Cyber-learning in Cyberworlds</td>
<td>SCE/MME</td>
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<tr>
<td>9 Development of Aesthetic Algorithms for Acquired and Generated Digital Images</td>
<td>EEE/ADM</td>
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<td>10 Identification Of Sudden Cardiac Death Using Spectral Domain Analysis Of Electrocardiogram</td>
<td>SCE/ADM</td>
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<tr>
<td>11 Modelling and Animating 3D Chinese Water Colour Paintings</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>12 Quantification of Brain Responses for Neurofeedback Games in 3D Virtual Environments</td>
<td>EEE/MAE</td>
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<tr>
<td>13 Optimization on Computational-intensive Application via Heterogenous System</td>
<td>SCE/IMI</td>
</tr>
<tr>
<td>14 Passive Approaches for Digital Image Forgery Detection</td>
<td>SCE/EEE</td>
</tr>
<tr>
<td>15 Interactive Image Retrieval Based on Machine learning techniques</td>
<td>EEE/SCE</td>
</tr>
<tr>
<td>16 Perceptually Based Selective Rendering</td>
<td>SCE/EEE</td>
</tr>
<tr>
<td>17 Research on Multimedia Community-based Question Answering</td>
<td>SCE/IMI</td>
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</tbody>
</table>
# Industrial Collaboration

<table>
<thead>
<tr>
<th>#</th>
<th>Organization</th>
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<tbody>
<tr>
<td>1.</td>
<td>Asian Civilization Museum</td>
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<tr>
<td>2.</td>
<td>Bio-imaging Lab, Singapore Bio-imaging Consortium</td>
</tr>
<tr>
<td>3.</td>
<td>Electronics Arts</td>
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<td>4.</td>
<td>Institute of Information Research</td>
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<td>5.</td>
<td>La Salle</td>
</tr>
<tr>
<td>6.</td>
<td>Nanyang Academy of Fine Arts (NAFA)</td>
</tr>
<tr>
<td>7.</td>
<td>Singapore Institute of Manufacturing Technology</td>
</tr>
<tr>
<td>8.</td>
<td>Tan Tock Seng Hospital</td>
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<td>9.</td>
<td>Underwater World Singapore</td>
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</tbody>
</table>
## International Collaboration

<table>
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<tr>
<th>#</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>California Polytechnic State University, USA</td>
</tr>
<tr>
<td>2.</td>
<td>ETH, Zurich, Switzerland</td>
</tr>
<tr>
<td>3</td>
<td>MIRALab, University of Geneva, Switzerland</td>
</tr>
<tr>
<td>4</td>
<td>State Key Lab of CAD and Computer Graphics, Zhejiang University, China</td>
</tr>
<tr>
<td>5</td>
<td>Swissnex</td>
</tr>
<tr>
<td>6</td>
<td>Tsinghua University, China</td>
</tr>
<tr>
<td>7</td>
<td>University of North Carolina at Chapel Hill, USA</td>
</tr>
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<td>8</td>
<td>University of Toronto, Canada</td>
</tr>
<tr>
<td>9</td>
<td>VRLab, EPFL, Switzerland</td>
</tr>
</tbody>
</table>
Conference & Workshop Organized

International Workshop on Computational Photography and Aesthetics
Date: 12-13 December 2009
Venue: Nanyang Executive Centre, NTU

Computational Photography is now well established as a field for research on what lies beyond the conventional boundaries of digital photography. The newer field of Computational Aesthetics has seen much interest within the fields of computer graphics, art history, and cultural studies. This workshop will provide an opportunity for researchers within NTU working in the areas of Computational Photography and Computational Aesthetics to discuss with leading national and international researchers in those fields.
Computer Graphics Conference 2010

CGI was successfully organized by IMI and the conference was from 08 to 11 June 2010 at the Nanyang Executive Center. CGI Conference is one of the top recognized International Computer Graphics in the world. The conference had received participation from renowned International leaders in research in computer graphics and New Media. The main objective is to promote excellence of research and its international dissemination. The target audiences were researchers, educators, industrial developers and Computer Graphic professionals. The program included invited talk, presentations of papers carefully selected by an International Program Committee. This year, 310 papers were submitted and 70 selected. This number of submissions is pretty high in comparison with all past computer graphics conference in the world. The only one who has received more papers is SIGGRAPH.

For more details, please visit this website: http://cgi2010.miralab.unige.ch/
Distinguished Lectures

11 June 2010  
**Time-Varying Simulation to Natural Objects**  
Prof. WU Enhua, University of Science & Technology University of Macau, China

23 April 2010  
**Behind the Technology and tools of Lucasfilm Animation**  
Mr Xavier NICOLAS and Mr John SANDERS, Lucasfilm, Singapore

29 Jan 2010  
**Recent Advances in Real-Time Crowd Simulation**  
Prof. Daniel THALMANN, IMI-NTU, Singapore

22 Oct 2009  
**Will Digital Media Reshape The World?**  
Prof. Eugene FIUME, University of Toronto, Canada
5. IMI Activities

IMI PhD Seminars

23 Feb 2010  Presentation by WANG Qiang
Presentation by Saurabh RASTOGI

02 Mar 2010  Presentation by ZHANG XiaoYan
Presentation by ZHAO Sixuan

20 Apr 2010  Presentation by Pravin KAKAR
Presentation by LIU Cong

15 Jun 2010  Presentation by DONG Lu
Presentation by LAI Danbo
5. IMI Activities

IMI PhD Seminars

22 Jun 2010  Presentation by ZHANG Lining
26 Aug 2010  Welcome onboard New Students
26 Oct 2010  Presentation by Dr WANG Yanbin (Post-doc)
              Poster presentation and demos by PhD students

In the pipeline, the continuous dates for the IMI PhD Seminars are as follows:

09 Nov 2010  22 Feb 2011
23 Nov 2010  29 Mar 2011
18 Jan 2011  03 May 2011
5. IMI Activities

IMI-School Joint Seminars

29 Sept 2010  MAE-IMI Joint Seminar
A Generalization of the Hausdorff Dimension of Fractal Sets on $\mathbb{R}^n$
Prof. Huikun JIANG, Nanjing University, China

4 Oct 2010  IMI-MAE Joint Seminar
Face & Lip Detection for Automatic Speech Reading
Assoc. Prof. Jane ZHANG, California Polytechnic State University, USA
5. IMI Activities

Events

Digital Nights Singapore (DNS)
Singapore Art Museum, 16-24 Sept 2010

**High Fashion in Equations & Interactive 3D Virtual Try On**

18 haute couture garments have been brought to life from their original historical fashion. Through the 3 dimensional simulations of the dresses, the spectator is immersed into the world of fashion and dreams of the past.

“3D Virtual Try On”, realized in collaboration with the Institute for Media Innovation at NTU in Singapore and MIRALab, University of Geneva, Switzerland, is an interactive application that allows visitors to play with clothes in three dimensions. Based on touch screen technology and a simple and attractive interface, visitors will be able to try on clothes and customize a 3 dimensional virtual fashion model.
### Facts

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of journal papers published</td>
<td>50</td>
</tr>
<tr>
<td>No. of Ph D students</td>
<td>17</td>
</tr>
<tr>
<td>Total research grant committed</td>
<td>10M</td>
</tr>
<tr>
<td>No. of people/countries having visited IMI</td>
<td>150/7</td>
</tr>
<tr>
<td>No. of keynotes/invited speeches delivered by IMI</td>
<td>18</td>
</tr>
<tr>
<td>No. of research proposals submitted by IMI</td>
<td>5</td>
</tr>
<tr>
<td>No. of patents/technical disclosures submitted by IMI</td>
<td>1</td>
</tr>
<tr>
<td>No. of distinguished lectures organized by IMI</td>
<td>4</td>
</tr>
<tr>
<td>No. of PhD seminar organized by IMI</td>
<td>7</td>
</tr>
<tr>
<td>No. of IMI-school joint seminars organized</td>
<td>2</td>
</tr>
<tr>
<td>No. of seed grants awarded</td>
<td>13</td>
</tr>
</tbody>
</table>
6. Addendums

IMI Staff

Prof. Nadia Magnenat-THALMANN
Director, Institute for Media Innovation
School of Computer Engineering
School of Art, Design & Media

Assoc. Prof. CAI Yiyu
Deputy Director, Institute for Media Innovation
School of Mechanical & Aerospace Engineering

Asst. Prof. Olga SOURINA
School of Electrical & Electronic Engineering

Dr. QUAH Chee Kwang
Research Fellow

Mr. TRAN Qui C.T
Research Associate

Ms. Elsie SIM
Senior Administrative Executive

Prof. Martin REISER
Founding Director, Institute for Media Innovation
School of Computer Engineering

Prof. Daniel THALMANN
PhD Coordinator, Institute for Media Innovation
School of Computer Engineering

Dr. WANG Yanbin
Research Fellow

Miss. May Thu AUNG
Research Associate

Mr. GWEE Yi Chen
Assistant Project Development Manager
6. Addendums

Faculties Associated with IMI

Assoc. Prof. Francesco Paolo CAVALLARO  
School of Humanities & Social Sciences

Asst. Prof. Hans-Martin RALL  
School of Art, Design & Media

Asst. Prof. Martin CONSTABLE  
School of Art, Design & Media

Asst. Prof. PerMagnus LINDBORG  
School of Art, Design & Media

Assoc. Prof. Ser WEE  
School of Electrical & Electronic Engineering

Asst. Prof. Yeo Puay Hwa JESVIN  
School of Art, Design & Media

Prof. Isaac V KERLOW  
School of Art, Design & Media

Assoc. Prof. Louis-Philippe DEMERS  
School of Art, Design & Media

Assoc. Prof. Ng Bee CHIN  
School of Humanities & Social Sciences

Assoc. Prof. Ramakrishna KAKARALA  
School of Computer Engineering

Assoc. Prof. Wooi Boon GOH  
School of Computer Engineering

Asst. Prof. John Steven ZUIKER  
Learning Sciences & Technologies  
National Institute of Education
Faculty Associated with IMI

Asst. Prof. Ina CONRADI
School of Art, Design & Media

Assoc. Prof. LIN Feng
School of Computer Engineering

Prof. SEAH Hock Soon
School of Computer Engineering

Assoc. Prof. ZHENG Jianmin
School of Computer Engineering

Asst. Prof. ZHANG Jie
School of Computer Engineering

Assoc. Prof. CAI Jianfei
School of Computer Engineering

Asst. Prof. Justin DAUWELS
School of Electrical & Electronic Engineering

Asst. Prof. MIAO Chun Yan
School of Computer Engineering

Assoc. Prof. LIN Weisi
School of Computer Engineering

Assoc. Prof. ZHU Ce
School of Electrical & Electronic Engineering

Assoc. Prof. CHAN Kap Luk
School of Electrical & Electronic Engineering

Prof. KOH Soo Ngee
School of Electrical & Electronic Engineering
Visiting Professors & Researchers

Prof. Alfred M BRUCKSTEIN
Visiting Professor
Technion - Israel Institute of Technology, Israel

Prof. Halina GOTTLIEB
Visiting Professor
Interactive Institute, Sweden

Mr. Bart KEVELHAM
Visiting Researcher
MIRALab
University of Geneva, Switzerland

Dr. Junghyun AHN
Visiting Researcher
Virtual Reality Laboratory
EPFL, Lausanne, Switzerland

Mr. Mustafa KASAP
Visiting Researcher
MIRALab
University of Geneva, Switzerland

Dr. Sylvain CARDIN
Visiting Researcher
Virtual Reality Laboratory
EPFL, Lausanne, Switzerland

Mr. Rik Bos
Exchange Student
T-Xchange & Industrial Design Engineering
University of Twente, The Netherlands

Ms. Marlène Arévalo
Visiting Fashion Designer
MIRALab
University of Geneva, Switzerland
PhD Students

CHENG Peng
Title: Modeling and Animation 3D Chinese Water Color Paintings
Supervisor: Asst. Prof. MIAO Chun Yan
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

DONG Lu
Title: Perceptually Based Selective Rendering
Supervisor: Assoc. Prof. LIN Weisi
Co-Supervisor: Assoc. Prof. ZHU Ce

FANG Hui
Title: Behavior Modeling for Effective Decision Making in Virtual Worlds
Supervisor: Asst. Prof. ZHANG Jie
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

LAI Danbo
Title: Cyber-learning in Cyberworlds
Supervisor: Assoc. Prof. Alexei SOURIN
Co-Supervisor: Assoc. Prof. ZHAO Dongsheng

LIU Cong
Title: Adolescents’ Information Disclosure on Facebook: Impact of Their Parents and Personality
Supervisor: Assoc. Prof. Rebecca ANG
Co-Supervisor: Assoc. Prof. May Oo LWIN

ZHANG Xiaoyan
Title: Development of Aesthetic Algorithms for Acquired and Generated Digital Images
Supervisor: Assoc. Prof. Kap Luk CHAN
Co-Supervisor: Asst. Prof. Martin CONSTABLE

LI Le
Title: Optimization on Computational-intensive Application via Heterogenous System
Supervisor: Asst. Prof. ZHANG Wei
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

Pravin KAKAR
Title: Passive Approaches for Digital Image Forgery Detection
Supervisor: Asst. Prof. Sudha NATARAJAN
Co-Supervisor: Assoc. Prof. Ser WEE

QUAN Yuan
Title: Research on Multimedia Community-based Question Answering
Supervisor: Asst. Prof. Cong GAO
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

Surabh RASTOGI
Title: Identification Of Sudden Cardiac Death Using Spectral Domain Analysis Of Electrocardiogram
Supervisor: Assoc. Prof. LIN Feng
Co-Supervisor: Asst. Prof. Mark CHAVEZ

ZHANG Lining
Title: Interactive Image Retrieval with Machine Learning and Computational Neuroscience
Supervisor: Prof. WANG Lipo
Co-Supervisor: Assoc. Prof. LIN Weisi
PhD Students

ZHAO Sixuan
Title: Computer-Aided Evaluation of Prosody for Language Learning
Supervisor: Prof. KOH Soo Ngee
Co-Supervisor: Prof. LUKE Kang Kwong

ZHANG Wenjing
Title: 3D Simulation of Articulation in Physiological Human
Supervisor: Assoc. Prof. ZHENG Jianmin
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

ZHANG Yuzhe
Title: Automatic 3D Clothing: from 2D Pattern to Garment
Supervisor: Assoc. Prof. ZHENG Jianmin
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

ZHU Hongyuan
Title: Interactive Medical Image Segmentation
Supervisor: Assoc. Prof. CAI Jianfei
Co-Supervisor: Prof. Nadia Magnenat-THALMANN

WANG Qiang
Title: Neurofeedback Based Stress Management Games in 3D Virtual Spaces
Supervisor: Asst. Prof. Olga SOURINA
Co-Supervisor: Assoc. Prof. Vladimir Vladimirovich KULISH
List of Visits

22 Oct 2010  Students from Ubon Ratchathani University, Thailand.

07 Oct 2010  Shanghai Jiatong University led by Mdm Ma Dexiu, Chair person of the University Council, China.

06 Oct 2010  Over 50 University Senior Administrators from Thailand, organized by the Ministry of Education, Thailand.

29 Sept 2010  IDA Next Generation Service Team.
List of Visits

29 June 2010    Martijn Moonen, Dutch Ministry of Economic Affairs on collaborations with the Netherlands.

28 June 2010    Infocomm Development Authority of Singapore (IDA) led by CEO, RADM (NS) Ronnie Tay.

20 Dec 2009    Underwater World Singapore team led by General Manager Mr Kwek Meng Tiam, Hwa Par Group.
## Keynotes/Invited Talks by IMI Professors

### Keynotes

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<td>Nadia M Thalmann</td>
<td>Virtual Humans in Serious Games</td>
<td>2009 International Conference on CYBERWORLDS, 7-11 September 2009, UK.</td>
</tr>
<tr>
<td>YY Cai</td>
<td>X Factors for Serious Games</td>
<td>China Serious Game Summit, Beijing China, Dec, 2009.</td>
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### Invited talks

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<td>Nadia M Thalmann</td>
<td>Creating some awareness in Virtual Humans and Social Robots</td>
<td>Wee Kim Wee School of Communication and Information, Nanyang Technological University, 21 Jul 2010.</td>
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<tr>
<td>Nadia M Thalmann</td>
<td>Social Robots</td>
<td>Interactive &amp; Digital Media Institute, 16 July 2010.</td>
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<tr>
<td>O. Sourina</td>
<td>Neurofeedback Games for Medical Applications in Co-Spaces</td>
<td>NTU-COE Workshop in Engineering in Medicine (A partnership with the Tan Tock Seng Hospital), 26 Nov 2009.</td>
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<td>Nadia M Thalmann</td>
<td>Simulating The Natural Beauty of Real Worlds</td>
<td>IMI Distinguished Lecture, Nanyang Technological University, 24 Sep 2009.</td>
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<td>R. Kakarala</td>
<td>A data-driven approach to understanding photographic composition</td>
<td>Apple Corporate, Cupertino, California, USA, 7 July 2010.</td>
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<tr>
<td>Daniel Thalmann</td>
<td>Methods for Generating Large Crowds of Various People</td>
<td>Crowd Simulation Workshop Parallel &amp; Distributed Computing Center, 4 March 2010.</td>
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<tr>
<td>Daniel Thalmann</td>
<td>Motion in Games</td>
<td>(MIG2009), Utrecht, the Netherlands, 22 November 2009.</td>
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Selected IMI Publications


Selected IMI Publications


6. Addendums

Selected IMI Publications


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