

# Institute of Visual Informatics



Universiti Kebangsaan Malaysia  
43600 UKM Bangi  
Selangor  
Malaysia



Institute of Visual Informatics (IVI)

**Driving Discovery**

**Through Innovation**



# OUR ACADEMIC PROGRAMME

## Masters and PhD (research based)

### Four Core Research Areas:

1. Simulation and Visualization
2. HCI and Usability Engineering
3. Computer Vision and Image Processing
4. Intelligent Visual Data Analytics

# Simulation and Visualization

Simulation involves the creation of a computer model to represent real-world phenomenon or systems, typically built upon mathematical models and sciences to predict and visualise the behaviour of the simulated systems. The research in simulation has the potential to contribute to areas such as:

- Navigation training
- Robot simulator
- Weather forecasting and disaster prediction
- Fault analysis
- Visual Simulation

Visualization is a study of visual representations of abstract data to reinforce human cognition. This research field is based on two components; visual design and visual computing. Among the research areas are the following:

- Interactive and Immersive Visualization
- Object recognition
- Visual Image/Video Encoding
- 3D reconstruction
- Computational Photography
- Visual Learning

# HCI and Usability Engineering

Human Computer Interaction (HCI) is a discipline concerned with the study, design, construction and implementation of human-centric interactive computer systems. Usability engineering is a field that is concerned generally with human-computer interaction and specifically in designing human-computer interfaces with high usability. It provides structured methods for achieving efficiency in interface design. The thematic areas such as in design, entertainment, education, technology, UX and usability. The research areas includes:

- Analysis and design methods
- e-Learning and Distant Learning
- Emotions in HCI
- Game Design
- Gamification Interface
- Entertainment Systems
- HCI methods and theories
- Adaptive and personalized interfaces
- Haptic user interface
- Information visualization
- Interaction design
- Virtual and Augmented Reality environments
- Mobile HCI
- Natural user interfaces (NUI)
- Smart home

# Computer Vision and Image Processing

Computer Vision is a research field of computer science that intends to model and capture the real world encompasses both fundamental theory and technique. The research areas of computer vision includes:

- Edge detection
- Image segmentation and reconstruction
- Object identification and recognition
- Visual tracking
- Remote collaboration

Real-time Virtual Image processing covers three major fields namely, the Real-time processing, Virtual Images and Virtual Image Processing. These fields include research in the following areas:

- Raster to vector conversion and vice versa
- Image conversion
- Image processing
- Virtual Image Technique
- Visual data management
- Response time
- Virtual reconstruction
- Virtual Image recognition
- Virtual Image Inspection technique
- Embedded system
- Visual simulation
- Virtual reality
- Multi-touch Technology

# Intelligent Visual Data Analytics

The aim of Visual Intelligent Data Analytics is to generate analytical result and insight from the flood of data. The field of visual intelligent data analytics focuses on handling massive, heterogeneous, and dynamic volumes of information by integrating human judgment by means of visual representations and intelligent techniques in the analysis process.

- Application domain of Visual Analysis
- Analytical Reasoning
- Artificial Intelligence
- Data Mining
- Data Modelling
- Data/Information/Knowledge Visualization
- Knowledge Discovery
- Intelligence Analysis
- Machine Intelligence
- Pattern Analysis
- Sentiment Analysis
- Social Computing
- Visual Analytics
- Visual data exploration
- Visual Data/Knowledge Discovery
- Visualization for Information Retrieval



# 4<sup>th</sup> International Visual Informatics Conference 2015 (IVIC'15)



Halimah Badioze Zaman · Peter Robinson  
Alan F. Smeaton · Timothy K. Shih  
Sergio Velastin · Azizah Jaafar  
Nazlena Mohamad Ali (Eds.)

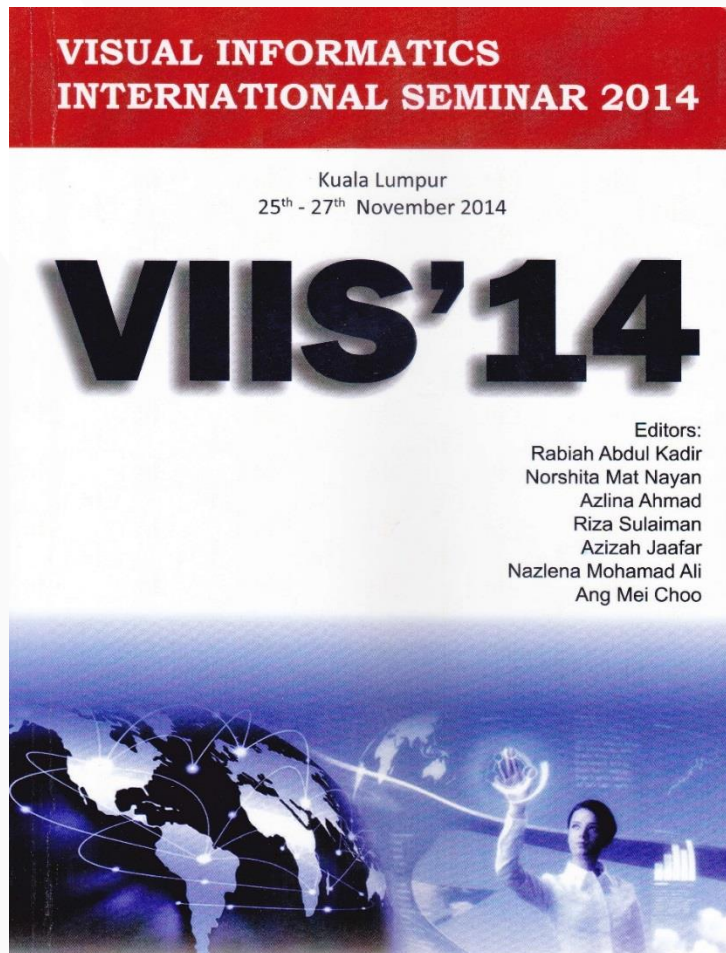
LNCS 9429

## Advances in Visual Informatics

4th International Visual Informatics Conference, IVIC 2015  
Bangi, Malaysia, November 17–19, 2015  
Proceedings



# 3<sup>rd</sup> Visual Informatics International Seminar (VIIS 2016)



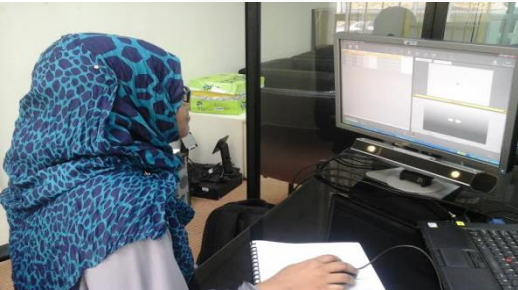
VIIS 2016, all accepted papers were published in SCOPUS Journal – JICT, APJITM

# IVI Building

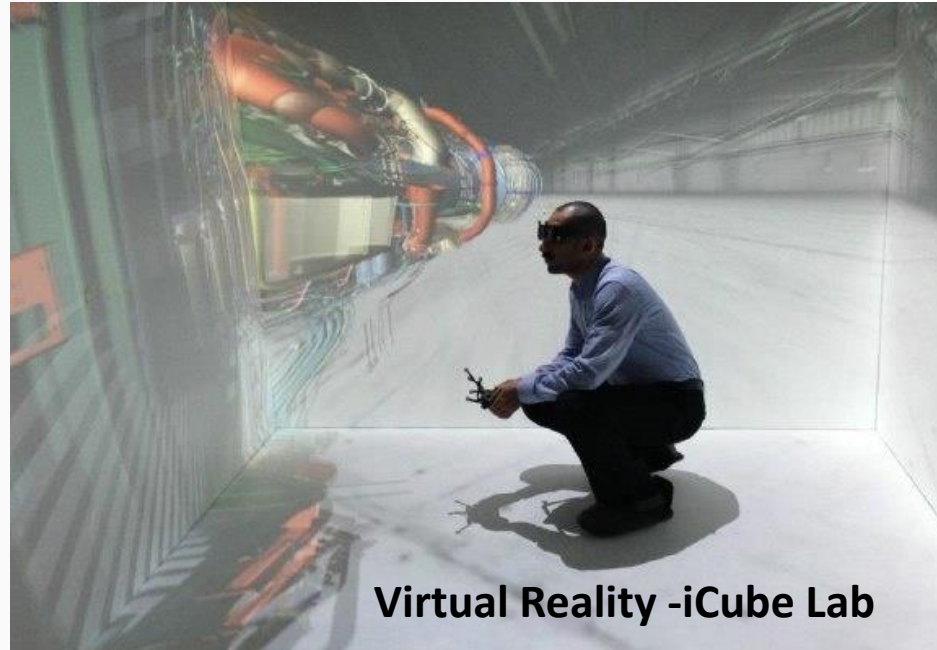




# IVI Facilities



**HCI and Usability Lab**



**Virtual Reality -iCube Lab**



**Intelligent Visual Data Analytics Lab**



# IVI Postgraduate Studies Unit

# Who's in PSU, IVI



**Dato' Prof. Dr. Halimah Badioze Zaman**  
Director



**Associate Prof. Dr. Nazlena Mohamad Ali**  
Head of Postgraduate Unit



**En. Zakaria Mohd Elah**  
Assistant Registrar



**Pn. Nurulhuda Muhamad**  
Support Staff

# Postgraduate Programmes

- Masters of Science and PhD
- Candidate must take :
  - Mandatory course (4 units) Research Methodology RARA6014
  - An elective course (4 units) Usability Engineering ZGTV6034
- PhD :
  - Full time 3 – 6 year (6 - 12 semester)
  - Part Time 4 – 7 year (8 -14 semester)
- Master :
  - Full time 2 – 3 year
  - Part Time 3 – 4 year
- Thesis in Bahasa Melayu



## Other Requirements:

Students are required to published at least :

- Masters - 1 journal and 1 proceeding, Scopus/ISI indexed
- PhD - 2 journals and 1 proceedings, Scopus/ISI indexed

# Language Requirements

All international students are required to take:

- 2 Bahasa Melayu courses equivalent to 4 units
- An English test and English Language Courses (if applicable)

# How to enroll to IVI?

## Graduate Admission Application System (Guest System)

<http://guest.ukm.my/>

### Required documents to upload:

1. Research proposal in pdf
2. S1/S2 certificates
3. S1/S2 Transcripts
4. Toefl/ielts (if any)
5. Processing fee MYR100 (for international applicants) must be via online payment as provided in the Guest System

# Guest System

- Application for research mode programmes can be made any time throughout the year
- In Guest System, do select/choose:
  - Field Faculty/Institut/Pusat → ***Institute of Visual Informatics (IVI)***
  - Field Program → ***Doctor Falsafah (Informatic Visual)***
  - Field Mod → ***Penyelidikan***

<http://guest.ukm.my/>

PERMOHONAN UNTUK KEMASUKAN SEPTEMBER 2016 BAGI PROGRAM MOD KERJA KURSUS DAN CAMPURAN MULA DIBUKA PADA 18 APRIL 2016 HINGGA 5 JUNE 2016.  
Senarai program ditawarkan.

Bagi permohonan yang dibuat untuk kemasukan Semester 2 sesi 20152016 (SEBELUM 18 APRIL 2016), sila semak keputusan permohonan di sini.

Universiti Kebangsaan Malaysia (UKM) mempelawa permohonan untuk mengikuti program pengajian siswazah yang ditawarkan. Pengambilan untuk program mod kerja kursus dan mod campuran dibuat dua kali setahun iaitu pada Oktober hingga November (kemasukan Februari tahun berikutnya) dan April hingga Mei (kemasukan September). Pengambilan untuk program pengajian mod penyelidikan boleh dibuat pada bila-bila masa.

#### Tatacara permohonan :

1. Pemohon dikehendaki mendaftar akaun sistem ini dengan menggunakan Kad Pengenalan, Katalaluan dan Emel.
2. Pemohon dinasihatkan menyemak senarai program yang ditawarkan terlebih dahulu sebelum membuat permohonan.
3. Pemohon juga perlu menekan butang 'HANTAR' permohonan sebelum tarikh tutup permohonan.
4. Pemohon 'TIDAK PERLU' menghantar sebarang dokumen secara pos setelah membuat permohonan secara atas talian ini.
5. Yuran permohonan yang sudah dijelaskan tidak boleh dituntut balik dalam apa jua keadaan sekalipun.
6. Pemohon boleh menyemak keputusan permohonan melalui sistem ini dalam tempoh enam (6) hingga lapan (8) minggu selepas tarikh tutup permohonan bagi permohonan mod kerja kursus dan mod campuran atau dalam tempoh empat (4) hingga enam (6) bagi permohonan mod penyelidikan.

Terima kasih.

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*Pertanyaan lanjut mengenai program-program yang ditawarkan oleh UKM - Graduate School of Business (UKM-GSB), sila kemukakan kepada:*

**UKM - Graduate School of Business (UKM-GSB)**  
Tel : 03-8921 4718/4486  
Emel : [admission\\_gsb@ukm.edu.my](mailto:admission_gsb@ukm.edu.my)

Semester 1 Sesi 20162017

NRIC/Passport

Kata laluan

Kategori

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## Tatacara permohonan :

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3. Pemohon juga perlu menekan butang 'HANTAR' permohonan sebelum tarikh tutup permohonan.

4. Pemohon 'TIDAK PERLU' menghantar sebarang dokumen secara pos setelah membuat permohonan secara atas talian ini

5. Yuran permohonan yang sudah dijelaskan tidak boleh dituntut balik dalam apa jua keadaan sekalipun.

6. Semak keputusan permohonan melalui sistem ini dalam tempoh enam (6) hingga lapan (8) minggu selepas tarikh tutup permohonan bagi permohonan mod kerja kursus dan mod campuran atau dalam tempoh empat (4) hingga enam (6) bagi permohonan mod penyelidikan.



# Fees

INTERNATIONAL STUDENTS FULL TIME PHD/S3	FEES
1 <sup>st</sup> Semester	RM7695
Subsequent semester	RM5985
Total fees (min sem : 6)	RM37,620

# THANK YOU

## CONTACT US

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