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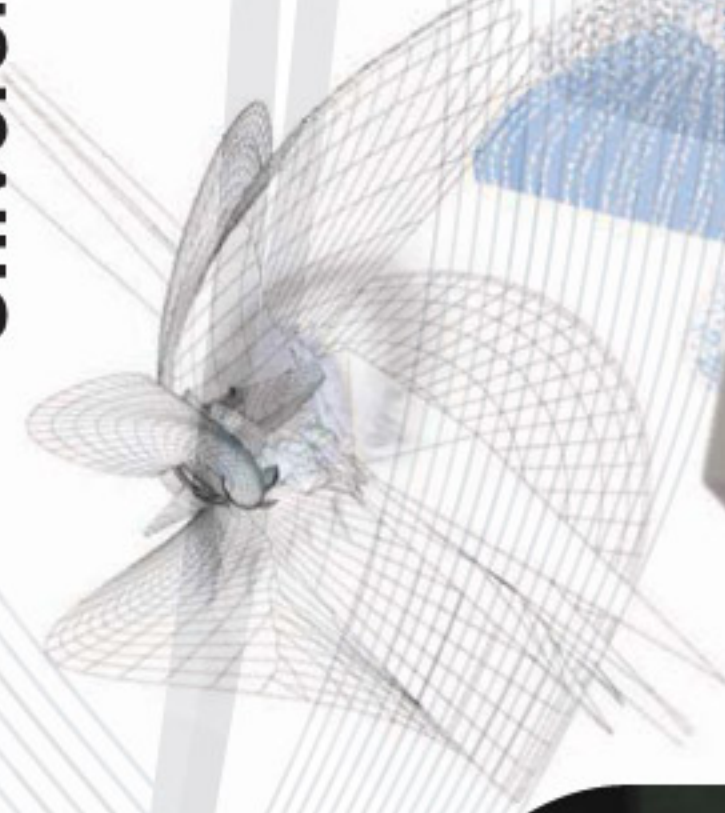


UNIVERSITI
KEBANGSAAN
MALAYSIA
National University of Malaysia



Research Areas in Postgraduate Studies

Institute of Visual Informatics
Universiti Kebangsaan Malaysia



Left to right (Sit)

Assoc. Prof. Dr Azlina Ahmad – Deputy Director/ Senior Research Fellow,
Prof Dato' Dr Halimah Badioze Zaman – Director/ Principle Investigator,
Assoc. Prof. Dr Azizah Jaafar – Senior Research Fellow
Left to right (Stand) Dr Ang Mei Choo – Research Fellow, Dr Nazlena Mohamad Ali – Research Fellow,
Assoc. Prof. Dr Riza Sulaiman – Senior Research Fellow

INSTITUTE OF VISUAL INFORMATICS

INTRODUCTION

The Institute of Visual Informatics (IVI) was established through the approval of Senate and the Board of Directors of Universiti Kebangsaan Malaysia (UKM) on 22nd November 2010 and 10th February 2011 respectively as an ICT centre of excellence for research in the field of Visual Informatics. IVI was established with objectives to integrate multidisciplinary areas encompassing areas such as virtual reality, haptic computing, graphics computing, computer vision, visualisation and simulation, mathematical visualisation, and real image processing. Inline with objectives above, IVI has drafted four focused research areas: Social Informatics, Computer Vision and Simulation, Real Time Virtual Image Processing and Visual Computing. IVI will offer masters program by research and doctor of philosophy program in the field of Visual Informatics.

Vision

Institute of Visual Informatics is committed to be a leading Centre of Excellence in research and innovation in the field of Visual Informatics.

Mission

To be a centre of excellence of choice in the field of Visual Informatics that is of global standing, by conducting frontier and cutting-edge research to lead new knowledge for better quality of life.

Social Informatics



Social Informatics is an interdisciplinary field dedicated to studying the design, uses, and effects of information technology or information system. Example of research areas includes:

- Visual media and communication
- Web mining, opinion mining and sentiment analysis
- Collaborative learning
- Social network: discovery, evolution, analysis and applications
- Creative visual information design
- Humanistic - social user interface
- User interaction and dynamic visualization
- Human-centered computing
- Recommendation systems and social applications of the semantic Web
- Virtual communities (e.g. open-source, multiplayer gaming)
- Social computing theories and models
- Wireless communication and mobile computing
- Computer Supported Collaborative Work



Computer Vision and Simulation



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

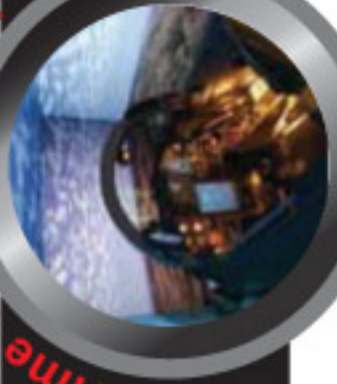
- Edge detection
- Image segmentation and reconstruction
- Object identification and recognition
- Visual tracking
- Remote collaboration

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



Real Time Virtual Image Processing



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 Techniques
- Visual data management
- Response time
- Virtual reconstruction
- Virtual Image recognition
- Virtual Image Inspection Technique
- Embedded system
- Visual simulation
- Virtual reality



Visual Computing



This research field is based on three components; visual computing, visual design and usability. Among the research areas are the followings:

- Mapping and Modeling
- Interactive and Immersive Visualization
- Behavior, Motion and Gaze Tacking
- Object recognition and tracking
- Visual Image/Video Encoding/Compression
- 3D reconstruction
- Computational Photography
- Multimodal interaction and design
- Game Design
- User Interface and Evaluation
- Usability and Accessibility
- Visual Learning

