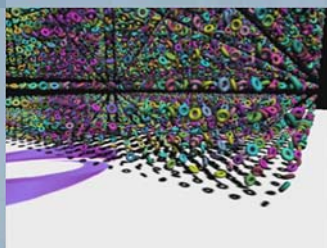


IMI PhD INTERDISCIPLINARY SEMINARS

DATE: 7 December 2012, Friday
TIME: 11:00 am - 12:35pm
VENUE: IMI Seminar Room, Research Techno Plaza, XFrontiers, Level 03-01
 50 Nanyang Drive, Singapore 637553
 *Lunch will be served



Dr LIU Fuchang
 Research Fellow
 Institute for Media Innovation
 Singapore

REAL-TIME COLLISION DETECTION OF MASSIVE BODIES ON GPUS

- Culling collision between very large numbers of moving bodies using graphics processing units.
- To perform massively parallel collision detection, we reduce the number of false positive overlaps by spatial subdivisions and principal component analysis. As application of our algorithm, we demonstrate the real-time collision detection of massive bodies.



GUO Guibing
 PhD Student
 SCE-IMI

VIRTUAL RATINGS: A NEW INFORMATION SOURCE FOR FEEDBACK-BASED SYSTEMS IN E-COMMERCE

User ratings are the essence of recommender systems and other feedback-based systems in e-commerce. Lack of motivation to provide ratings, and eligibility to rate generally after purchase---these restrict the effectiveness of feedback-based systems and contribute to the well-known data sparsity and cold start problems. This paper proposes a new information source for feedback-based systems, called virtual ratings. They are based on virtual product experiences, such as in a virtual reality environment; further, virtual ratings may be submitted prior to purchase. A conceptual model of virtual ratings is proposed, integrating the environmental factor presence whose effects on product evaluations have not been studied previously.



BIAN Zhenpeng
 PhD Student
 EEE-IMI

FALL DETECTION BASED ON SKELETON EXTRACTION

More than 60% of injury-related hospitalizations for senior people are the result of falls. Falls are the leading cause of injury deaths. Multiple studies showed that delay of the medical intervention after a fall is negatively correlated to its outcomes. A fall detection and alert system is very important for senior people, especially for the senior people living alone.

Our fall detection approach is based on skeleton extraction from a depth camera. Tracking some key joints can robustly analyse the human's motion. It is a robustness approach for fall detection.



ZHANG Xiaoyan
 PhD Student
 EEE-ADM-IMI

VIGNETTING EFFECT IN PHOTOGRAPHS

In photographs, Vignetting is often an unintended effect caused by camera settings or lens limitations.

However, artists use vignetting effect in paintings to draw attention away from the edges and direct it toward the focal point of the painting. Meanwhile, Vignetting are also used in depth planes to enhance the depth perception of the painting.

We propose to study the difference of the photo-style vignette and painters-style vignette, and enhance the vignetting effect in photographs.