

Faculty and Research Interests

Yu-Chi Lai

Assistant Professor

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Education:

1996 B.S. in E.E. of National Taiwan University
2003 M.S. in E.C.E of Univ. of Wisconsin-Madison
2006 M.S. in C.S. of Univ. of Wisconsin-Madison
2009 Ph.D. in E.C.E of Univ. of Wisconsin-Madison
2010 Ph.D. in C.S. of Univ. of Wisconsin-Madison

Work Experience:

1998 – 2000 Research assistant in N.C.K.U
2009 – Till Now Assistant Prof. in CSIE in NTUST

Research Field:

Computer Graphics, Computer Vision, Computer Game Technology,
3D Stereo Virtual Environment and Human Interaction Interface 、
Computer Rendering 、 Multi-media Image and Video Processing

Current Project:

1. Destination Selection Based on Consensus-Selected Landmarks
 - Enhancing the destination look-up experience based on the fact that humans can easily recognize and remember images and icons of a destination instead of texts and numbers.
2. Data-Driven NPR Illustrations of Natural Flows in Oriental Painting
 - Designs a data-driven system to extract arbitrary painting styles from an existing oriental painting, animate these stylizing strokes, and transfer the styles to other paintings.
3. Robust and Efficient Adaptive Direct Lighting Estimation
 - Proposes the population Monte Carlo hemispherical integral (PMC-HI) sampler to improve the efficiency of hemispherical integral estimation.
4. Geometry-Shader-Based Real-time Voxelization and Applications
 - Proposes a new real-time voxelization algorithm based on newly available GPU functionalities and designs several applications to render complex lighting effects with the proposed voxelization method.
5. Extra Detail Addition Based on Existing Texture For Animation News Production
 - Explores the well-designed texture coordinate which already exists in each model from the database to stitch extra details onto the existing textures with a cube-based interface.
6. Intuitive Auxiliary Tool For Stereoscopic Parameter Setting Based On GPDP
 - Designs geometrical perceived depth percentage(GPDP) to numerate and shade the geometric depth of a scene for a practical solution to visualize the stereoscopic perception without the need of any 3D device or special environment.

Data-Driven NPR Illustrations of Natural Flows in Oriental Painting



Extra Detail Addition Based on Existing Texture For Animation News Production



Geometry-Shader-Based Real-time Voxelization and Applications



Intuitive Auxiliary Tool For Stereoscopic Parameter Setting Based On GPDP

