

Research Interests

Field: computer graphics, computational photography, computer vision, AR/MR/VR, machine learning

Current Position

Feb. 2020 -- Present

Postdoctoral Researcher
National Taiwan University
Communication and Multimedia Lab.

Taipei, Taiwan

Education

Sep. 2009 – Jun. 2014

Ph.D. in Computer Science
National Taiwan University
Advisor: Yung-Yu Chuang
Dissertation: *Sampling and Reconstruction Techniques for Efficient Monte Carlo Rendering*

Taipei, Taiwan

Sep. 2007 – Jun. 2009

M.S. in Computer Science
National Chiao Tung University
Advisor: Zen-Chung Shih
Thesis: *Visibility-Guided Importance Sampling*

Hsinchu, Taiwan

Sep. 2003 – Jun. 2007

B.S. in Computer Science
National Chiao Tung University
Rank 1st in class
Member of Phi-Tau-Phi Scholastic Honor Society in 2007
7 times Academic Excellence Award (top 5%)

Hsinchu, Taiwan

Employment History

May. 2018 – Jan. 2020

Sr. Algorithm Developer
TopPano Inc.

Taipei, Taiwan

Projects

Inception (Virtual Studio System)
Inception is an intuitive and powerful virtual studio system implemented with *Unity* and *Unreal Engine*. It provides features including RGB-D video enhancement, real-time matting, virtual lighting augmentation, and mixed reality preview. The system was used to assist the final projects of Department of Digital Culture Creation and Multimedia, China University of Science and Technology.

Batman (Multi-object Tracking System)
Batman is a high-accuracy system for multi-object tracking, consisting of both hardware devices and software algorithms.

Sep. 2014 – Apr. 2018	Pr. Engineer HTC Inc. Develop computer vision and AR/MR algorithms <i>LightProbeGen (AR/MR Lighting Tool)</i> <i>LightProbeGen</i> is an intuitive and fun tool for assisting AR/MR applications to construct real-world lighting environment. <i>TrueColor (VR App. for Painting and 3D Model Texture Design)</i> <i>TrueColor</i> is an interesting VR game for spray painting and pen drawing. It can also be used as an professional VR editor for designing the textures of 3D models. The tool is launched already on <i>VIVEPORT</i> . <i>Arcade Saga (VR Game)</i> <i>Arcade Saga</i> is the first exclusive VR game for HTC VIVE HMD. It has already hit the store shelves on <i>VIVEPORT</i> and <i>Steam</i> . <i>3D Face Reconstruction</i> An algorithm for creating a 3D face model from a single image	New Taipei City, Taiwan
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Jul. 2011 – Sep. 2011	Summer Intern Digimax Inc.	Taipei, Taiwan
Fall 2009 – 2013	Teaching Assistant National Taiwan University Course: Digital Image Synthesis	Taipei, Taiwan

Academic Activities

May. 2016	Invited Talk National Cheng Kung University Topic: Virtual Reality: Technology and Content Development	Tainan, Taiwan
May. 2016	Invited Talk Yuan Ze University Topic: Virtual Reality: Technology and Content Development	Taoyuan, Taiwan
Dec. 2013	Invited Talk Industrial Technology Research Institute (ITRI) Topic: Introduction to Physically Based Ray Tracing	Hsinchu, Taiwan

Publications

Dual-Matrix Sampling for Scalable Translucent Material Rendering <u>Yu-Ting Wu</u> , Tzu-Mao Li, Yu-Hsun Lin, Yung-Yu Chuang In <i>IEEE Transactions on Visualization and Computer Graphics (TVCG)</i> , volume 21, number 3, page 363-374, March 2015.
VisibilityCluster: Average Directional Visibility for Many-Light Rendering <u>Yu-Ting Wu</u> , Yung-Yu Chuang In <i>IEEE Transactions on Visualization and Computer Graphics (TVCG)</i> , volume 19, number 9, page 1566-1578, September 2013.

SURE-based Optimization for Adaptive Sampling and Reconstruction

Tzu-Mao Li, Yu-Ting Wu, Yung-Yu Chuang

In *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia 2012)*, volume 31, number 6, article 194, Singapore, November 2012. (selected as a highlight paper by the chair)

International Short Papers and Posters

VisibilityChunk: Average Directional Visibility for Importance Sampling

Yu-Ting Wu, Yung-Yu Chuang

ACM SIGGRAPH Asia 2012 Poster, article 44, Singapore, November 2012 (selected as a highlight poster by the chair)

Horizon Occlusion Culling for 3D Navigation

Yun-Feng Chou, Yu-Ting Wu, Shiang-Chun Chang, Mu-Heng Li, I-Chen Lin, Zen-Chung Shih, Rung-Ren Lin

International Workshop on Advanced Image Technology (IWAIT) 2008 Poster, Hsinchu, Taiwan, January 2008

Domestic Publications

Improved Reflective Shadow Maps with Visibility Approximation

Mifan Bang, Yu-Ting Wu, Yung-Yu Chuang

Computer Graphics Workshop (CGW) 2011, Taipei Taiwan, July 2011

Technical Reports and Preprints

ClipFlip: Multi-view Clipart Design

I-Chao Shen, Kuan-Hung Lin, Li-Wen Su, Yu-Ting Wu, Bing-Yu Chen

arXiv:2008.12933 [cs.GR], August 2020