

# Yu-Ting Wu

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https://kevincosner.github.io/

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## Research Interests

- Computer graphics, computational photography, computer vision, augmented/virtual reality, machine learning

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## Education

- **National Taiwan University** Taipei, Taiwan  
*Ph.D.* in Computer Science Sep. 2009 - June 2014  
Advisor: Yung-Yu Chuang  
Dissertation: Sampling and Reconstruction Techniques for Efficient Monte Carlo Rendering
- **National Chiao Tung University** Hsinchu, Taiwan  
*Master in Computer Science* Sep. 2007 - June 2009  
Advisor: Zen-Chung Shih  
Thesis: Visibility-Guided Importance Sampling
- **National Chiao Tung University** Hsinchu, Taiwan  
*Bachelor in Computer Science* Sep. 2003 - June 2007  
Rank 1st in class, 6 times Academic Excellence Award (top 5%)  
Honorary Member of Phi-Tau-Phi Scholastic Honor Society in 2007

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## Experiences

- **Postdoctoral researcher - National Taiwan University**, Taipei, Taiwan Feb. 2020 - Present  
Host: Yung-Yu Chuang
- **Senior Algorithm Developer - Toppano Inc. (startup)**, Taipei, Taiwan May 2018 - Jan. 2020
- **Principal Engineer - HTC Inc.**, New Taipei City, Taiwan Sep. 2014 - Apr. 2018
- **Summer Intern - Digimax Inc.**, Taipei, Taiwan July 2011 - Sep. 2011
- **Teaching Assistant - National Taiwan University**, Taipei, Taiwan  
– Digital Image Synthesis (Rendering, 5 times) Sep. 2009 - Jan. 2014
- **Teaching Assistant - National Chiao Tung University**, Hsinchu, Taiwan  
– Computer Graphics Sep. 2008 - Jan. 2009

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## Publications

- **Learning to Cluster for Rendering with Many Lights**  
Yu-Chen Wang, Yu-Ting Wu\*, Tzu-Mao Li, Yung-Yu Chuang (\*: the corresponding author)  
Conditionally accepted to ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia 2021)  
SCI, JCR 2021 IF: to appear (2020 5-Year IF: 6.445).
- **Multi-Resolution Shared Representative Filtering for Real-Time Depth Completion**  
Yu-Ting Wu, Tzu-Mao Li, I-Chao Shen, Hong-Shiang Lin, Yung-Yu Chuang  
In Proceedings of High-Performance Graphics (HPG 2021), Online, July 2021
- **ClipFlip: Multi-view Clipart Design**  
I-Chao Shen, Kuan-Hung Liu, Li-Wen Su, Yu-Ting Wu, Bing-Yu Chen  
In Computer Graphics Forum, volume 40, number 1, page 327-340, February 2021  
SCI, JCR 2021 IF: to appear (2020 5-Year IF: 2.459).
- **Dual-Matrix Sampling for Scalable Translucent Material Rendering**  
Yu-Ting Wu, Tzu-Mao Li, Yu-Hsun Lin, Yung-Yu Chuang  
In IEEE Transactions on Visualization and Computer Graphics (TVCG), volume 21, number 3, page 363-374,  
March 2015  
SCI, JCR 2015 IF: 1.400, Computer Science, Software Engineering, Rank 25 of 106, Q1

- **VisibilityCluster: Average Directional Visibility for Many-Light Rendering**  
Yu-Ting Wu, Yung-Yu Chuang  
In IEEE Transactions on Visualization and Computer Graphics (TVCG), volume 19, number 9, page 1566-1578, September 2013.  
SCI, JCR 2013 IF: 1.919, Computer Science, Software Engineering, Rank 13 of 105, Q1
- **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)*  
SCI, JCR 2012 IF: 3.361, Computer Science, Software Engineering, Rank 1 of 105, Q1

## Workshop Papers, Short Papers, Posters

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- **VisibilityChunk: Average Directional Visibility for Importance Sampling**  
Yu-Ting Wu, Yung-Yu Chuang  
In ACM SIGGRAPH Asia 2012 Poster, article 44, Singapore, November 2012 *(selected as a highlight poster by the chair)*
- **Improved Reflective Shadow Maps with Visibility Approximation**  
Mifan Bang, Yu-Ting Wu, Yung-Yu Chuang  
In Computer Graphics Workshop (CGW), Taipei, Taiwan, July 2011
- **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  
In International Workshop on Advanced Image Technology (IWAIT) 2008 Poster, Hsinchu, Taiwan

## Patents

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- **Electronic device, method for displaying an augmented reality scene and non-transitory computer-readable medium**  
Yu-Ting Wu, Ching-Yang Chen  
ROC Patent No: I711966, December 01, 2020  
US Patent No: 10636200, April 28, 2020
- **Virtual reality device, image processing method, and non-transitory computer-readable medium**  
Yu-Ting Wu, Chun-Wen Cheng, Ching-Yang Chen  
ROC Patent No: I684163, February 01, 2020
- **Three-dimensional modeling method and electronic apparatus thereof**  
Sheng-Jie Luo, Liang-Kang Huang, Yu-Ting Wu, Tung-Peng Wu  
US Patent No: 10152827, December 11, 2018

## Honors and Awards

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- Highlight Paper, SIGGRAPH Asia 2012
- Highlight Poster, SIGGRAPH Asia 2012 Poster
- Honorary Member, Phi-Tau-Phi Scholastic Honor Society, 2007
- President's Awards, National Chiao Tung University, Fall 2007
- Master Freshman Scholarship, National Chiao Tung University, 2007
- 3rd place at Communication Competition Contest, Ministry of Education, 2006
- 2nd place at Computer Science Project Competition, National Chiao Tung University, 2006
- Academic Excellence Award, National Chiao Tung University, Fall 2006
- Academic Excellence Award, National Chiao Tung University, Spring 2006
- Academic Excellence Award, National Chiao Tung University, Fall 2005
- Academic Excellence Award, National Chiao Tung University, Spring 2005

- Academic Excellence Award, National Chiao Tung University, Fall 2004
- Academic Excellence Award, National Chiao Tung University, Spring 2004
- Academic Excellence Award, National Chiao Tung University, Fall 2003

## Selected Projects

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- **Inception - Virtual Studio System**, *Toppano Inc.* *May 2018 - Jan. 2020*  
A virtual studio system implemented upon Unity and Unreal Engine with the following features: RGB-D video enhancement, real-time matting, virtual lighting augmentation, and mixed reality preview
- **LightProbeGen - AR/MR Lighting Tool**, *HTC Inc.* *Oct. 2017 - Mar. 2018*  
An intuitive tool for generating realistic, real-world lighting for AR/MR applications using HTC VIVE (patent invention: ROC: I71196 / US: 106362)
- **TrueColor - VR Game**, *HTC Inc.*, [Link] *Apr. 2017 - Mar. 2018*  
An VR game of spray painting and pen drawing (patent invention: ROC: I684163)
- **Arcade Saga - VR Game**, *HTC Inc.*, [Link] *Apr. 2016 - Mar. 2017*  
The first exclusive VR game for HTC VIVE
- **3D Face Reconstruction**, *HTC Inc.* *Sep. 2014 - Aug. 2015*  
A face reconstruction algorithm that can generate the 3D model of the face from a single image (patent invention: US: 10152827)

## Professional Services

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- **Reviewer**
  - CVPR, ICCV, ECCV, WSCG, APMAR, TVC, JISE
- **Invited Talks**
  - **Virtual Reality: Technology and Content Development**, *May 2016*  
National Cheng Kung University, Tainan, Taiwan  
Yuan Ze University, Taoyuan, Taiwan
  - **Introduction to Physically-Based Ray Tracing**, *Dec. 2013*  
Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan

## References

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- **Yung-Yu Chuang**  
Professor, National Taiwan University  
cyu@csie.ntu.edu.tw
- **Bing-Yu Chen**  
Distinguished Professor, National Taiwan University  
robin@ntu.edu.tw
- **Zen-Chung Shih**  
Professor, National Chiao Tung University  
zcshih@cs.nctu.edu.tw
- **Tzu-Mao Li**  
Assistant Professor, University of California San Diego  
tzumao@mit.edu
- **Ching-Yang Chen**  
Project lecturer, Ming Chuan University (my supervisor when I was in HTC Inc.)  
sun721@gmail.com