# Yu-Ting Wu

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## Research Interests

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

## Current Position

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| Feb. 2020 – Present | **Postdoctoral Researcher**<br>National Taiwan University<br>Communication and Multimedia Lab. | Taipei, Taiwan |

## Education

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| Sep. 2009 – Jun. 2014 | **Ph.D. in Computer Science**<br>National Taiwan University<br>Advisor: Yung-Yu Chuang<br>Dissertation: *Sampling and Reconstruction Techniques for Efficient Monte Carlo Rendering* | Taipei, Taiwan |
| Sep. 2007 – Jun. 2009 | **M.S. in Computer Science**<br>National Chiao Tung University<br>Advisor: Zen-Chung Shih<br>Thesis: *Visibility-Guided Importance Sampling* | Hsinchu, Taiwan |
| Sep. 2003 – Jun. 2007 | **B.S. in Computer Science**<br>National Chiao Tung University<br>Rank 1st in class<br>Member of Phi-Tau-Phi Scholastic Honor Society in 2007<br>7 times Academic Excellence Award (top 5%) | Hsinchu, Taiwan |

## Employment History

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| May. 2018 – Jan. 2020 | **Sr. Algorithm Developer**<br>TopPano Inc.<br>Develop computer vision and AR/MR algorithms | Taipei, Taiwan |
| Projects | *Inception (Virtual Studio System)*<br>*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 had been used to assist the final projects of Department of Digital Culture Creation and Multimedia, China University of Science and Technology from 2019 to 2020. | |
| | *Batman (Multi-object Tracking System)*<br>Batman is a high-accuracy system for multi-object tracking, consisting of both hardware devices and software algorithms. | |

| Sep. 2014 – Apr. 2018 | **Pr. Engineer** | New Taipei City, Taiwan |
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HTC Inc.

Develop computer vision and AR/MR algorithms

*LightProbeGen (AR/MR Lighting Tool)*

*LightProbeGen* is an intuitive and fun tool for assisting AR/MR applications to construct real-world lighting environment.

*TrueColor (VR App. for Painting and 3D Model Texture Design)*

*TrueColor* 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 *VIVEPORT*.

*Arcade Saga (VR Game)*

*Arcade Saga* is the first exclusive VR game for HTC VIVE. It has already hit the store shelves on *VIVEPORT* and *Steam*.

*3D Face Reconstruction*

An algorithm for creating a 3D face model from a single image

| Jul. 2011 – Sep. 2011 | **Summer Intern** | Taipei, Taiwan |
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Digimax Inc.

| Fall 2009 – 2013 | **Teaching Assistant** | Taipei, Taiwan |
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National Taiwan University

Course: Digital Image Synthesis

## *Academic Activities*

| May. 2016 | **Invited Talk** | Tainan, Taiwan |
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National Cheng Kung University

Topic: Virtual Reality: Technology and Content Development

| May. 2016 | **Invited Talk** | Taoyuan, Taiwan |
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Yuan Ze University

Topic: Virtual Reality: Technology and Content Development

| Dec. 2013 | **Invited Talk** | Hsinchu, Taiwan |
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Industrial Technology Research Institute (ITRI)

Topic: Introduction to Physically-Based Ray Tracing

## *Publications*

**ClipFlip: Multi-view Clipart Design**

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

*accepted to Computer Graphics Forum (to appear)*

**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.

**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.

**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)

## *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