Yu-Ting Wu

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https://kevincosner.github.io/

Research Interests

- Computer graphics, GPU programming, VR/AR/MR, image processing, computer vision, artificial intelligence

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

Experiences

- **Technical Manager - MediaTek Inc.**, Taipei, Taiwan *Sep. 2021 - Present*
- **Postdoctoral researcher - National Taiwan University**, Taipei, Taiwan *Feb. 2020 - Jul. 2021*
  - 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*

Publications

- **Learning to Cluster for Rendering with Many Lights**
  Yu-Chen Wang, Yu-Ting Wu*, Tzu-Mao Li, Yung-Yu Chuang (*: the corresponding author)
  ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia 2021), volume 40, number 6, article 277, to appear, Tokyo, Japan, December 2021. (SCI, EI)
  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. (EI)
- **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, EI)
  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, EI)
  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, EI)
  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, EI)
  SCI, JCR 2012 IF: 3.361, Computer Science, Software Engineering, Rank 1 of 105, Q1

Workshop Papers, Short Papers, Posters

- **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 2011), 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 2008 Poster, Hsinchu, Taiwan, January 2008

Patents

- **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

- Highlight Paper, SIGGRAPH Asia 2012
- Highlight Poster, SIGGRAPH Asia 2012 Poster
- Honorary Member, Phi-Tau-Phi Scholastic Honor Society, 2007
- Academic Excellence Award, 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

- **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

- **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

- **Yung-Yu Chuang**
  Professor, National Taiwan University
  cyy@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 suvervisor when I was in HTC Inc.)
  sun721@gmail.com