Yu-Ting Wu

kevincosnerwu@gmail.com +886963111450
https://kevincosner.github.io/

Research Interests

- Computer graphics, computational photography, image processing, VR/AR/MR, GPU programming, machine learning

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

- **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*

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 276, to appear, Tokyo, Japan, December 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

- **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