Yu-Ting Wu

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

Research Interests

- Computer graphics, computer vision, extended reality (VR/AR/MR), image processing, GPU programming, 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 1^{st} in class, 6 times Academic Excellence Award (top 5%)
  Honorary Member of Phi-Tau-Phi Scholastic Honor Society in 2007

Academic Experience

- **Assistant Professor - National Taipei University**, New Taipei City, Taiwan *Feb. 2022 - Now*
  - Department: Computer Science and Information Engineering
- **Postdoctoral researcher - National Taiwan University**, Taipei, Taiwan *Feb. 2020 - Jul. 2021*
  - Host: Yung-Yu Chuang
- **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*

Industry Experience

- **Technical Manager - MediaTek Inc.**, Taipei, Taiwan *Sep. 2021 - Jan. 2022*
- **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*

Publications

- **StylePart: Image-based Shape Part Manipulation**
  I-Chao Shen, Li-Wen Su, **Yu-Ting Wu**, Bing-Yu Chen
  The Visual Computer, to appear.
  [SCI, JCR 2022 IF: 3.500, Computer Science, Software Engineering, Ranking 31.48%]
- **Improving Cache Placement for Efficient Cache-based Rendering**
  Yu-Ting Wu*, I-Chao Shen (*: the corresponding author)
  The Visual Computer, to appear.
  [SCI, JCR 2022 IF: 3.500, Computer Science, Software Engineering, Ranking 31.48%]

- **360MVSNet: Deep Multi-view Stereo Network with 360° Images for Indoor Scene Reconstruction**
  Ching-Ya Chiu, **Yu-Ting Wu**, I-Chao Shen, Yung-Yu Chuang
  In Proceedings of IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023, Waikoloa, Hawaii, January 2023.
- **StyleFaceUV: a 3D Face UV Map Generator for View-Consistent Face Image Synthesis**
  Wei-Chieh Chung*, Jian-Kai Zhu*, I-Chao Shen, **Yu-Ting Wu**, Yung-Yu Chuang (*: joint first authors)
  In Proceedings of British Machine Vision Conference (BMVC) 2022, London, UK, November 2022.
- **ScannerNet: A Deep Network for Scanner-Quality Document Images under Complex Illumination**
  Chih-Jou Hsu, **Yu-Ting Wu**, Ming-Sui Lee, Yung-Yu Chuang
  In Proceedings of British Machine Vision Conference (BMVC) 2022, London, UK, November 2022.
- **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, Tokyo, Japan, December 2021.
  [SCI, JCR 2021 IF: 7.403, Computer Science, Software Engineering, Ranking 8.18%]
- **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: 2.363, Computer Science, Software Engineering, Ranking 48.18%]
- **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, Ranking 23.58%]
- **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, Ranking 12.38%]
- **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, Ranking 0.95%]

Preprints, 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

Grants

- **Photo-realistic Rendering Algorithms for Extended Reality and Mobile Devices (2/2)**, *NSTC*, PI, *Aug. 2023 - Jul. 2024*
- **Photo-realistic Rendering Algorithms for Extended Reality and Mobile Devices (1/2)**, *NSTC*, PI, *Aug. 2022 - Jul. 2023*

Honors and Awards

- Teaching Excellence Award, National Taipei University (top 4%), 2023
- Annual Excellent Advisor, National Taipei University, 2023
- 3rd place in Undergraduate Project Contest 2023 (as an advisor), National Taipei University, 2023
- 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 in Communication Competition Contest, Ministry of Education, 2006
- 2nd place in 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

Products

- **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
- **TrueColor - VR Game**, *HTC Inc.*, [Link] *Apr. 2017 - Mar. 2018*
  An VR game of spray painting and pen drawing

- **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

Professional Services

- **Reviewer**
  - SIGGRAPH 2024, CVPR 2024, CVPR 2023 (Emergency), ACCV 2022 (Emergency), ICCV 2021, APMAR 2021, CVPR 2020, ECCV 2020 (Emergency), WSCG 2013, IEEE TMM, TVC, JISE
- **Invited Talk**
  - **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**
  Distinguished 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