Han-Wei Kung

Basic Info

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Education

2014–2019 | **Ph.D. in Media Arts and Technology**
University of California at Santa Barbara, Santa Barbara, California, USA
Thesis: Stylized 3D Scene Synthesis in Virtual Reality

2012–2014 | **M.S. in Visualization**
Texas A&M University, College Station, Texas, USA
Thesis: Curved Pattern Origami

2010–2011 | **M.Eng. in Computer Science**
Cornell University, Ithaca, New York, USA

2003–2007 | **B.S. in Computer Science**
National Chiao Tung University, Hsinchu, Taiwan

Work Experience

Oct 2021–Now | **Research Fellow**
National University of Singapore, Singapore
- Research neural rendering for facial and body reenactment.

Jun 2017–Sep 2021 | **Software Engineer**
Pinscreen, Los Angeles, California, USA
- Synthesized face images and videos using deep neural networks.
- Processed face images for building deep learning models that generate 3D face models and textures.
- Built pipeline that automates data processing in the Unity game engine.
- Developed interfaces that allow users to download and render 3D human models from 2D pictures with the Unity game engine.
- Collaborated with team members to integrate art assets (3D models, animation, and materials) for real-time visual content.

Jun 2016–Sep 2016 | **Research and Development Shading Intern**
DreamWorks Animation, Los Angeles, California, USA
- Developed a wireframe shader, which provides the edge flow and topology information of a 3D model.
- Developed a curvature shader, which visualizes mesh curvature by measuring the angle between the surface normal and its neighboring normals.
- Developed a blend normal shader, which shades objects by interpolating colors based on the angle between the normal at the point being shaded and the viewing direction.

Teaching Experience

Jan 2015–Jun 2017	**Teaching Assistant/Grader** *University of California at Santa Barbara, Santa Barbara, California, USA* - Teaching Assistant for CS 154: Computer Architecture, CS 140: Parallel Scientific Computing, and CS 16/24: Problem Solving with Computers I/II. - Grader for CS 185: Human-Computer Interaction, CS 225: Information Theory, and CS 281B: Advanced Topics in Computer Vision.
Aug 2013–May 2014	**Teaching Assistant** *Texas A&M University, College Station, Texas, USA* - Teaching assistant for VIST 270/271: Computing for Visualization I/II.

Awards

2016	**Yin Chin Scholarship** *Yin Chin Foundation of USA, Los Angeles, California, USA*
2015	**Study Abroad Scholarship** *Taiwan Ministry of Education, Taipei, Taiwan*
2012	**Departmental Honors Scholarship** *Texas A&M University, College Station, Texas, USA*
2006	**Study Abroad Scholarship** *National Chiao Tung University, Hsinchu, Taiwan*
2006	**Zyxel Scholarship** *Zyxel Communications, Hsinchu, Taiwan*
2003–2007	**Presidential Award** *National Chiao Tung University, Hsinchu, Taiwan*

Publications

1. **Normalized avatar synthesis using stylegan and perceptual refinement**. Huiwen Luo, Koki Nagano, **Han-Wei Kung**, Qingguo Xu, Zejian Wang, Lingyu Wei, Liwen Hu, and Hao Li. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2021.

2. **AI-synthesized avatars: from real-time deepfakes to virtual AI companions**. Zejian Wang, Koki Nagano, Hao Li, Liwen Hu, Lain Goldwhite, **Han-Wei Kung**, Aviral Agarwal, Lingyu Wei, Yenchun Chen, Qingguo Xu, Jaewoo Seo, and Huiwen Luo. *ACM SIGGRAPH 2020 Real-Time Live!*. 2020.

3. **Into the vitality: Responsive modulation in graphics**. **Han-Wei Kung**. *16th EuroVR International Conference–EuroVR*. 2019.

4. **Pinscreen avatars in your pocket: mobile pagan engine and personalized gaming**. Koki Nagano, Shunsuke Saito, Lain Goldwhite, Kyle San, Aaron Hong, Liwen Hu, Lingyu Wei, Jun Xing, Qingguo Xu, **Han-Wei Kung**, Jiale Kuang, Aviral Agarwal, Erik Castellanos, Jaewoo Seo, Jens Fursund, and Hao Li. *SIGGRAPH Asia 2018 Real-Time Live!*. 2018.

5. **Deep learning-based photoreal avatars for online virtual worlds in iOS**. Koki Nagano, Jaewoo Seo, Kyle San, Aaron Hong, Mclean Goldwhite, Jun Xing, Stuti Rastogi, Jiale Kuang, Aviral Agarwal, **Han-Wei Kung**, Caleb Arthur, Carrie Sun, Stephen Chen, Jens Fursund, and Hao Li. *ACM SIGGRAPH 2018 Real-Time Live!*. 2018.

6. **Hairnet: Single-view hair reconstruction using convolutional neural networks**. Yi Zhou, Liwen Hu, Jun Xing, Weikai Chen, **Han-Wei Kung**, Xin Tong, and Hao Li. *Proceedings of the European Conference on Computer Vision (ECCV)*. 2018.

7. **Design tools for patterned self-folding reconfigurable structures based on programmable active laminates**. Edwin A. Peraza Hernandez, Darren J. Hartl, Richard J. Malak Jr, Ergun Akleman, Ozgur Gonen, and **Han-Wei Kung**. *Journal of Mechanisms and Robotics*. 2016.

8. **Towards building smart self-folding structures**. Edwin A. Peraza Hernandez, Shiyu Hu, **Han-Wei Kung**, Darren Hartl, and Ergun Akleman. *Computers & Graphics*. 2013.