

# YING-SHENG LUO

Taipei, Taiwan  
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<https://ysluo.github.io/>

## EDUCATION

### National Taiwan University of Science and Technology

BS in Computer Science *GPA: 4.13/4.30*

Taipei, TW  
Sep 2013 - Jun 2016

### National Taiwan University of Science and Technology

MS in Computer Science *GPA: 3.94/4.00*

Taipei, TW  
Sep 2016 - Jun 2018

## WORK EXPERIENCE

### Research Engineer, Inventec Corporation

July 2018 - Present

- Developed RL frameworks for learning locomotion skills for quadruped and biped characters.
- Built an iOS APP and backend restful API server with Kafka job queues to deploy AI products.

### Graphics Engineer Intern, International Games System Corporation

June 2015 - July 2015

- Implemented color grading, dynamic clouds, lightmaps, and HDR cubemap using GLSL and Cocos2d.
- Explored GPU performance analysis tool to improve rendering performance on mobile devices.

## SKILLS

Programming Languages: C++, Python, TensorFlow, C#, OpenGL, GLSL, Swift  
Tools: Unity, Blender, Visual Studio, Visual Studio Code, Xcode  
Research Interests: Computer Graphics, Computer Animation, Deep Reinforcement Learning, and Real-time Rendering

## PUBLICATIONS

### Journals & Conferences

- Jonathan Hans Soeseno, **Ying-Sheng Luo**, Trista Pei-Chun Chen, and Wei-Chao Chen. Transition Motion Tensor: A Data-Driven Approach for Versatile and Controllable Agents in Physically Simulated Environments. *SIGGRAPH Asia 2021 Technical Communications (Proc. SIGGRAPH Asia 2021)*.
- **Ying-Sheng Luo**, Jonathan Hans Soeseno, Trista Pei-Chun Chen, and Wei-Chao Chen. CARL: controllable agent with reinforcement learning for quadruped locomotion. *ACM Transactions on Graphics (Proc. SIGGRAPH 2020)*, 39, 4, Article 38.
- Zhong-Qi Cai, **Ying-Sheng Luo**, Yu-Chi Lai, Chih-Shiang Chan, Wen-Kai Tai. Interactive Iconized Grammar-Based Pailou Modelling. *Computer Graphics Forum*, Vol. 39, No. 1 (2020).
- Kuo-Wei Chen, **Ying-Sheng Luo**, Yu-Chi Lai, Yan-Lin Chen, Chih-Yuan Yao, Hung-Kuo Chu, Tong-Yee Lee. Image Vectorization With Real-Time Thin-Plate Spline. *IEEE Transactions on Multimedia (TMM)*, Vol. 22, No. 1 (2020).

### Books

- Hung-Kuo Chu et al. OpenGL 3D real-time rendering programming. 2018. Flag Technology. (ISBN-13: 9789863125112) - Author of Chapter 13. Advanced Rendering Techniques and Chapter 16. Post-Processing.
- Yu-Chi Lai et al. Popular games do this! Unity3D Game Design Example Lecture 2nd Edition. 2016. Flag Technology. (ISBN-13: 9789863123552) - Author of Chapter 4. Character Animation.

### Patents

- **Ying-Sheng Luo**, Jonathan Hans Soeseno, Trista Pei-Chun Chen, and Wei-Chao Chen. Method for Training Locomotion Controller of Robotic Animal. Taiwan patent I739604. Sep. 11, 2021.

## PROJECTS

**Physics-based Character Animation** (2020-2022): Create simulated characters learned from motion capture data using Deep-RL and GAN such that the character produces natural movements while obeying high-level user directives.

**I-SWAT: AI-assisted diagnostics software in skin wound** (2020-2021): Developed the iOS App using Swift and back-end inference server using PHP, Nginx and Kafka. The medical iOS APP passed the security certificate licensed by Gapertise.

**Interior Lighting Design** (2017-2018): Developed a framework to control interior lights and window blinds based on sunlight and weather to maximize comfort lighting experiences. This is achieved by computing global illumination of a 3D interior scene using precomputed radiance transfer and spherical harmonics lighting.