

Janghun Kim

Programmer



SUMMARY

Hi, I'm Janghun Kim and Master Student from University of Sungkyunkwan. I majored Computer Graphics with a focus on real-time rendering techniques. Currently, I consider myself a novice in programming and acknowledge that I have room for improvement. So, I am eager to learn quickly and excel in my studies :)

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(<https://www.linkedin.com/in/janghun/>)

Experience



Jan 2021 – present

Master Student at Univ. of Sungkyunkwan, CG Lab. (<http://cg.skku.edu/>)

SUMMARY

I majored in computer graphics and conducted research on Real-time rendering in University of Sungkyunkwan, CG Lab. ACM SIGGRAPH, an International academic conference, approved one journal paper by the first author, and KSC, a domestic academic conference, published one short paper by the first author

- (Journal Track) Potentially Visible Hidden-Volume Rendering for Multi-View Warping, Janghun Kim and Sungkil Lee, ACM Trans. Graphics (Proc. SIGGRAPH'23)
- Keyword: Visibility, Geometric-based Inpainting Method, Post-Processing

Jun 2022 – Nov 2022

Student Researcher at SKKU, CG Lab. with ETRI ([한국전자통신연구원](http://cg.skku.edu/fund/))

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SUMMARY

Using multiple-plane RGB images and additional Depth maps, we worked on a project to synthesize and improve novel-views.

- A project to process novel-view images with known-view multiple-plane RGBZ images.
- My role: Modifying the Encoding Format(add depth info.), Novel-View Synthesis using Forward Warping

Apr 2023 – Aug 2023

Student Researcher at SKKU, CG Lab. with Samsung Electronics

SUMMARY

[SECURITY]

- [SECURITY]
- My role: C++ programming, Shader Programming

Skills



C++ Application Development :

★☆☆

C++

Shader Programming :

★☆☆

OpenGL GLSL

Sociability :

★★★

Leadership Affable

Oct 2023 – Aug 2023

Intern at PearlAbyss - Game Engine Graphics Team (<https://www.pearlabyss.com>)

SUMMARY

I worked on a real-time depth-of-field implementation project using post-processing techniques. Over the course of 8 weeks, I received feedback from senior rendering engineers, and completed a high-quality depth-of-field rendering that runs at approximately 1.1ms on an RTX 3060 environment.

- Reference Depth-of-Field Method: <https://www.iryoku.com/next-generation-post-processing-in-call-of-duty-advanced-warfare/>
- keyword: Scatter-As-You-Gather, Guided Filtering, Background Reconstruction, Karis average, Optimization by CoC

Education



Mar 2017 – Aug 2022

Bachelor in Computer Science and Engineering from University of Sungkyunkwan with GPA of 3.96

Sep 2022 – *present*

Master in Computer Science and Engineering from University of Sungkyunkwan with GPA of 4.0

Publications



Dec 2021

모션 조작 요소 기반의 볼륨 변형 애니메이션 저작 및 생성 기법

(<https://cg.skku.edu/pub/korean/papers/2021-kim-ksc-cvox-cam.pdf>) **by KSC**

SUMMARY

볼륨의 직접 변형 기법과 달리 조작점 기반의 간접 변형 기법은 최소한의 사용자 조작 기반으로 볼륨 전체에 적용되는 역동적인 효과를 생성할 수 있다. 본 논문은 모션 조작 요소기반으로 볼륨을 변형하는 기법을 제안한다. 제안하는 기법은 조작점 기반으로 저수준의 모션 조작 요소를 정의하고, 고수준에서 그 요소들을 시공간적으로 조합하여 볼륨 변형을 시도한다. 고수준의 모션 조합은 사용자의 의도와 일치하게 수동으로 조합할 수 있고, 또한 랜덤 조합을 통해 새롭게 변형된 애니메이션을 생성할 수도 있다. 수동 조합은 형체가 존재하는 사물이나 생물의 직관적 변형에 적합하고, 랜덤 조합은 불규칙한 형태의 객체에서 새로운 애니메이션을 생성하는데 적합하다.

Aug 2023

Potentially Visible Hidden-Volume Rendering for Multi-View Warping<http://cg.skku.edu/pub/2023-kim-siggraph-pvhv> by ACM

SUMMARY

This paper presents the model and rendering algorithm of Potentially Visible Hidden Volumes (PVHVs) for multi-view image warping. PVHVs are 3D volumes that are occluded at a known source view, but potentially visible at novel views. Given a bound of novel views, we define PVHVs using the edges of foreground fragments from the known view and the bound of novel views. PVHVs can be used to batch-test the visibilities of source fragments without iterating individual novel views in multi-fragment rendering, and thereby, cull redundant fragments prior to warping. We realize the model of PVHVs in Depth Peeling (DP). Our Effective Depth Peeling (EDP) can reduce the number of completely hidden fragments, capture important fragments early, and reduce warping cost. We demonstrate the benefit of our PVHVs and EDP in terms of memory, quality, and performance in multi-view warping.