

Beomsu Kim

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Skills

Education

University of California San Diego Sep.2019-Jun.2023
BS CSE: Computer Engineering
ROK National Forestry Cooperative Federation Scholarship Dec.2022-Jun.2023

Experience

Junior Developer

- Spring • Java • SQL • MVC • JQuery • Deep Learning • PyTorch
Fountain Valley **Solomon America** Feb.2024-Now
- Managing and developing solutions for Hyundai and Kia's technical quality management system using JQuery, Oracle SQL, and Spring MVC structure
- Collaborating with the senior member to reconstruct a webapp version of the solution
- Preparing to participate in a machine learning project with Hyundai Glovis

Software Engineer

- HTML • React • ComputerVision • Machine Learning • Deep Learning
Los Angeles **Mitaa** Sep.2023-Feb.2024
- Built a [website](#) for memory clinic
- Managed patient dataset to use SSD to analyze medical images to catch Alzheimer's disease
- Built an appointment management system with **Google Firebase**

Machine Learning Engineer Intern

- Deep Learning • Machine Learning • TensorFlow • PyTorch
Busan, South Korea **AT Solution** Apr.2022-Jan.2023
- **TensorFlowed** for data engineering at a commercial industry field using **YOLO**
- Generated a model to detect a pattern recognition in an image dataset
- Served as an exhibitor for the company's booth at CES 2023 in Las Vegas and Collaborate with the team members to convince the potential customer of the products

Projects

vktutorial beta version

- Vulkan • Computer Graphics
- Dynamic Rendering for code simplicity and Interactive camera
- RenderDoc for Debugging
- Abstraction based on <https://vkguide.dev>

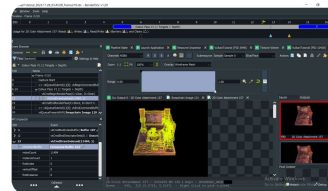
Jan.2024-Feb.2024



Tonemap Vulkan

- Vulkan • RenderDoc • Lua • Dear ImGui
- **Tonemapping** integrated with **Vulkan API** to
- Integrating **Dear ImGui**, and **Lua** to debug and test
- Planning to **RenderDoc** for shader debugging

Nov.2023-IP



Dive into Deep Learning

- Machine Learning • Python • PyTorch • TensorFlow • MxNet • d2l
- Implemented the concept of machine learning following the guide in *Dive into Machine Learning*
- **Recommender System, GANs, Transformer, Deep FM**
- Colabed for producing immediate output and feed back

Jul.2023-Oct.2023

Particle System with subdivision

- Computer Graphics • C/C++ • Multithread • The Forge • Vulkan
- Advanced GPU rendering based on **TF** engine(**AAA**) **Vulkan** and **DirectX** pipeline simulating particle collision responses
- Instanced, indirect, and indirect with compute **shader rendering options** to compare the performance between them
- **LOD** strategy used for performance acceleration

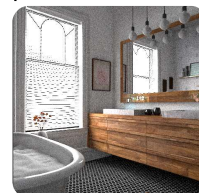
Aug.2023-Sep.2023



Ray Tracing and Tone Mapping

- Computer Graphics • C/C++ • Multithread • lldb
- Ray tracing renderer with **BVH** and multithread acceleration
- **Importance sampled** for area lights and used GoogleTest
- Several **Tone Mapping** strategies are used

Apr.2023-Jul.2023



ETA Predictor

- Machine Learning • Python • Colab • Deep Learning • PyTorch
- Feature engineered based on traffic information of the traffic data set in **Kaggle**
- Used **d2l** library referencing the book Dive into Deep Learning to solve real world problems by analyzing the pattern
- Planning to leverage error function than sigmoid to be robust against outliers

Apr.2023-May.2023

Catmull Clark Subdivision

- Computer Graphics • C++ • OpenGL
- **OpenGL** subdivision program using half-edge structure
- lldb to debug the mesh components
- Planning to compare with OpenSubdiv [Pixar 2012]

Jul.2022-Aug.2022

