Xinyi Xiong

+1 801-638-3796 | Xinyi.Xiong@utah.edu | GitHub link: https://github.com/xiaoxianrouzhiyou

EDUCATION

University of Utah — **Salt Lake City, UT**
Ph.D, Computer Science, Graphics, advised by Cem Yuksel — 08/2022 - present

University of Chinese Academy of Sciences — **Beijing, China**
Master, Computer Engineering, advised by Yu Yao, GPA:3.65/ 4.0 — 09/2016 - 06/2019

Zhejiang Sci-Tech University — **Hangzhou, China**
Bachelor, Digital Media Technology, GPA: 88/ 100 (Top 1 of the class) — 09/2012 - 06/2016
- Summa cum laude, three times fellowship recipient

RESEARCH EXPERIENCE

Collision Detection Algorithm Based on Hybrid Octree — **Chengdu, China**
Graduate assistant | Smart Medical Lab, UCAS — 10/2018 - 02/2019

- Proposed a space decomposition algorithm combining static octree and dynamic octree for the problem of collision detection between dynamic objects and static scenes in virtual surgery application
- Verified the feasibility of the algorithm under space-saving and time-saving by my BigBear Editor

PROJECTS

BigBear Editor: A 3D Engine & Editor Based on OpenGL — **Online**
Software Developer — 05/2021 - present

- Created a lightweight 3D engine & editor by using QT, C++ and OpenGL
- Verified a variety of computer graphics algorithms and papers by the engine
- Built a rendering system
  - Implemented texture, material modules, etc.
  - Implemented the forward and deferred rendering pipelines
  - Implemented classic algorithms by the engine, such as PBR with IBL support, cartoon rendering, illumination model, ray tracing, photon mapping, volume rendering, high performance rendering, shadow, etc.
- Built a physics system by implementing SPH fluid simulation and PBD clothing simulation
- Used advanced OpenGL technology by implementing some features, such as SSBO, compute shader, geometry shader

BigBear Driving School: An Android App — **Hangzhou, China**
Software Developer — 04/2016 - 05/2016

- Created a C/S structured Android application by using Eclipse+ADT+XAMPP with Java and PHP as my graduation project
- Implemented application functionality, such as browsing, third-party sharing, interacting with the server, taking mock tests and watching videos

WORK EXPERIENCE

Kingsoft Seasun Games — **Zhuhai, China**
Software Engineer | Self-developed Game Engine Group — 07/2019 - 01/2022

- Used C++ & Lua programming and Unity to implement functions and solve problems
- Maintained and updated independently the destruction system based on PhysX & Apex physics engines
- Assisted the mentor to solve problems for the FleX-based clothing system
- Conducted survey on destruction performance

PUBLICATION

Xinyi Xiong, Yu Yao. *Dynamic Object Collision Detection Algorithm Based on Hybrid Octree,* Journal of Computer Applications. 2019, 39(S1):96-99

SKILLS & ACHIEVEMENTS

- C/C++, Visual Programming, Unity, Shader, Deep Learning & Computer Vision Basics
- Participated in the Global Game Jam 2020 Shanghai: A Unity Narrative Decryption Game