Yu Chang

https://g1n0st.github.io

Email : g1n0st@live.com

Mobile : +86-147-0570-5313

EDUCATION

- **University of Electronic Science and Technology of China** — Chengdu, Sichuan, China
  Bachelor of Engineering in Software Engineering, Elite Program — *Aug. 2019 – Present*
    - **GPA**: 4.00/4.00
    - **Average Score**: 91.2
    - **Excellent Course**: **GAMES 201**(Final project as the outstanding project displayed on the course official website), **GAMES 102**(Outstanding homework), Computer Architecture(91/100), Data Structure and Algorithm(94/100)

SELECTED GRAPHICS RELATED PROJECTS

- **AyaRay** | *Modern C++, Intel® Embree, Physically-based rendering*:
    - A Paralleled Monte Carlo Path Tracing Renderer
    - Importance Sampling, Multiple Importance Sampling
    - Light Transport Algorithms: Practical Path Guiding(PPG), BDPT, MMLT, VCM
    - Disney BRDF, GGX BRDF
    - Use with the SIMD/SSE4 Instructions in Matrix Operations

- **taichi_ferrofluid** | *Taichi, Python, Physically-based simulation*:
    - A Level-Set Method Euler Ferrofluid Simulator
    - Fast Marching Method, Fast Sweeping Method
    - Semi-Lagrangian/APIC Advection Scheme
    - Ghost Fluid Method, Volume Control Method, Semi-Implicit Surface Tension
    - Multi-grid Preconditioned Conjugate Gradient(MGPCG) for Poisson Equation

- **Multi-Species MLS-MPM** | *Taichi, Python, Physically-based simulation*:
    - Multi-species Mixture Model for sand-water coupling with MLS-MPM
    - Drucker-Prager Elastoplasticity for Sand Animation
    - Simulate 20K particles with 256x256 grid in Real-time

- **Implicit MPM** | *Taichi, Python, Physically-based simulation*:
    - An Implicit Material Point Method simulator with elastic model
    - Newton-Raphson Method, Preconditioned Conjugate Gradient(PCG) Solver
    - Optimization integrator for large time steps

- **Weakly Compressible SPH** | *Taichi, Python, Physically-based simulation*:
    - A Weakly Compressible SPH simulator in the Taichi Language
    - Pairwise Surface Tension Model

PUBLICATION

- **Real-time Physics Engine Based on MPM and PBD** :
    - *2020 International Conference on Virtual Reality and Visualization (ICVRV)*

HONOR AND AWARDS

- **National First Prize. China Competition on Virtual Reality - CCVR 2020** — Jilin, China
  A survey about the application of material point method in real-time scenarios (Advised by Yuanming Hu) — *Aug. 2020*

- **UESTC School Scholarship** — Sichuan, China
  Top 3% in the 2020 academic year — *Oct 2020*

SKILLS

- **Languages**: C++, CUDA, Python, the Taichi Programming Language
- **Frameworks**: OpenGL, Tensorflow, Unity
- **Math**: Numerical Analysis, Optimization, Matrix Theory, Scientific Computing