Yu Chang
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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**(The course project was selected as an outstanding project and displayed on the course official website), **GAMES 102**(Outstanding homework many times), Computer Architecture(91/100), Data Structure and Algorithm(94/100)

Selected Graphics Related Projects

- **AyaRay** | ***Modern C++, Intel® Embree, Physically based rendering***:
  - A physically based renderer for the purpose of learning global illumination and Ray Tracing
  - Importance Sampling, Multiple Importance Sampling
  - Light Transport Algorithms: PT, BDPT, MMLT, VCM
  - Disney BRDF
  - Use with the SIMD/SSE4 Instructions in Matrix Operations

- **Multi-Species MLS-MPM** | ***Taichi, Python, Physically based simulation***:
  - Multi-species model for sand-water coupling with **MLS-MPM** algorithm
  - Simulate 10k particles scene in Real-time
  - Make use of the Taichi Sparse Structure

- **Implicit MPM** | ***Taichi, Python, Physically based simulation***:
  - An implicit integrator implementation of MPM algorithm
  - Newton iteration combined Conjugate Gradient scheme
  - Applied Line-search and other optimizations in *Optimization integrator for large time steps*
  - Dimensionality-independent programming

- **Weakly Compressible SPH** | ***Taichi, Python, Physically based simulation***:
  - An implementation of WCSPH in the Taichi Language
  - Surface Tension Model in *Pairwise Force SPH Model for Real-Time Multi-Interaction Applications*
  - Export particles to .ply file, Reconstruct and Render scene by Houdini

Publication

- **Real-time Physics Engine Based on MPM and PBD** :
  - **ICVRV 2020**

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++, Python, the Taichi Programming Language
- **Frameworks**: OpenGL, Tensorflow, Unity, **ziran2020**
- **Math**: Numerical Analysis, Calculus, Linear Algebra, Scientific Computing