Yue Chang

CONTACT INFORMATION

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Github: https://github.com/Changy1506

EDUCATION

Peking University, China 2019 - now (expected 2022.07)

MSc., Computer Science
Research direction: Computer Graphics, Physical Simulation
Supervisor: Prof. Xiaowei He, Prof. Sheng Li and Prof. Guoping Wang

Trinity College Dublin, Ireland 2018 - 2018

Exchange student, Computer Science
Overall Grade: Class I

Beihang University, China 2015 - 2019

B.S., Computer Science and Technology
GPA: 3.7/4.0, Rank: top 8%

PUBLICATIONS

Semi-analytical Solid Boundary Conditions for Free Surface Flows

Yue Chang, Shusen Liu, Xiaowei He, Sheng Li, Guoping Wang
Compute Graphics Forum (Pacific Graphics), 2020

Combined Continuum-Discrete Modeling for Multiphysics Systems

Yue Chang, Xiaowei He, Shusen Liu, Yuzhong Guo, Sheng Li, Guoping Wang
In submission, 2021

PROJECTS

Boundary Conditions for SPH Free Surface Flows 2019.09 - 2020.07
Physically Based Simulation, Fluid Simulation, Boundary Conditions

- We present a semi-analytical approach to handle complex solid boundaries for SPH free surface flows. A CAD mesh file representing the boundary can be naturally integrated for SPH fluid simulations without boundary particle sampling. Our method can be integrated into both position-based methods and projection-based methods.
- Experiments show that our boundary handling approach can achieve comparable results with those phenomena simulated using ghost particles.
- Formed one research paper as first author, accepted by Pacific Graphics 2020.

Coupling of Multiphysics Systems 2020.09 - 2021.09
Physically Based Simulation, Solid-Fluid Coupling, Contacts

- We present a method where different physical systems (e.g. rigid bodies, deformable objects and fluids) could be coupled. Our method can handle the contacts between solid bodies as well as the two-way coupling between solid and fluid. We also propose a contact model that allowed us to adjust behaviors between rigidity and elasticity. To accelerate the collision detection procedure, we implemented a GPU-based sparse octree that supports efficient neighbor searching in open scenarios.
- Results show that our method supports simulating physical materials ranging from

one-dimensional threads, via two-dimensional thin shells, to three-dimensional rigid bodies, deformable objects and fluid. Besides, our method could capture versatile physical phenomena such as rigidity, elasticity, friction as well as controllable stickiness and slippiness at the solid fluid interaction boundary.
- Formed one research paper as first author, under review.

Open Source Project on Physical Simulation 2019.09 - now
Computer Graphics, Physically Based Simulation

- I am one of the contributors of PhysIKA, an open source node-based architecture targeted at real-time simulation of versatile physical materials. I am in charge of the C++/CUDA implementation of fluid boundary conditions, rigid body dynamics and part of the neighbor searching algorithm.
- Homepage: https://github.com/PhysikaTeam/PhysIKA.

Working Experience

MEGVII, China 2019.04 - 2019.11
Research Intern, Computer Vision, Person Re-Identification (Re-ID), Tracking
Mentor: Zhicheng Wang and Dr. Gang Yu

- We focused on improving the accuracy of tracking by providing feature from Person Re-Identification(Re-ID).
- We found that traditional CNN-based Re-ID features was not scene-independent, which may introduce noise for person tracking. We proposed training strategies to eliminate the influence from the background scene, resulting a 3% increase in identification recall(IDR).

AWARDS

Scholarship for Technical Innovation, First Prize, 2018
Scholarship for Academic Achievements, Second Prize, 2018
CCF Certified Software Professional (C/C++ Group), Top 0.24%, 2017
Lanqiao Collegiate Programming Contest (C/C++ Group), First Prize, 2017