Yu Fang

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Education

Undergraduate Student at Computer Science of Technology, Tsinghua University
GPA: 88/100, Expected Graduation: Jul. 2018

Research Interests

Physically Based Simulation (Primary), Rendering, Machine Learning

Experience

Computer Graphics Group at UPenn *Jun. 2017 - Now*

- Worked with Prof. Chenfanfu Jiang on the Material Point Method (MPM), to effectively and accurately simulate water and rigid bodies
- Proposed approaches to solve common issues about MPM (e.g. how to make incompressible liquid simulation divergence free and how to simulate thin-shell objects with coupling)
- Results will be submitted to SIGGRAPH 2018

Tsinghua Graphics and Geometric Computing Group *July. 2016 - Now*

- Worked with Prof. Shimin Hu and mastered background knowledge of simulation and rendering
- Focused on deep-learning-based video post processing
- Implemented a novel deep neural network model to deal with blurred videos, especially motion blur, which outperforms the state of the art
- A paper about our work is being written

Graphics Engineer Intern at Phantouch (a start-up company focusing on VR research) *Aug. 2015 - Dec. 2015*

- Built a low-latency VR system from scratch
- Responsible for the whole post-processing pipeline (lens distortion, bloom FX, god ray, etc.) and shadow maps
- Optimized the code to less than 12 milliseconds per frame

Leader of the Desktop Development Team, Tsinghua Lab μ Student Greek Association *Oct. 2014 - Now*

- Designed and developed a digital campus application (TUNet-Desktop)

Leader of the Roller Skating Team, Tsinghua University *Sep. 2016 - Aug. 2017*

Teaching Assistant for Fundamentals of Programming and Data Structures *Aut. 2014, Aut. 2015*

Projects

Taichi Computer Graphics Library Based on C++ and Python

- Participated in the development of Taichi with MPM, time-variant level sets and a WebGL-based visualization system (which allows checking results remotely)
- Collaborated with the project creator (Yuanming Hu) and published a poster about effective MPM on SIGGRAPH 2017

FRender Offline Renderer Based on C++

- Renderer supported path tracing and probabilistic progressive photon mapping and was built from scratch
- Implemented caustics, volume light, depth of field, image based lighting, etc

Topic Modeling Topic Predictor Based on Python, MapReduce

- Crawled questions and answers from a popular social website (Zhihu)
- Trained with Latent Dirichlet Allocation (LDA) model on a distributed system

Publications

An Asynchronous Material Point Method *SIGGRAPH 2017 Poster*
Yu Fang*, Yuanming Hu** (* equal contribution)

Awards

Gold Medal in ACM-ICPC Asia Dalian Region Contest *Oct. 2016*
Gold Medal in ACM-ICPC Asia Beijing Region Contest *Nov. 2014*
Silver Medal in National Olympiad in Informatics (NOI) *Jul. 2013*

Professional Skills

Programming:

- C++(OpenGL, Qt, Socket), Python(Tensorflow, Django, Flask), Java(Android, SSH)
- GLSL, Matlab, Unity3D, HTML/CSS/JS, VHDL, Assembly Language

Tools: Git, Vim, Ssh, Tmux, LaTeX