Xinglong Liu

Beihang University Computer Science – Virtual Reality Ph.D.

Phone: 13299403493 Email: liu3xing3long@163.com homepage: liu3xing3long.github.io

Education

Research Scholar, Stony Brook University	2015.10 – 2016.10	Advisor: Prof. Hong Qin
Ph.D. Candidate, Beihang University	2010.09 – 2015.09	Advisor: Prof. Qinping Zhao, Prof. Aimin Hao
Bachelor, Yantai University	2006.09 – 2010.06	N\A

Experience

Research Scholar, Stony Brook University 2015.10 – 2016.10

- Work on a computer diagnosis system on detecting lung nodules from thoracic CTs

Research Assistant, Beihang University 2010.09 – 2015.09

- Work on a reconstruction system for vascular arteries from multi-view X-Ray images
- Work on a 4D motion and shape reconstruction system for vascular arteries from sequential X-Ray series
- Work with other co-workers for building virtual reality applications (listed in **Participated Projects**)

Team Leader, Yantai University 2007.06 – 2007.09

- Work as a leader of 4-student team on a virtual tour application based on DirectX and earn 2nd place in Qilu Software Competition, organized by China Computer Federation, Jinan

Participated Projects

1. **Project**: A simulation system for tactic training 2011.06 – 2013.02

   Responsibilities: Coding server,client and UI logics for computer generated force (CGF) subsystem; Communicate and cooperate with other subsystems; This CGF supports complex

simulation over 100 entities. Coding lines: over 20,000 (C++).

Applied Techs.: CryEngine 3, United Command System, BH_Graph, BigWorld 2

2. **Project**: A distributed simulation system for tactic training 2010.09

Responsibilities: Coding logics for some kind of troops on both server side and client side. –

Applied Techs.: United Command System, BH_Graph 2011.05

3. **Project**: Miscellaneous short-term projects

Responsibilities: (1) IBR Cultural Relic Rendering (CUDA, OpenGL, C++), applying algorithms to render objects realtime at any angle, based on Image Based Rendering (IBR) and CUDA, which can be broadly used in cultural relics rendering and online shopping display. (2) Huge Real Scanned DEM Data Visualization for City Landscape (Unigine), constructing sceneries based on scanning from helicopter and unigine engine, which is much faster (1 week vs several months) than traditional modification methods by hands of artists. (3) Applications of City Lights, Physical Interactions and Particles Rendering (CE3), Digital Beihang (CE3), entending and implementing light and particle effects from CryEngine and constructing the Virtual Beihang based on cooperation with other artists. 2010.09 – 2013.02

4. **Project**: MMORPG game client design and application based on Ogre (bachelor diploma project)

Responsibilities: Analysis and complement of logics and interaction of a MMORPG game client based on Ogre, including game UI (CEGUI) system, game login system, cloth change system, inventory system and quest system, etc. , leading to a fundamental framework for a C/S game. Coding lines: over 20,000 (C++,Lua). 2009.06 – 2010.06

Applied Techs.: Ogre, C++

5. **Project**: A virtual walkthrough system based on DirectX

   Responsibilities: As a leader, accomplished a scene edit and walkthrough system based on DirectX, including UI (DXUT), model import, scene edit, scene serialization (SQLite), friend visit based on local network (Socket). This project took the 2nd Place in Qilu Software Design Competition, held by CCF, Jinan. 2007.05 – 2007.09

   Applied Techs.: DirectX, C++

Publications

1. **Xinglong Liu,** Fei Hou, Hong Qin, Aimin Hao , "A Computer-aided Lung Nodule Detection System for Thoracic CT Images", **SCIENCE CHINA Information Sciences[J],** Accepted.

2. **Xinglong Liu,** Fei Hou, Hong Qin, Aimin Hao , "Multi-view Multi-scale CNNs for Lung Nodule Type Classification from CT Images", **Pattern Recognition[J],** Accepted.

3. **Xinglong Liu,** Fei Hou, Hong Qin, Aimin Hao , "Robust Optimization-based Coronary Artery Labeling from X-Ray Angiograms", **IEEE Journal in Biomedical and Health Informatics[J]**, online.

   Reconstruction and labeling coronary arteries from 2D X-Ray images based on information from both frequency and spatial domain. With implementation of CUDA parallelism, this method is efficient compared with traditional methods (seconds vs minutes). Core codes are mainly based on C++, OpenGL and OpenCV, etc. Pre-processing and post-processing are mainly based on Python. Code lines: over 20,000, script lines: over 3,000.

4. **Xinglong Liu,** Fei Hou, Hong Qin, Aimin Hao , "A Parallelized 4D Reconstruction Algorithm for Vascular Structures and Motions Based on Energy Optimization", **The Visual Computer[J]**, 2015, 31(11): 1431-1446.

5. **Xinglong Liu,** Fei Hou, Hong Qin, Aimin Hao , "Parallelized 4D Structure, Shape, and Motion Reconstruction of Vessels from Multi-view X-Ray Angiograms", **Computer Graphics International 2014.**

6. **Xinglong Liu,** Fei Hou, Hong Qin, Aimin Hao , "Efficient 3D Reconstruction of Vessels from Multi-views of X-Ray Angiography", **CAD\Graphics 2013**, Poster.

7. Qinping Zhao, **Xinglong Liu**, Shuai Li, Fei Hou, 一种基于多视角 X 光片的心血管三维重建方法，CN 201310632617，**Patent**

8. Jingjing Yuan, **Xinglong Liu**, Fei Hou, Hong Qin, Aimin Hao, Hybrid-feature-guided Lung Nodule Type Classification on CT Images, **Computer and Graphics[J]**, Accepted

Technique Skills

- Language：C++, C#, Python, Lua, CUDA
- Toolkit：eXtreme Toolkit, MFC, QT, OpenGL, MITK, DirectX 9, Scaleform UI, SpeedTree, Git and SVN Version Control Systems
- Engine：CE3, Unreal 4, Unigine, Unity

Honors and Awards

- 2015.10 – 2016.10：Scholarship from China Scholarship Council, to visit Stony Brook University.
- 2010.09 – 2011.09：First-class Scholarship for graduate students at Beihang University.。
- 2010.06：Outstanding undergraduate, Shandong Province.
- 2010.06：Outstanding undergraduate design in Yantai University.
- 2007.09：Qilu Software Design Competition, 2nd Place.