

# Qing Xia (夏 清)

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## EDUCATION

- **Ph.D., Computer Graphics & Digital Geometry Processing** Sept. 2012 - Nov. 2018  
Thesis Title: *Researches on Geometric and Physical Structural Feature Analysis for 3D Shapes*  
Advisor: Prof. Aimin Hao (Beihang University) and Prof. Hong Qin (Stony Brook University, USA)  
State Key Laboratory of Virtual Reality Technology and Systems, Beihang University
- **Ph.D. (Honorary), Computer Science** Sept. 2012 - Nov. 2018  
School of Advanced Engineering (Shenyuan Honors College), Beihang University  
Honors doctoral program selecting candidates (around 25) in different majors, only 3 in CS
- **B.E., Computer Science** Sept. 2008 - Jun. 2018  
Thesis Title: *Research and Implementation on Screen Space Based Real-time Fluid Surface Rendering of SPH*  
School of Computer Science and Engineering, Beihang University  
Recommended to the Ph.D. program without exams, top 10%

## PROFESSIONAL SKILLS

Languages	Chinese (Szechuanese & Mandarin, mother tongue), English (Fluent)
Programming	C/C++, Matlab, Python, etc.
Expertise	Real-time Rendering, Geometry Processing, Parallel Computing, Machine Learning, etc.
Frameworks	OpenGL, GLSL, CUDA, OpenMP, Qt, Pytorch, OpenCV, ITK, etc.
Tools	Visual Studio, PyCharm, Office, Photoshop, Blender, Amira, MeshLab, ITK-SNAP, etc.

## AWARDS & HONORS

Excellent New Student Award (Top 400 in NCEE in Sichuan)	Sept. 2008
Outstanding Graduate Award (Outstanding at Beihang)	Jun. 2012
National Graduate Scholarship (3 <sup>rd</sup> place among doctoral students in SCSE at Beihang)	Oct. 2016
Excellent Foundation of BUAA for PhD students (Only 3 in CS)	May 2017
Best Paper Award of ICVRV 2017	Oct. 2017
Outstanding Academic Paper Award (JCR Q1 paper)	Apr. 2018
First Place Award of Atrial Segmentation Challenge @ MICCAI 2018	Sept. 2018
First Prize of IVRTC 2018 (Enterprise Group)	Oct. 2018

## PROGRAM EXPERIENCE

- **Visual Model and Environment Construction and Its Dynamic Simulation** Jan. 2016 - now  
PI: Prof. Hong Qin  
Duty: 3D model analysis and processing and other multi-source data applications related 3D models
- **Data Modeling and Interactive Virtual Surgery of Digital Human Organs** Jan. 2012 - Dec. 2016  
PI: Prof. Qinqing Zhao and Prof. Aimin Hao  
Duty: PCI virtual surgery prototype system and other related techniques

## ACADEMIC PRESENTATIONS

- **Pacific Graphics 2015, Beijing, China** Oct. 2015  
The 23rd Pacific Conference on Computer Graphics and Applications (Oral)

- **ACM VRST 2015, Beijing, China** Nov. 2015  
The 21st ACM Symposium on Virtual Reality Software and Technology (Oral)
- **GMP 2016, San Antonio, USA** Apr. 2016  
The 10th International Conference on Geometric Modeling and Processing (Oral, CAGD paper)
- **SIGGRAPH Asia 2016, Macau, China** Dec. 2016  
The 43rd SIGGRAPH Conference on Computer Graphics and Interactive Techniques (Oral, PCI simulator)
- **ICVRV 2017, Zhengzhou, China** Oct. 2017  
International Conference on Virtual Reality and Visualization (Oral)
- **CGI 2018, Bintan Island, Indonesia** June 2018  
Computer Graphics International (Oral)
- **MICCAI Workshop 2018, Granada, Spain** Sept. 2018  
The 21st International Conference on Medical Image Computing and Computer Assisted Intervention (Oral)

## PUBLICATIONS

### Conference

- [1] **Q. Xia**, S. Li\*, H. Qin and A. Hao. Modal Space Subdivision for Physically-plausible 4D Shape Sequence Completion from Sparse Samples. The 23rd Pacific Conference on Computer Graphics and Applications (Pacific Graphics 2015).
- [2] L. Yang, S. Li\*, **Q. Xia**, A. Hao and H. Qin. A Novel Analysis-and-Simulation Approach for Detail Enhancement in FLIP Fluid Interaction. The 21st ACM Symposium on Virtual Reality Software and Technology (VRST 2015).
- [3] Z. Xie, S. Li\*, **Q. Xia** and A. Hao. Kinetic simulation of cardiac motion with patient-specific coronary artery vessels attached for PCI simulator. International Conference on Virtual Reality and Visualization (ICVRV 2017). **Best Paper Award.**
- [4] X. Tan, X. Peng, L. Liu and **Q. Xia**\*. Automatic Human Body Feature Extraction and Size Measurement by Random Forest Regression Analysis of Geodesics Distance. International Conference on Virtual Reality and Visualization (ICVRV 2017).
- [5] C. Chen, **Q. Xia**, S. Li\*, A. Hao and H. Qin. High-fidelity Compression of Dynamic Meshes with Fine Details using Piece-wise Manifold Harmonic Bases. Computer Graphics International (CGI 2018).
- [6] **Q. Xia**\*, Y. Yao, Z. Hu and A. Hao. Automatic 3D Atrial Segmentation from GE-MRIs using Volumetric Fully Convolutional Networks. International Workshop on Statistical Atlases and Computational Models of the Heart (STACOM @ MICCAI 2018, **rank 1st in Atrial Segmentation Challenge**)

### Journal

- [1] S. Li, **Q. Xia**, A. Hao\*, H. Qin and Q. Zhao. Haptics-Equipped Interactive PCI Simulation for Patient-Specific Surgery Training and Rehearsing. SCIENCE CHINA Information Sciences, (2016) 59: 103101.
- [2] **Q. Xia**, S. Li\*, H. Qin and A. Hao. Automatic Extraction of Generic Focal Features on 3D Shapes via Random Forest Regression Analysis of Geodesics-in-Heat. Computer Aided Geometric Design, 49: 31-43, December 2016.
- [3] Y. Qiu, L. Yang, S. Li\*, **Q. Xia**, H. Qin and A. Hao. Novel Fluid Detail Enhancement based on Multi-Layer Depth Regression Analysis and FLIP Fluid Simulation. Computer Animation and Virtual Worlds, 2017, 28(5).
- [4] X. Tan, X. Peng, L. Liu and **Q. Xia**\*. Automatic Human Body Feature Extraction and Personal Size Measurement. Journal of Visual Languages and Computing, 2018, 47: 9-18.
- [5] S. Li, Z. Xie, **Q. Xia**, A. Hao\* and H. Qin. Hybrid 4D Cardiovascular Modeling based on Patient-Specific Clinical Images for Real-time PCI Surgery Simulation. Graphical Models. (to appear)
- [6] C. Chen, **Q. Xia**, S. Li\*, H. Qin and A. Hao. Compressing Animated Meshes with Fine Details using Local Spectral Analysis and Deformation Transfer. The Visual Computer. (to appear)
- [7] **Q. Xia**, S. Li, A. Hao\*, and Q. Zhao. Deep Learning for Digital Geometry Processing and Analysis: A Review. Journal of Computer Research and Development. (to appear)
- [8] **Q. Xia**, C. Chen, S. Li\*, A. Hao and H. Qin. Fast 4D Shape Sequence Completion from Sparse Samples via Spline Fitting in Linear Rotation Invariant Space. Graphical Models. (under review)