Qing Xia (夏 清)

Contact: neijiangxiaqing@gmail.com   Homepage: http://hsiatsing.github.io/

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 (3rd 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. Qinping 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, 2019, 101: 1-7.

[6] **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, 2019, 56(1): 155-182.

[7] J. Liu, **Q. Xia**, S. Li, A. Hao and H. Qin[*]. Quantitative and Flexible 3D Shape Dataset Augmentation via Latent Space Embedding and Deformation Learning. Computer Aided Geometric Design, 2019, 71:63-76.

[8] 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)

[9] **Q. Xia**[*], C.Chen, J. Liu, S. Li, A. Hao and H. Qin[*]. Efficient 4D Shape Completion from Sparse Samples via Cubic Spline Fitting in Linear Rotation-Invariant Space. Computer & Graphics. (to appear)