Mr. Qiang Fu

General Information

Date of birth: February 20, 1988
Address: Mailbox 6863, Beihang University, Beijing, China
Phone: +8615810540343
Email: fu.john.qiang@gmail.com
Personal website: https://johnfu1988.github.io

Education

Beihang University, Beijing, China

Ph.D. Candidate, Computer Science, Fall 2012 - Present, Supervisor: Prof. Xiaowu Chen

M.Sc Candidate, Control Science and Engineering, Fall 2011 - July 2012, Supervisor: Prof. Yingmin Jia

B.Eng., Control Science and Engineering, Fall 2007 - July 2011

Publications

Qiang Fu, Xiaowu Chen, Xiaotian Wang, Sijia Wen, Bin Zhou and Hongbo Fu. Adaptive Synthesis of Ind oor Scenes via Activity-Associated Object Relation Graphs. ACM Transactions on Graphics (Special Issue of SIGGRAPH Asia), 2017.

Qiang Fu, Xiaowu Chen, Xiaoyu Su and Hongbo Fu. Pose-Inspired Shape Synthesis and Functional Hybrid. IEEE Transactions on Visualization and Computer Graphics, 2017.

Qiang Fu, Xiaowu Chen, Xiaoyu Su, Jia Li and Hongbo Fu. Structure-adaptive Shape Editing for Man-ma de Objects. Computer Graphics Forum (Special Issue of Eurographics), 2016.

Qiang Fu, Xiaowu Chen, Xiaoyu Su, Hongbo Fu. Natural Lines Inspired 3D Shape Re-design. Graphical Models, 2016.

Xiaoyu Su, Xiaowu Chen, **Qiang Fu**, Hongbo Fu. Cross-class 3D Object Synthesis Guided by Reference Examples. Computers & Graphics (Special Issue on CAD/Graphics), 2015. (**Best paper award**)

Faming Li, Xiaowu Chen, Bin Zhou, Feixiang Lu, Kan Guo, **Qiang Fu**. Monocular Video Guided Garment Simulation. Journal of Computer Science and Technology, 2015.

Lin Wang, Kai Jiang, Bin Zhou, **Qiang Fu**, Kan Guo, and Xiaowu Chen. Single-View Dressed Human Modeling via Morphable Template. IEEE Conference on Virtual Reality and Visualization (ICVRV), 2014

Bin Zhou, Xiaowu Chen, **Qiang Fu**, Kan Guo and Ping Tan. Garment Modeling from a Single Image. Computer Graphics Forum (Special Issue of Pacific Graphics), 2013.

Research Experience

Graduate Student, State Key Laboratory of System & Technology, Beihang University

Indoor activity analysis **July 2017 - Now**

- Establishing a VR-based system to capture human motions under various indoor environments. Attempting to analyse the relationships between human activities in terms of motion sequences, and the geometry of indoor scene surrounding a certain agent. Adopting deep neural network to model such relationships thus to predict the potential interactive objects of indoor scenes by the given human motion sequences.

Activity-induced indoor scene synthesis **Sep. 2016 - July 2017**

- Proposed a novel adpative indoor scene synthesis approach to creating 3D scenes that only requires a very sparse specification of major object categories. Constructed activity-associated object relation graphs from a 2D floor plan database, to represent the object relations with repect to various indoor human activities.
- Primary algorithm designer & paper writer of the SIGGRAPH Asia 2017 paper.

Shape synthesis and functional hybrid **Sep. 2014 - July 2017**

- Proposed a novel framework for shaope synthesis and functional hybrid inspired by human posture. Presented an easy-to-use system to convert the given human pose to both in-class and cross-class 3D models based on part assembly.
- Proposed a novel example-driven method to tackle the cross-class shape synthesis problem.
- Primary algorithm designer & paper writer of the TVCG 2017 and CAD/G 2015 papers.

Shape editing of man-made objects **May 2013 - May 2016**

- Proposed a novel framework for structure-adaptive shape editing. Extracted both inter-group and intra-group priors of man-made objects to reveal the structure and shape configuration relaitons, and leverage such priors to facilitate shape editing.
- Presented a sweep-based shape editing approach to creating shape variations inspired by the lines extracted from images of natural objects. Proposed a metric for reference lines suggestion that assists the user to easily achieve the proper natural lines.
- Primary algorithm designer & developer & paper writer of the EG 2016 and GM 2016 papers.

Garment modeling **Sep. 2012 - May 2013**

- Proposed a novel framework for garment modeling from a single image, which provides both the contour profile and the fold details as the constrains. Implemented the Laplace shape editing algorithm to transfer the surface details extracted from the image shading to the garment mesh.
- Primary algorithm designer & developer of the PG 2013 paper.

Binocular-based impurity detection **Sep. 2009 - July 2010**

- Designed a binocular system to detect the impurity from the drink bottles.
- Primary developer of the Student Research Training Program.

Awards

- Excellant Paper Award, Beihang University, 2017
- Excellent Graduate Innovation Fund, Beihang University, 2016
- Best Paper Award of CAD/Graphics, 2015
- Student Research Training Program Fund, 2009
- First Prize of Chinese Chemical Society National Chemistry Contest for High School Students (Provincial Competion Area), 2006

Skills

- Mastering Matlab, writing readable codes in C/C++
- Knowledgeable of basic pipelines/algorithms for 3D modeling problems
- Familar with modern machine learning/optimization techniques
- Capable of development/documentation with various software: Visual Studio, Qt Creator, Unity3D, Latex, Office, etc