Dr. Pengfei Xu

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Research Interests

- Human-Computer Interaction
- Digital Geometry Processing

Education

Ph.D in Computer Science | Feb. 2012 – Jan. 2015 | Hong Kong Univ. of Sci. and Tech.

- Research Topic: Human-Computer Interaction

M.Phil in Computer Science | Feb. 2010 – Jan. 2012 | Hong Kong Univ. of Sci. and Tech.

- Research Topic: Digital Geometry Processing

B.Sc in Mathematics | Sep. 2005 – Jun. 2009 | Zhejiang Univ.

- Research Topic: Digital Geometry Processing
- GPA: 3.86/4.0, Ranked 2nd of 38

Projects

3D Mesh Processing

- Designed shape descriptor based on Laplacian field.
- Application: mesh segmentation, shape correspondences, shape skeletonization.

Scribble Selection of Graphic Elements

- Used scribble to quick select one or more desired shape elements by roughly stroking through the elements.
- Our tool is tolerant to imprecise input systems, applicable to touch systems.
- Our tool is much faster than traditional click and lasso tools (On average 80% faster for a selection task).

Layout Beautification of Graphic Elements

- Introduced a novel visual and gestural interface for layout creation. Used constraint system to optimize the layout.
- Our interface is an alternative of traditional snapping and arrangement command tools (on average 100% faster for a layout creation task).

Publications

P. Xu, H. Fu, C.-L. Tai and T. Igarashi. **GACA: Group-Aware Command-based Arrangement of Graphic Elements**. Proceedings of SIGCHI 2015, to appear.

P. Xu, H. Fu, T. Igarashi and C.-L. Tai. **Global Beautification of Layouts with Interactive Ambiguity Resolution**. Proceedings of ACM UIST 2014.

P. Xu, H. Fu, O. K.-C. Au and C.-L. Tai. **Lazy Selection: A Scribble-based Tool for Smart Shape Elements Selection**. Proceedings of SIGGRAPH Asia 2012.

Y. Zheng, C.-L. Tai, E. Zhang and **P. Xu**. **Pairwise Harmonics for Shape Analysis**. IEEE Transactions on Visualization and Computer Graphics (TVCG). 2013.

O. K.-C. Au, Y. Zheng, M. Chen, **P. Xu** and C.-L. Tai. **Mesh Segmentation with Concavity-Aware Fields**. IEEE Transactions on Visualization and Computer Graphics (TVCG). 2012.

P. Xu and L. Liu. **Developability Optimization Algorithm for 3D Mesh Surfaces**. Chinese Journal of Computers. 2010.

Technical Skills

C/C++, C#, OpenGL, OpenCV, LaTex, QT	Proficient
Adobe Photoshop, Adobe Illustrator, Adobe Premiere	Competent