Jie Xu

PERSONAL INFORMATION

Computer Graphics Lab
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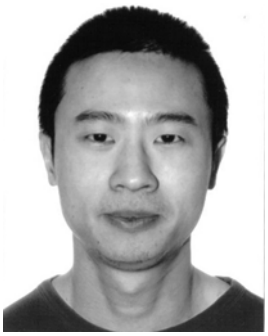

EDUCATION

PhD, Computer Science, University of Waterloo, 01/2009

Dissertation topic: Wholetoning: synthesizing abstract black and white illustrations. I define an art style wholetoning, which is a black and white illustration with abstraction in shape and tone. I offer a general framework called "artistic thresholding" to generate wholetoned images. I also study how to simulate several particular wholetoned styles, papercutting and representational calligraphy (Advisor: Craig S. Kaplan).

MS, Computer Science and Engineering, Zhejiang University, 2003

Thesis title: Cartoon animation creation combining motion capture data. We combined motion capture data to warp a 3D model and render it in a cartoon style (Advisors: Weidong Geng,Yunhe Pan).

BS, Computer Science and Engineering, Zhejiang University, 2000

CAREER OBJECTIVE

A research or advanced development job in a software company, especially a computer graphics, computer vision or artificial intelligence related position.

SKILLS

Computer Science:

Computer graphics techniques, expert, 8 years experience
Computational geometry, spatial data structures and algorithms, advanced, 5 years experience
Artificial intelligence and machine learning, intermediate, 4 years experience
Image processing and computer vision, intermediate, 3 years experience

Programming Languages:

C/C++ programming, expert, over 10 years experience
OpenGL, GLUT, CGAL, advanced, 5 years experience
Postscript, advanced, 5 years experience
GPU programming, intermediate, 1 year experience
Matlab, advanced, 3 years experience
Python, Java, Pascal, assembly, SQL, HTML/XML intermediate, 2 years experience

Operating Systems:

Windows Vista/XP/NT/2000, expert, 8 years experience
Linux/Unix/Cygwin, expert, 8 years experience

Software:

MS visual studio, Borland C++ builder, Delphi, advanced, 5 years experience
Maya, ZBrush, Adobe Photoshop, Illustrator, GIMP, advanced, 5 years experience
LaTeX/TeX, advanced, 5 years experience

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Other Abilities:

Strong in self-study, problem solving and troubleshooting
Expert in information retrieval, data organization and documentation
Able to cooperate with a wide range of personality types

HOBBIES AND INTERESTS

Diverse interests in art, music, cultural relics, video games, travel, harmonica, cuisine

PROFESSIONAL EXPERIENCE

University of Waterloo **Waterloo, Canada**

Research Assistant, Artistic Thresholding, Oct 2007 - Present

Work on a fundamental research about black-and-white image synthesis. Implement a general optimization framework to convert a color picture to a binary picture. Our system can create various artistic styles.

Research Assistant, Computer-Generated Papercutting, Jan 2007 - Oct 2007

Implemented a system to create paper-cut designs from several types of candidate sources such as designs from images, geometric patterns or procedurally-generated patterns. Defined a paper-cut algebra which can guarantee that the combination of two papercutting designs is still valid.

Research Assistant, Calligraphic Packing, Sep 2006 - May 2007

Developed a technique to represent an image as a composition of letters. Provided an optimization method to warp letters and select the best-fit results.

Research Assistant, Maze Construction, May 2004 - Dec 2007

Explored the area of computer generated mazes. Developed approaches to construct different maze textures (directional, spirals and vortices, and random) under the control of a user specified solution path.

Zhejiang University **Hangzhou, China**

Research Assistant, Computer Generated Bonsai System (sponsored by NSF of China), Nov 2001 - May 2002

Developed a modified L-system to describe bonsai plants. Some interactive tools are also provided to modify the plant model corresponding to different bonsai styles.

Ministry of education computer aided product innovative design engineering center, **Hangzhou, China**

Software developer, CAD System for Shoe Last, May 2001 – Dec 2001

Designed and implemented a prototype CAD system for shoe last. By acquiring a user's foot parameters using a 3D scanner, our system can customize a shoe last model to help shoe making.

Software developer, Case-based CAD System for Electronic Products, Sep 2000 – Apr 2001

Created a case-based knowledge base system to help users design electronic products.

TEACHING EXPERIENCE

University of Waterloo **Waterloo, Canada**

Teaching Assistant

TA for CS488, Introduction to Computer Graphics, Spring 2007.
TA for CS349, Developing User Interface, Winter 2005, Winter 2006.
TA for CS251, Computer Organization & Design, 2006, 2005,
TA for CS245, Logic and Computation, 2005, 2006
TA for CS134, Principles of Computer Science, 2003, 2004
TA for CS131, Introduction to Computer Programming, 2003, 2004

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PROFESSIONAL ACTIVITIES

ACM student member, since 2006
Reviewer for GI 2006, Bridges 2008
Invited speaker at C.O.R.E. digital pictures, 2005

PUBLICATIONS

Journal Articles

Jie Xu, Craig S. Kaplan. Vortex maze construction. *Journal of Mathematics and the Arts* 1(1), March 2007, Pages 7-20.

Conference Papers

Jie Xu, Craig S. Kaplan. Artistic Thresholding. In *NPAR 2008: Proceedings of the 6th international symposium on Non-photorealistic animation and rendering*, Pages 39-47, 2008.

Jie Xu, Craig S. Kaplan, Xiaofeng Mi. Computer-Generated Papercutting. In *Pacific Graphics 2007*, Pages 343-350, 2007.

Jie Xu, Craig S. Kaplan. Image-guided maze construction. In *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2007)*, 26(3):29, 2007.

Jie Xu, Craig S. Kaplan. Calligraphic packing. In *GI '07: Proceedings of the 2007 conference on Graphics Interface*, Pages 43-50, 2007.

Jie Xu, Craig S. Kaplan. Vortex maze construction. In *Bridges 2006: Mathematical Connections in Art, Music and Science*, 2006.

Guofei Hu, **Jie Xu**, Lanfang Miao, Qunsheng Peng: Bilateral Estimation of Vertex Normal for Point-Sampled Models. In *Computational Geometry and Applications (CGA05) Workshop*, pages 758-768, 2005.

Xiaofeng Mi, **Jie Xu,** Min Tang, Jinxiang Dong, The Droplet Virtual Brush for Chinese Calligraphic Character Modeling. In *IEEE Workshop on Application of Computer Vision (WACV'2002)*, 2002, Orlando, FL USA.

HONORS

Graduate

David R. Chertion Graduate Scholarship, 2007-2009
Zhejiang University Scholarship, First Prize, 2002
Excellent Example Graduate Student of Zhejiang University, 2002
EastCom Scholarship, 2002

Undergraduate

Excellent Graduate of Zhejiang University, 2000
Zhejiang University Scholarship, First Prize, 1999
Huawei Scholarship, 1999
Zhejiang University Scholarship, Second Prize, 1997-1998
Excellent Example Student of Zhejiang University, 1997-1999

REFERENCES

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