

YANLING LIU

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QUALIFICATIONS SUMMARY

- **Computer Graphics:** Solid background in 3D programming and theory. Develop 3D applications with C++, OpenGL and Direct3D. Shader and 3D effect programming.
- **Medical Visualization:** Photo-realistic real-time human organs rendering. Real-time interactions to virtual human organs including drilling, scanning and slicing. MPR and volume rendering based on CT and MRI images.
- **Technical Proficiencies:** OpenSceneGraph, Open Inventor, VTK, OpenGL, Direct3D, GLSL, HLSL, C/C++, MFC, Java, C#.
- **Key Strengths:** Enthusiastic and creative. Team player with demonstrated ability to conduct independent research and development. Finely tuned analytical and research skills with dedication to clear communication and presentations.

EDUCATION

Ph.D. in Computer Science (2008) - George Mason University, Fairfax, VA, US

M.S. in Communication Engineering (2001) - Southwest Jiaotong University, P.R.China

B.S. in Computer Science (1998) - Southwest Jiaotong University, P.R.China

EXPERIENCE HIGHLIGHTS

Siemens Corporate Research, Princeton, NJ

Temporary Technical Employee (Internship), 2007

Involved in multiple medical imaging projects in team environment. Developed diagnosis applications using C++, MFC, OpenGL, VTK and Open Inventor.

- Human rib segmentation and cancer detection on CT data.
- Human lesion detection, segmentation and editing on MR data.
- Human spine detection, separation, visualization and editing on CT data.
- VTK wrapping as nodes and engines for Open Inventor based visualization application.

George Mason University, Fairfax, VA

Research Assistant, 2002 - 2008

Designed and developed Virtual Human Anatomy and Surgery System (Ph.D. thesis). Independent software analysis and design using C++, MFC, C#, OpenGL, OpenSceneGraph and Fox-Toolkit.

- New method to generate a natural tissue color 3D human model from cryosection images.
- New 3D human model with separated organ parts and their identifications.
- Innovative algorithms in low-level model construction and real-time simulation.
- Real-time interaction tools, virtual surgery tools and learning tools.

Developed Glisten, a medical data analysis and visualization software aiding researcher to better understand molecule structure and function.

- Multi-layer glyph based representation for statistics in the context of protein structure.
- Innovative run time widgets.

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Page Two

George Mason University, Fairfax, VA

Teaching Assistant, 2005 – 2008

Teaching lab section for course "Programming Fundamentals using Java".

- Lead weekly lab classes to guide students in lab assignments.
- Held weekly office hours to answer questions from students.
- Assisted instructors with assignment and exam grading.

PROFESSIONAL ACTIVITIES

- Paper viewer for IEEE Transactions on Visualization and Computer Graphics, IEEE Computing in Science and Engineering, and Springer Virtual Reality journal special issue on VR based Edutainment.
- Paper viewer for IEEE Visualization 2006, IEEE Visualization 2007.
- Poster viewer for SIGGRAPH 2006.
- Student volunteer for IEEE Haptics Symposium 2006, IEEE Virtual Reality 2006, and IEEE Symposium on 3D User Interface 2006.

PUBLICATION

- Yanling Liu, Jim X. Chen, and Yang Lin, "Real-time Photo-Realistic Virtual Human Anatomy", *IEEE/AIP Computing in Science and Engineering*, vol.10, no. 2, March/April, 2008, pp. 41-47
- Yang Lin, Jim X. Chen and Yanling Liu, "Virtual Human Anatomy," *IEEE/AIP Computing in Science and Engineering*, vol. 7, no. 5, September/October 2005, pp. 71-73
- Yanling Liu, Changqian Zhu, "An I-Tree For Processing Dynamic 3D Scene", *Journal of Computer Applications*, vol. 21, no. 11, 2001, pp. 7-9, ISSN 1001-9081
- Changqian Zhu, Yanling Liu, "A Virtual Reality Travel Demonstration System Based on Microcomputer Local Networks", *Journal of Computer Applications*, vol. 21, no. 11, 2001, pp. 1-2,6, ISSN 1001-9081