

Jie Jiang

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Professional Profile

- Doctoral expertise in Virtual Reality, Computer Graphics, Human-Computer Interaction and Haptics.
- Practical experience in High Performance Visualization at Argonne National Laboratory.
- 2 year experience in industry as a Software Engineer developing SCADA system for energy industry.
- 6+ year practical programming experience in C++ and Python.

Related Experience

Argonne Leadership Computing Facility, Argonne National Laboratory

Lemont, U.S.

Graduate Research Aide

June 2015 – August 2015

- Project: Exploration of Multiple Streaming from v13 to Tiled Display
- Complexity: 2K C++ code for visualization server; 2K python code for streaming client and tiled display
- Detail: Implemented module for streaming ultra-high resolution images from a visualization cluster to a remote tiled display at nearly interactive frame rates.
 - Achievements: 1). Received Best Poster Award at IEEE Symposium on Large Data Analysis and Visualization (LDAV) and invitation to present at Visualization Infrastructure & Systems Technology (VISTech) workshop at SC15. Jiang, Jie, et al. "Streaming ultra high resolution images to large tiled display at nearly interactive frame rate with v13." LDAV, 2015. 2). Designed a scalable system to be deployed on both personal computers and dedicated visualization clusters; 3). Obtained 3.3 fps streaming of real-time rendered images at resolution of 6134x1248 from 2048³ volume data.

Graduate Research Aide

May 2014 – August 2014

- Project: Implementation of a Qt-based Streaming Client GUI for v13 Volume Rendering Framework
- Complexity: 6K C++ code
- Detail: Developed Qt-based streaming client GUI with intuitive and efficient user interaction.
- Contribution: Decoupled interaction and streaming enables remote collaboration.

Telvent, Schneider-Electric

Beijing, China

Software Engineer/ System Engineer

April 2010 - March 2012

- Project: SCADA system upgrade project of Shaanxi Provincial Natural GAS CO., LTD.
- Contribution: 1) Integrated enterprise-level distributed Supervisory Control and Data Acquisition (SCADA) System; 2) Designed communication network for 2 control centers and 35 stations with redundancy.

Education

University of Illinois at Chicago, Chicago, U.S.

August 2012 - Present

Ph.D. in Industrial Engineering and Operations Research

Industrial Virtual Reality Institute, Department of Mechanical and Industrial Engineering (GPA: 3.92/4.0)

Thesis: A Surface-based Volume Haptics Approach for Surgical Simulation of Craniotomy and Laminectomy

- Created surface-based volume haptics algorithm. The approach improves performance by preventing penetration on complex geometry. And it significantly reduces computational time by utilizing fast ray tracing.
- Implemented surgical simulations of craniotomy and laminectomy for medical education. Simulators have been launched on multiple medical institutions for residents training.
- Built a web based reporting system using MySQL database and Javascript visualization library.
- Applied sentiment classification on tweets regarding stock market events in Data Mining & Text Mining class project. Used Python scikit-learn package and Weka for data preprocessing and methods evaluation.
- Created visualization for NASA exoplanet database utilizing UIC EVL CAVE2 VR system in Computer Graphics II class. Wrote 3K lines of Python code.

Beijing Institute of Technology, Beijing, China

September 2006 - July 2010

Bachelor of Science, Electrical Engineering. Enrolled and Graduated from Honors Program (60 out of 3300)

Technical Knowledge

Programming languages: C++ (proficient), Python (proficient), Java (familiar), C# (prior experience)

Software development libraries: MPI, OpenGL, Open Inventor, OpenSceneGraph, OpenHaptics, VTK, QT