

3D Graphics Developer

Yisheng Chen

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Objective

A software developer position in which I can utilize my skills in analysis, problem solving, programming and research to produce amazing visual experience.

Technical Background

Movie and Video Game Credits

Rango (2011) -- R&D Engineer; Star Wars: The Force Unleashed II (2010) -- R&D Engineer;
NBA Live! (2007) -- Software Engineer; Ratatouille (2007) -- Technical Director

Programming Languages

C++, C, Python, MEL, Shading Languages (Cg, HLSL, Renderman)

Software API

Qt, PyQt, Maya API, OpenGL, OpenCV, Renderman SL

Software Packages

Microsoft Visual Studio, Eclipse, Matlab, Autodesk Maya & MotionBuilder, Adobe Photoshop & Premiere, Poser, PerForce

Research and Development Experience

Industrial Light and Magic, San Francisco, CA

Research and Development Engineer, Nov 08 – Present, Jan 08 - Jun 08

- Improved the stability of the in-house level design tool for LucasArts with nearly 50% fewer crashes and exceptions. (C++, Python)
- Overhauled the UI layout and enhanced the usability for the in-house animation curve editor for all Lucasfilm divisions, including ILM, LucasArts and Lucasfilm Animation. The clients include animators, layout artists, environment artists and more. (C++, Qt)
- Replaced the rigging and animation pipeline at LucasArts with brand new tools and augmented tools from ILM production, such as full-body pose targeting tools, animation exporting tools and procedural rigging tools. (PyQt, C++, MEL)
- Worked on various projects for creature development team, including creating new functionality and enhancing performance in enveloping/skinning tools, implementing translator between Maya and an in-house animation tool. (C++, Python)

Electronic Arts Canada, Vancouver, Canada

Software Product Developer Co-op, Jun 07 - Sep 07

- Integrated new assets (camera flashes, cheerleaders and mascots) and implemented an effect (motion blur) in NBA Live on both Xbox 360 and PS 3. (C++, Renderware, HLSL)
- Maintained the pipeline of art works integration. (Python)

Pixar Animation Studios, Emeryville, CA

Technical Director Intern, Jul 06 - Dec 06

- Implemented a light culling system for render speedup, resulting scene files after light culling render about 30% faster than before. (RenderMan, Python, C++)
- Optimized fog rendering by using shader profiling, resulting in new code produced at about 33% faster than the old one. (RenderMan, C++)

- Worked on global technology team, writing scripts and debugging for other departments including lighting, shading and animation. (Python, Perl)

The Ohio State University, Columbus, OH

Graduate Research Associate, Sep 03 – Dec 07

- Implementing a prototype system for human motion recognition, reconstruction and synthesis from a single video stream using motion capture data. (C++, Matlab, Premiere, Poser, OpenGL)
- Analyzing the motion of dancers and athletes from video streams and reconstructing the motion using a 3D synthetic model. (C++, Matlab, Premiere, Poser, OpenGL, and OpenCV)

Zhejiang University, Hangzhou, China

Research Associate, Jul 01 - Jun 02

- Co-implemented a system of video-based animation for BVH data format files. (C++, OpenGL, Poser)
- Co-developed an interactive multi-agents system for retargeting a motion to compensate for geometric variations caused by both characters and environments. (C++, OpenGL)

Education

A.B.D. Ph.D. Computer Science and Engineering, 2008

The Ohio State University, Columbus, OH

M.S. Computer Science and Engineering, 2007

The Ohio State University, Columbus, OH

B.S. Computer Science and Engineering, 2002

Zhejiang University, Hangzhou, China

Publications

Yisheng Chen, Rick Parent, Raghu Machiraju, Jim Davis, “Human Activity Recognition for Synthesis”, CVPR Workshop on Learning, Representation and Context for Human Sensing in Video, 2006.

Yisheng Chen, Jinho Lee, Rick Parent, Raghu Machiraju, “Markerless Monocular Motion Capture Using Image Features and Physical Constraints”, Computer Graphics International, June 2005, pages 36-43.

Selected Accomplished Coursework

Digital Cinematography

- Set lighting according to time of day, created procedure textures and shaders, and experimented with HDR rendering. (RenderMan shading language, Maya, Python)

MEL & C++ API Programming

- Implemented a path finding algorithm for crowd animation. (MEL, C++)

Motion Capture Production

- Created a 5-minute animation, by capturing, cleaning and editing motion data (a 4-member team). (MotionBuilder, Maya, Premiere)

Modeling and Keyframe Animation

- Created several polygonal and NURBS models. (Maya)
- Created a 2-minute animation of a person taking a dive (a 5-member team). (Maya, Premiere)

Computer Vision and Video Surveillance

- Developed a system for human head and body detection and tracking. (C++)

Computer Animation Production

- Created a 3-minute long animation of the tale of rabbit and turtle in a 5-member team. Developed the turtle model, forest model and several scenes. (Maya, Premiere)