ANIL ROHATGI

arohatgi@ea.com, (678) 520-4666
1225 Lake Shadow Cir 14-304
Maitland FL, 32751

INTERESTS

Research, development and implementation of cutting edge graphics and visualization technology.

SKILLS

Graphics: 3D Studio Max, MAYA, Unity3D, ZBrush, Flash, Adobe Photoshop, Premiere, After Effects
Programming: C, C++, C#, JAVA, HLSL, GLSL, CGFX, Direct X, OpenGL, MEL, Action Script, Python, Matlab, MathCAD, PSPICE, HTML, Assembly, LabView

FEATURES AND PUBLICATIONS

"Bakusho Mondai's Informating Japan"
TK Digital and HKN Broadcasting Network TV special on emerging AR/VR technologies *April 2010*

"Multi-Antenna RF Tag Measurement System Using Back-Scattered Spread Spectrum" *April 2008*
IEEE RFID Conference Las Vega, NV

"Implementation of an Anti-Collision Differential-Offset Spread Spectrum RFID System" *July 2006*
IEEE Antennas and Propagation Symposium Albuquerque, NM

WORK EXPERIENCE

Electronic Arts:
Software Engineer/ Technical Artist *Fall 2006 -- Present*

As a graphics engineer / technical artist, I have shipped over 6 AAA titles on Ps3, Xbox 360, Ps2, and Xbox

3D User Interface:

- Pioneered a new method of interaction between the user and the game by using dynamic 3D objects to control game flow.
- 3d UI is seamlessly integrated into the game environment to create a single coherent user experience.
- Technology is so compelling that EA is looking to leverage this system as a means to brand all their games.

3D Grass Rendering:

- Prototyped several techniques to improve the visual quality of our football fields
- Wrote an optimized shader to perform view dependant texture blending; giving the grass depth and parallax at grazing angles.
- Authored an algorithm to procedurally generate grass geometry; creating believable occlusions at close up and low angle cameras.

Real Time Cloth Simulation:

- Created a fully functioning, real time, GPU based cloth simulator.
- Exploited the topographical constraints of the cloth; removing the varlet integration from the simulation to substantially decrease processing time.
- Simulator is extremely robust and tunable; exposing nearly 16 parameters of freedom and dynamic preset loading capabilities

Live Video and 3D Integration:

- Developed a system seamlessly combine real life footage into a 3d environment.
- Wrote the rendering code to play, overlay, and blend full motion videos on top of the 3d world.
- Created an algorithm to synchronize the in game camera with camera motions of the pre recorded video.

Volumetric Light Scattering:

- Wrote a shader to simulate physical crepsecular rays; the scattering of light from atmospheric particles;
- Technique was run as a screenspace post effect, and could be applied to any scene with minimal setup
- Artists were given many of parameters to tune the effect and the ability to make any object ray emitter

Dynamic Crowd Attendance:

- Wrote an algorithm to naturally fill the stadium with spectators based on a variety of game factors
- Crowd dynamically updates according to the results of game by emptying realistically from back to front.

4th Wall Technologies:

Co-founder/Active CTO *Dec 2008 -- Present*

4th Wall Technologies is a company focused on the development of innovative Augmented/Virtual Reality Applications

Virtual Reality Walking Explorer:

- Created a system to track a subject's real world position and orientation, and mimic these motions inside a virtual environment.
- Developed an advanced sensor network using optical flow, MEMs accelerometers, and magnetic sensors to perform accurate motion tracking of the subject.
- Results of the simulation are displayed to the user through a 3d stereoscopic HMD for real time feedback.

Immersive Free Standing Virtual Reality Display:

- Constructed a large VR system employing a pressure sensitive floor mat and optical head tracking; allowing a user to explore a virtual environment in a confined space.
- Designed a complex display system utilizing advanced optics, image processing, and a stereoscopic 3d projector to display the virtual world onto a large, immersive hemispheric dome.
- Wrote a motion sensing algorithm to allow the user to intuitively interact with the virtual world.

Augmented Reality Avatar Chat:

- Devised a new, fun, and interactive way for people to communicate by using customizable virtual avatars on their mobile devices.
- Augmented reality technology is used to seamlessly integrate these 3d characters into the real world; so they appear in front of the user as if they are really there.

Augmented Reality Interior Design:

- Developed an augmented reality application that allows users to visualize interior design by placing virtual objects in the real world.
- Virtual objects can be added, swapped, and modified in real time to increase productivity while reducing iteration time and costs.

Georgia Tech College of Electrical Engineering: *June 2005*

Graduate Research Assistantship

Implementation and Applications of an Anti-Collision Differential-Offset Spread Spectrum RFID System:

- Designed and fabricated a PCB spread spectrum anti-collision RFID tag.
- Composed and Presented a paper for the IEEE AP-S conference on July 2006
- Extended the anti-collision RFID system for a novel use in antenna diversity experiments.
- Wrote a Master's Thesis on the spread spectrum anti-collision RFID system developed.

EDUCATION

Georgia Institute of Technology		**GPA:**
Master's degree in Electrical and Computer Engineering with Highest Honors	Summer 2006	**3.50**
Bachelor degree in Electrical and Computer Engineering with Highest Honors	Spring 2005	**3.77**

HONORS AND AWARDS

- 3 time recipient of an EA award for outstanding achievement and innovation
- Acceptance to the Georgia Tech College of Electrical Engineering accelerated Bachelors/Masters program (2005)
- Deans List of Academic Recognition (2001-2006)
- HOPE Scholarship (2001-2005)
- Recipient of the GT2 scholarship (2001)
- Georgia Tech Faculty Women's Club Scholarship (2005)