



- Provided technical direction for next-gen action/adventure console game title using the *Unreal 3* engine technology
- Specified technology guidelines for an animation system utilizing advanced motion editing and physics-based techniques
- Wrote technical design documents during pre-production including animation transition diagrams and detailed overviews of common motion editing, blending, and simulation techniques

**Microsoft Game Studios**

5/2002 – 8/2002

Redmond, WA

*Program Manager Intern*

- Explored production side of game development by managing opening cinematic and beta program for Rise of Nations PC title
- Included realizing core vision of the game through a cinematic, contract negotiations, budget management, and design specification

**LucasArts Entertainment Company**

6/2001 – 8/2001

San Rafael, CA

*Programming Intern*

- XBOX console development experience on published title Obi-wan
- Developed in-engine 3D directional sound authoring tools, light editor, level modification and source control management
- Engineered force feedback support and authoring tools for game engine and associated scripting language

**SKILLS**

**Languages:** C/C++, Objective-C, C#, UnrealScript, Java, GLSL/HLSL shaders, MEL Script, Intel x86 Assembly, Python, SQL, ASP, JSP + Servlets, Perl, Javascript

**APIs:** iPhone SDK, WPF, OpenGL, Cocoa, STL, ODE Physics, Win32, Java 2.x API (including JDBC), FMod, DirectX, wxWindows, FLTK

**OS:** Windows XP, Apple Mac OSX, Unix/Linux

**Software:** MS Visual Studio, XCode, Expression Blend, SVN/CVS/Perforce, gcc/gdb, Motion Builder, 3DSMax, Maya, Interface Builder, Adobe Photoshop, Flash

**Published Game Titles:**

*The Beatles Rockband.* Harmonix 2009.

*Rock Band 3.* Harmonix 2010.

*Dance Central.* Harmonix 2010.

**Personal Projects:** iPhone game: MeowWalker, portable rhythm/puzzle experiments, physically-based character animation, skeletal animation system, motion capture editing, event-driven 2D compositing engine, cloth simulation, terrain renderer, ray tracer, console debugger

**PUBLICATIONS**

G. Sukthankar, **M. Mandel**, and K. Sycara. Creating Physically Embodied Agents Using Realistic Human Motion. In *Simulation Gaming Journal*. March, 2008. SAGE Publications. <http://sag.sagepub.com/cgi/content/abstract/39/1/64>.

M. Mandel and V. Zordan. Beyond Ragdolls: Generating Versatile Human Behaviors by Combining Motion Capture and Controlled Physical Simulation. In *Proceedings of Game Developer's Conference (GDC), 2005.*

M. Mandel. Adding Life to Ragdoll Simulation Using Feedback Control Systems. *Game Programming Gems 5.* Charles River Media, 2005.

M. Mandel. Versatile and Interactive Virtual Humans: Hybrid use of Data-Driven and Dynamics-Based Motion Synthesis. Master's thesis, Carnegie Mellon University, 2004.

G. Sukthankar, **M.Mandel**, K. Sycara, and J. Hodgins. Modeling Physical Capabilities of Humanoid Agents Using Motion Capture Data. In *Proceedings of International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2004.*

G. Sukthankar, **M.Mandel**, K. Sycara, and J. Hodgins. Modeling Physical Variability

for Synthetic MOUT Agents. In *Proceedings of Behavior Representation in Modeling and Simulation Conference (BRIMS)*, 2004.

## **HONORS**

**Honors:** 2004 GameTech student scholarship winner, Recommended Reading Award for BRIMS 2004 conference paper, 5<sup>th</sup> Year Scholars Program at Carnegie Mellon, Yo-Yo Ma master class participant